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WEED CONTROL FOR CORN, SOYBEANS, AND SORGHUM

This guide is based on the results of research conducted by the personnel of the University of Illinois Agricultural Experiment Station, other experiment stations, and the U.S. Department of Agriculture (USDA). The soils, crops, and weed problems of Illinois have been given primary consideration.

The user should have an understanding of cultural and mechanical weed control. As these practices change little from year to year, this chapter focuses on making practical, economical, and environmentally sound decisions regarding herbicide use.

Most of the suggestions in this guide are intended primarily for ground applications. For aerial applications, such factors as carrier volume and adjuvant selection may differ.

PRECAUTIONS

The benefits of chemical weed control must be weighed against the potential risks to crops, people, and the environment. Discriminate use should minimize exposure of humans and livestock, as well as desirable plants. Risks can be reduced by observing current label precautions.

CURRENT LABEL

Precautions and directions for use may change. Herbicides classified as restricted use pesticides (RUPs) must be applied by certified applicators (Table 4). Use of these herbicides may be restricted because they are toxic or pose environmental hazards. The degree of toxicity is indicated by the signal word on the label.

SIGNAL WORD

Heed the accompanying precautions. The signal words for herbicides discussed in this chapter are given in Table 4. "Danger-Poison" and "Danger" indicate high toxicity hazards, whereas "Warning" indicates moderate toxicity. Always use personal protective equipment (PPE) as specified on the herbicide label for handling and application. Keep persons or animals not directly involved in the operation out of the area. Observe reentry intervals (REIs) as specified on the label. "Agricultural Use Requirement" on the label may require posting of the treated area. Use special drift precautions near residential areas.

ENVIRONMENTAL HAZARDS

Groundwater advisories (Table 4) must be observed, especially on sandy soils with a high water table. The threat of toxicity to fish and wildlife is indicated under "Environmental Hazards" on the herbicide label. Hazards to endangered species may be indicated.

PROPER HERBICIDE USE

Apply only to approved crops at the proper rate and time. Illegal residues can result from overapplication or improper timing. Observe the recommended harvesting or grazing intervals after treatment.

PROPER EQUIPMENT USE

Make sure that spray tanks are clean and free of other pesticide residues. Many herbicide labels provide cleaning suggestions, which are particularly important when spraying different crops with the same sprayer and especially when using postemergence herbicides.

The information in this chapter is provided for educational purposes only. Product trade names have been used for clarity, but reference to trade names does not imply endorsement by the University of Illinois; discrimination is not intended against any product. The reader is urged to exercise caution in making purchases or evaluating product information.

Label registrations can change at any time. Thus the recommendations in this chapter may become invalid. The user must read carefully the entire, most recent label and follow all directions and restrictions. Purchase only enough pesticide for the current growing season.

Correctly calibrate and adjust the sprayer before adding the herbicide to the tank.

PROPER DRIFT PRECAUTIONS

Spray only on relatively calm days when the wind is light. Make sure the wind is not moving toward areas of human activity, susceptible crops, or ornamental plants. Nearby residential areas and fields of edible horticultural crops deserve special attention. *Use special precautions with 2,4-D, Banvel or Clarity, Celebrity Plus, Command 3ME, Distinct, glyphosate (many trade names), Gramoxone Inteon, Hornet WDG, Marksman, NorthStar, Shotgun, and Stinger*, as symptoms of injury have occurred far from the application site.

PRECAUTIONS TO PROTECT THE CROP

Avoid applying a herbicide to crops under stress or predisposed to injury. Crop sensitivity varies with size of the crop and climatic conditions as well as previous injury from plant diseases, insects, or chemicals.

PROPER RECROPPING INTERVAL

Failure to observe the proper recropping intervals may result in carryover injury to the next crop. Soil texture, organic matter, and pH may affect herbicide persistence. Check Tables 5a and 5b and current labels for recropping restrictions.

PROPER STORAGE

Promptly return unused herbicides to a safe storage place. Pesticides should be stored in their original, labeled containers in a secure place away from unauthorized people (particularly children) and livestock and their food or feed.

PROPER CONTAINER DISPOSAL

Containers for liquids should be pressure- or triple-rinsed. Properly rinsed containers can be recycled and may be accepted by some sanitary landfills. Haul paper containers to a sanitary landfill or burn them in an approved manner. If possible, use mini-bulk returnable containers.

CULTURAL AND MECHANICAL CONTROL

Good cultural practices that aid in weed control include adequate seedbed preparation, adequate fertilization, crop rotation, planting on the proper date, using the optimal row width, and seeding at the rate required for optimal stands.

Planting in relatively warm soil can help the crop emerge quickly and compete better with weeds. Good weed control during the first 3 to 5 weeks is extremely

important for both corn and soybeans, as they usually compete quite well with most of the weeds that begin growing later. Narrow rows help the crop compete better with the weeds. However, if herbicides alone cannot give adequate weed control, then keep rows wide enough to allow for cultivation.

If adequate rainfall does not occur after the application of a soil-applied herbicide, use a rotary hoe after weed seeds have germinated but before most weeds have emerged. Operate it at 8 to 12 miles per hour, and weight it enough to stir the soil and kill the tiny weeds. Rotary hoeing also aids crop emergence if the soil is crusted.

Row cultivators also should be used while weeds are small. Throwing soil into the row can help smother small weeds. Proper adjustment of equipment (speed, depth, and angle) is essential for minimizing crop injury and pruning crop roots. Cultivation may not be needed where herbicides are adequately controlling weeds unless the soil is crusted or needs aeration.

HERBICIDE INCORPORATION

Trifluralin is incorporated to minimize surface loss. Other soil-applied herbicides may be incorporated to minimize dependence on timely rainfall or to improve control of certain weed species.

Incorporation should place the herbicide uniformly throughout the top 1 to 2 inches of soil for the best control of most weeds. Slightly deeper placement may improve the control of certain weeds under relatively dry conditions but may dilute the herbicide and reduce its effectiveness. Incorporation tools usually distribute most of the herbicide into the soil to about one-half the depth of operation. Thus, for most herbicides, the suggested depth of operation is 3 to 4 inches for most tillage tools.

Thorough incorporation often requires two passes, but the second pass may be delayed if the first pass adequately reduces surface loss of the herbicide. The second pass should be at an angle to the first pass and no deeper. Single-pass incorporation may be adequate, especially if rotary hoeing, cultivation, or subsequent herbicide treatment maintains adequate weed control.

Accurate application and uniform distribution help minimize crop injury and carryover problems. Uniform distribution depends on the type of equipment used, the depth and speed of operation, the texture of the soil, and the amount of soil moisture. Field cultivators, tandem disks, and disk-chisels or other combination tools are sometimes used for incorporation. More uniform herbicide distribution is provided by two passes than one, whether with a field cultivator or tandem disk.

FIELD CULTIVATORS

Field cultivators used for herbicide incorporation need at least three rows of shanks equipped with sweeps (not points), each with an effective working space of 7 inches or less. Sweeps for C-shank cultivators should be at least as wide as the effective shank spacing. Set the equipment to cut in a level position at 3 to 4 inches deep and to operate at a minimum of 5 miles per hour.

TANDEM DISKS

Tandem disks used for herbicide incorporation should have disk-blade diameters of 20 inches or less and blade spacings of 7 to 9 inches. *Do not use larger disks for incorporating herbicides.* Set the disk to cut 3 to 4 inches deep, and operate at 4 to 6 miles per hour or a speed sufficient to move soil the full width of the blade spacing. Slower speeds or lack of a leveling device can result in herbicide streaking.

COMBINATION TOOLS

Several tillage tools combine disk gangs, field cultivator shanks, and leveling devices. Many combination tools can handle large amounts of surface residue without clogging and yet leave adequate crop residue on the soil surface for erosion control. Results indicate that these combination tools may provide more uniform one-pass incorporation than a disk or field cultivator, but one pass with them is generally no better than two passes with the disk or field cultivator.

CHEMICAL WEED CONTROL

Plan your weed-control program to fit your soils, tillage program, crops, weed problems, and farming operations. Good herbicide performance depends on the weather and on wise selection and application. Your decisions about herbicide use should be based on the nature and seriousness of your weed problems. The herbicide susceptibility of common weed species is indicated in several tables in this guide.

Corn and soybean are occasionally injured by herbicides applied to these crops. To minimize crop injury, apply the herbicide uniformly at the stage of crop growth specified on the label and at the correct rate (see the section on "Herbicide Rates"). Crop tolerance ratings for various herbicides are also given in the tables in this chapter. Unfavorable conditions such as cool, wet weather; delayed crop emergence; deep planting; seedling diseases; soil in poor physical condition; and poor-quality seed may contribute to crop stress and herbicide injury. Hybrids and varieties vary also in their tolerance to herbicides and environmental stress factors. Once injured by a herbicide, plants may be more prone to disease.

Crop-planting options for the next season also must be considered when selecting a herbicide program. Corn and soybean herbicides may have restrictive recropping intervals for some agronomic and many vegetable crops. Tables 5a and 5b cover recropping intervals for the major agronomic crops grown in Illinois, but always check the label. Recropping intervals may be extended for previous, subsequent, or late-summer herbicide applications as well as droughty weather or soil pH. Command or Scepter (in northern Illinois) can restrict planting wheat after soybean, whereas atrazine restricts planting wheat after corn. For soybean, the persistent corn herbicides of concern are atrazine, clopyralid, and prosul-furon. STS soybeans may help reduce the carryover problem with prosulfuron. Special concerns are rate and date of application, as well as rainfall amount and soil pH. When corn follows soybean, the major concerns are imazaquin and chlorimuron; but some corn hybrids may minimize this concern (see the label). Be sure that the application of persistent herbicides is uniform and properly timed to minimize injury to wheat or corn. Refer to the herbicide label for information about cropping sequence and appropriate recropping intervals.

For some herbicides, different formulations and concentrations are available under the same trade name. *No endorsement of any trade name is implied, nor is discrimination against similar products intended.*

WEED RESISTANCE TO HERBICIDES

One of the disadvantages of chemical weed control is that weeds can become resistant to herbicides. Herbicide resistance is presently a problem in Illinois. There are triazine-resistant pigweed, waterhemp, lambsquarters, and kochia, as well as acetolactate synthase (ALS)-resistant waterhemp, kochia, cocklebur, ragweed, eastern black nightshade, giant foxtail, and shattercane. There is also diphenylether-resistant (PPO) waterhemp and glyphosate-resistant horseweed (marestail). All of these herbicides have been widely used in Illinois; and if not managed properly, the problem of herbicide-resistant weeds has the potential to increase.

Certain management strategies can help deter the development of herbicide-resistant weeds:

1. Scout fields regularly to identify resistant weeds. Monitor changes in weed populations to restrict the spread of herbicide-resistant weeds.
2. Rotate herbicides with different sites of action. Do not make more than two consecutive applications of herbicides (whether within the same year or in successive years) with the same site of action against the same weed. Instead, include other

effective management strategies for weed control. This approach is especially critical when using herbicide-resistant crops.

3. Use multiple sites of action (tank mix, premix, or sequential) that effectively control potentially resistant weeds.
4. Where practical, use rotary hoeing and cultivation to control weed escapes. If necessary, use hand weeding to minimize the spread of herbicide-resistant weeds.
5. Be aware that resistant weeds can spread from total-vegetation-control (TVC) programs used along highway, railroad, or utility rights-of-way areas near your farm.

For further information on the causes of herbicide resistance and strategies to minimize it, visit your local Extension office or see Chapter 12, "Weed Resistance to Herbicides," in the current edition of the *Illinois Agricultural Pest Management Handbook*.

HERBICIDE COMBINATIONS

Herbicide combinations (tank mixes, premixes, or sequential applications) can control more weed species, reduce carryover, and reduce crop injury. Some labels allow split applications (the same herbicide applied at different times) or sequential applications (different herbicides applied at different times). Numerous combinations of herbicides are sold as premixes, and some are tank-mixed. Registered premixes are shown in Tables 6 and 7 in this chapter. Tank-mixing allows you to adjust the ratio of herbicides to fit local weed and soil conditions, whereas premixes may overcome some of the compatibility problems found with tank-mixing. When using a tank mix, you must follow restrictions for all products used in the combination.

Problems may occur when mixing emulsifiable-concentrate (EC) formulations with suspendible herbicides, such as liquid-flowable (L) or dry-flowable (DF) formulations. Proper mixing procedure may minimize these problems. The label of most soil-applied herbicides specifies a compatibility test when a liquid fertilizer carrier is used. First, fill tanks at least one-fourth full with carrier (water or liquid fertilizer) and start tank agitation. Next, if needed, add the compatibility agent at the rate indicated by the test or adjuvant label. Add suspendible herbicide formulations as just described and completely suspend (thoroughly mix) before adding emulsifiable concentrates. Mix ECs with equal volumes of water (thoroughly emulsify) before adding them to the tank. Add soluble formulations (those that do not emulsify or disperse) last. Empty and clean spray tanks often enough to prevent accumulation of material on the sides and bottom of the tank.

HERBICIDE RATES

Herbicide rates vary according to the time and method of application, soil conditions, tillage system used, and seriousness of the weed infestation. Rates of individual components within a combination are usually lower than rates for the same herbicides used alone.

The rates for soil-applied herbicides often vary with the texture of the soil and the amount of organic matter the soil contains. For sandy soils, the herbicide label may specify reducing the rate or not using any if crop tolerance to the herbicide is marginal. Post-emergence rates often vary, depending on the size and species of the weeds.

The rates given in this chapter are, unless otherwise specified, broadcast rates for the amount of formulated product. If you plan to band or direct herbicides, adjust the amount per crop acre according to the percentage of the area actually treated. Herbicides may have formulations with different concentrations of the active ingredient. Be sure to read the label and make necessary adjustments when changing formulations.

POSTEMERGENCE HERBICIDE PRINCIPLES

Postemergence herbicides applied to growing weeds generally have foliar rather than soil activity; however, some may have both. The rates and timing of applications are based on weed size and climatic conditions. When weeds are small, they usually can be controlled with lower application rates. Larger weeds often require higher herbicide rates. Herbicide penetration and action are usually greater with warm temperature and high relative humidity. Rainfall occurring too soon after application (0.5 to 6 hours, depending on the herbicide) can reduce weed control.

Translocated herbicides are most effective at lower spray volumes (5 to 20 gallons per acre), whereas contact herbicides require more complete coverage. Foliar coverage increases as water volume and spray pressure are increased. Spray nozzles that produce small droplets also improve coverage. For contact herbicides, labels usually specify to use 10 to 40 gallons of water per acre for ground application and a minimum of 5 gallons per acre for aerial application. Spray pressures of 30 to 60 psi are often suggested with flat-fan or hollow-cone nozzles to produce small droplets and improve canopy penetration. *These small droplets are subject to drift.*

Crop size limitations may be specified on the label to minimize crop injury and maximize weed control. If weeds are smaller than the crop, basal-directed sprays may minimize crop injury because they place more herbicide on the weeds than on the crop. If the weeds are taller than the crop, rope-wick or sponge-type applicators may be used to place the herbicide

on top of the weeds and minimize contact with the crop. Follow the label directions and precautions for each herbicide.

Herbicide adjuvants, such as crop-oil concentrate (COC), nonionic surfactant (NIS), or ammonium fertilizer, may be specified on the herbicide label. Crop-oil concentrates spread the herbicide across the leaf surface, keep the surface moist longer, and aid penetration into the cuticle. COCs are phytobland oils with emulsifier (surfactant) added to allow better mixing with water. The oil may be of petroleum (POC) or vegetable (VOC) origin. Methylated seed oils (MSO) are esters of fatty acids formulated to provide better performance than a conventional VOC. Most labels allow POC, MSO, or VOC. COCs are used at 1 to 3 pints per acre or about 1 percent on a volume basis. Oils generally have a greater postemergence effect than surfactants do *on both weeds and crops*.

Surfactants cause a spreading and wetting action by decreasing the surface tension of water, allowing the spray mix to spread over waxy or hairy leaf surfaces rather than forming droplets. Because more leaf surface is covered, more herbicide may be absorbed. Surfactants may contain fatty acids to improve penetration. Labels may specify that the NIS should contain a minimum of 75 to 85 percent active ingredient or else you should use a higher surfactant rate. An NIS usually is applied at 0.25 to 1 pint per acre or 1/8 to 1/2 percent on a volume-to-volume basis.

Ammonium fertilizers are added to increase herbicide activity on weed species such as velvetleaf. Ammonium sulfate and urea-ammonium nitrate solution (28-0-0 UAN) are the most common fertilizer adjuvants, although ammonium polyphosphate (10-34-0 APP) may also be specified. UAN usually is used at 2 to 4 quarts per acre. Labels for contact herbicides may specify that a fertilizer adjuvant replace an NIS or a COC, while translocated herbicides usually specify UAN in addition to an NIS or a COC.

Drift-reduction agents are added to the spray tank to reduce small-droplet formation and thus reduce spray-particle drift. See the adjuvant label for rates, as drift retardants vary greatly in formulation.

CONSERVATION TILLAGE AND WEED CONTROL

Conservation tillage allows crop production, while reducing soil erosion by protecting the soil surface with plant residue. Minimum or reduced tillage refers to any tillage system leaving crop residue on the soil surface, including primary tillage with chisel plows or disks and the use of field cultivators, disks, or combination tools for secondary tillage. Mulch tillage is reduced tillage that leaves at least 30 percent of the soil surface covered with plant residue.

Ridge tillage and zero tillage are conservation tillage systems with no major tillage prior to planting. In ridge tillage, conditions are often ideal for banding preemergence herbicides because cultivation is a part of the system. "No-till" is actually "slot tillage" for planting with no overall primary or secondary tillage. No-till planting conserves moisture, soil, and fuel. It also allows timely planting of soybeans or sorghum after winter wheat harvest (double-cropping).

If tillage before planting is eliminated, undesirable existing vegetation must be controlled with herbicides before, at, or after planting. The elimination or reduction of preplant tillage and row cultivation puts a greater reliance on chemical weed control. Greater emphasis may be placed on preplant or postplant soil-applied herbicides that are not incorporated or on foliar-applied herbicides. Herbicides are available to allow "total postemergence" weed control in corn and soybeans.

Where primary tillage is minimized, soil-residual herbicides applied several weeks before planting may reduce the need for a "burndown" herbicide. However, early preplant (EPP) application may require additional preemergence or postemergence herbicides or cultivation for satisfactory weed control after planting.

Corn and soybean are the primary crops in Illinois, and they are often planted in sequence. Modern equipment allows successful no-till planting in corn and soybean stubble. The use of a disk or chisel plow on corn stubble may still provide adequate crop residue to meet mulch-till requirements.

Soybean stubble is often ideal for minimum- or zero-tillage production systems. Primary tillage is rarely needed, and the crop residue, if properly spread, should not interfere with herbicide distribution. Early preplant application of preemergence herbicides or the use of postemergence herbicides often provides adequate weed control.

The existing vegetation in corn and soybean stubble is usually annual weeds. If small, weeds often can be controlled before planting with herbicides that have both foliar and soil-residual activity. In cases where annual vegetation is more than 2 to 3 inches tall at planting, either a contact or translocated broad-spectrum herbicide (such as paraquat or glyphosate) can be added to the spray tank. If the problem is broadleaf weeds, 2,4-D or dicamba may be used prior to planting corn or no-till soybeans, *but observe the planting delay specifications*. Herbicides that can be used prior to planting to control existing vegetation are listed in Tables 1, 2, and 3.

Some growers in Illinois are using annual cover crops not only to control weed problems at planting but also for erosion control. Annual cover crops in Illinois are hairy vetch, winter rye, and winter wheat. Hairy vetch, a winter annual legume, is easily con-

trolled with 2,4-D or dicamba before planting corn. Winter rye or winter wheat can be controlled by glyphosate prior to planting corn or soybeans. Cover crops should be controlled prior to planting crops, but the question is “How early do we do this?” If the season is dry, late control depletes soil moisture for crop establishment; but if the season is wet, late control helps dry out the soil. Decomposing residue of small-grain cover crops can sometimes inhibit corn seedlings.

Perennial sods require a different approach. It is estimated that 65 to 70 percent of the Conservation Reserve Program (CRP) acres in the Corn Belt may return to cropland. Many of these acres have been planted to perennial grass or legume sods. The questions here are these: What is the best way to control sod species? What is the best timing for control, and what are the best cropping choices? *Sods should be killed prior to planting crops into them* (Table 10).

Perennial grass sods were planted on much of the CRP land. Glyphosate provides the best “sod grass” control. *Fall application is more effective than spring application.* Mowing the sod in late summer allows adequate regrowth for timely fall application. Active regrowth should be 6 to 8 inches before fall application. Springtime applications must be delayed to obtain 6 to 10 inches of new growth for effective control. In the spring, paraquat (Gramoxone Inteon) + atrazine is often as effective as glyphosate for controlling several grass species (Table 10). Preplant glyphosate rates may be reduced if followed with atrazine at corn planting. If grass–legume mixes are established, the legume component must also be controlled.

Perennial legume sods must have 6 to 8 inches of new growth for effective control. *Do not take a spring cutting before controlling legumes,* as this delays corn planting. Corn better utilizes legume nitrogen and allows preplant or postemergence use of 2,4-D or dicamba. Dicamba controls alfalfa better than 2,4-D does, but either controls red clover. When glyphosate is used, adding dicamba improves alfalfa control, and adding 2,4-D improves dandelion control. Glyphosate may be applied before the last alfalfa cutting in the fall or spring. Clover sods may be controlled by atrazine (see Tables 9 and 10).

FALL HERBICIDE APPLICATIONS

The practice of applying herbicides in the fall has been increasing in Illinois. Growers are using two very different approaches to fall herbicide applications. The first approach is to apply soil-applied grass herbicides, such as metolachlor, flufenacet, dimethenamid, or pendimethalin, to control annual grass species the following season. These herbicide applica-

tions are generally made north of Interstate 80, in conventional tillage fields, and after soil temperatures decrease to 50°F but before the ground freezes. The reasoning behind these fall herbicide applications is to spread the workload out for the applicators, as well as to ensure adequate precipitation for incorporation of these herbicides. There are disadvantages to these types of applications: first, they require higher herbicide application rates and, second, the grass control may not last throughout the entire growing season due to herbicide dissipation. There are several herbicides that can be used in the fall for annual grass control. These herbicides are identified in Tables 1 and 3 (see the “Application timings” section in these tables).

The second approach to fall herbicide applications is to control winter annual and perennial weeds in no-till corn and soybean fields. This approach is used primarily by growers who have had difficulty controlling winter annual and perennial weeds in no-till fields in the spring. Winter annual weeds, such as purple deadnettle, henbit, chickweed, horseweed (marestail), and a number of mustard species, can form a dense weed mat that can be difficult to control with spring burndown herbicides. These problems can result from insufficient spray coverage, fluctuating spring temperatures, and timeliness of the application due to uncooperative spring weather.

Controlling winter annual and simple perennial weeds in the fall has a number of potential benefits. This practice can prevent dense mats of winter annual weeds that can physically interfere with planting and tillage, can reduce vegetation where insects may harbor, and can possibly allow earlier planting due to faster soil drying and warming. In addition, controlling these weeds in the fall prevents them from producing seed, thereby decreasing the soil seed bank and helping reduce future problems with these species. Fall control of simple perennials, such as dandelion and white cockle, is much more effective than controlling these weeds in the spring. In the fall, food reserves in these perennials are being moved to the roots. When a systemic herbicide is applied, that herbicide moves with the food reserves to the roots and can cause complete control of the roots. Additionally, higher rates of some translocated herbicides (such as 2,4-D) can be used in the fall, thus allowing for greater control of perennial weeds like dandelion.

There are currently three basic strategies to control winter annual weeds with fall herbicide applications: (1) apply a herbicide with residual soil activity before most of the winter annual weed species germinate; (2) apply a nonresidual herbicide, such as glyphosate, 2,4-D, or paraquat (Gramoxone Inteon), to emerged winter annual, biennial, and perennial weeds while they are still relatively small or in the rosette stage;

and (3) use a combination of strategies 1 and 2. The goal of all of these strategies is to reduce the amount of total vegetation that needs to be dealt with in the spring prior to planting, possibly even eliminating the need for a burndown herbicide application. While these approaches sound good in theory, the actual end results may or may not be as good as expected. Several factors, such as herbicide selection, application rate, weather conditions, and time of planting, ultimately determine how well this system works.

Fall herbicide treatments can be an extremely effective tool in managing winter annual, biennial, and simple perennial weeds. So how do you know if fall herbicide applications are suitable for your farming operation? These applications are most effective on fields where these weeds have been a problem in the past. If spring herbicide treatments have been effectively controlling these species and they do not appear to be increasing, fall herbicide applications may provide little or no benefit in these fields. It is also important to note that, even though winter annual weeds may be controlled by fall applications, under certain conditions a spring burndown treatment may still be needed. Herbicides that can be applied in the fall for winter annual weed control are identified in Tables 1 and 3 (see the "Application timings" section in these tables).

RECOMMENDED WEB RESOURCES

<http://www.cdms.net>

This is an excellent index of chemical companies involved in agriculture that is searchable by product (trade name). It contains links to the companies' Web sites and is a good resource for obtaining current product label recommendations.

<http://www.greenbook.net>

This Web site contains extensive information on pesticides, including current pesticide labels and material safety data sheets.

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Contributions of other weed scientists and staff of the University of Illinois and at other institutions, as well as the input of industry weed scientists, are gratefully acknowledged.

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Table 1. Corn herbicides (Read and follow label directions before using product.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
2,4-D Amine (many trade names)	3.8 lb a.e. (many)	1 to 2 pt	PP: Apply from 7 to 14 days before planting.	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 9, 10, 14, and 25). • PP and PRE applications are to control existing vegetation prior to corn emergence. • Registered for use on field and sweet corn. • <i>Do not</i> apply PP or PRE on light, sandy soils. • <i>Do not</i> spray corn from tassel to dough stage. • Corn is brittle 1 to 2 weeks following application and may be susceptible to breakage from wind or cultivation. • Corn hybrids differ in their sensitivity to 2,4-D. • <i>Do not</i> forage for feed fodder for 7 days after application. • Spray particles can drift and cause injury to susceptible plants.
		2 to 3 pt	PRE: Apply from 3 to 5 days after planting but before corn emerges.	
		0.5 to 1.0 pt	POST: Apply to corn up to 8 in. tall.	
		1 to 1.5 pt	POST-directed: Apply to corn more than 8 in. tall.	
2,4-D Ester (many trade names)	3.8 lb a.e. (many)	1 to 2 pt	PP: Apply from 7 to 14 days before planting.	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 9, 10, 14, and 25). • Registered for use on field corn. • Use 0.75 pt/A for control of perennial weeds. • 2,4-D ester can volatilize if temperatures exceed 85°F. • <i>See "Remarks and limitations" for 2,4-D Amine.</i>
		2 to 4 pt	PRE: Apply from 3 to 5 days after planting but before corn emerges.	
		0.5 to 0.75 pt	POST: Apply to corn up to 8 in. tall.	
		0.5 to 0.75 pt	POST-directed: Apply to corn more than 8 in. tall.	
		1 to 2 pt	Preharvest: Apply after dent stage.	
AAtrex, Atrazine atrazine	4L 90DF	0.5 to 2.0 lb a.i.	<p>EPP: Apply up to 45 days before planting except on coarse-textured soils.</p> <p>PPI: Apply up to 14 days before planting.</p> <p>PRE: Apply before crop and weeds emerge.</p> <p>POST: Apply to corn up to 12 in. tall.</p>	<ul style="list-style-type: none"> • Controls annual broadleaf and certain grass weeds (Table 14). • Atrazine is a restricted use pesticide (RUP). • <i>Do not</i> apply more than 2.5 lb a.i. atrazine/A in a calendar year. • <i>Do not</i> apply more than 1.6 lb a.i. atrazine/A/application on highly erodible soils with less than 30% residue cover. • <i>Do not</i> apply more than 2.0 lb a.i. atrazine/A/application on soils that are not highly erodible or on highly erodible soils with at least 30% residue cover.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
AAtrex, Atrazine (cont.)				<ul style="list-style-type: none"> • Risk of carryover is greater on soils with pH greater than 7.2. • POST applications should include a COC.
Accent nicosulfuron	75WDG	0.33 to 1.33 oz	<p>POST: Apply to field corn up to 20 in. tall or through the V6 stage, whichever is more restrictive.</p> <p>POST-directed: Apply to field corn from 20 to 36 in. tall or before the V10 stage, whichever is more restrictive.</p>	<ul style="list-style-type: none"> • Controls grass weed species (Table 12). • Registered for use on field corn, field corn grown for seed, popcorn, and sweet corn. • See Table 16 for compatibility with soil insecticides. • Must include a COC or an NIS; the addition of a nitrogen source is required. • <i>Do not</i> apply more than 1.33 oz/A of Accent per year. • <i>Do not</i> tank-mix with Basagran, Laddok, or 2,4-D. • Accent will not control ALS-resistant weed species.
Aim carfentrazone	1.9EW	0.5 to 1.0 fl oz	<p>Preplant Burndown: Apply prior to planting or within 24 hours after planting.</p> <p>POST: Apply to corn up to the V8 stage.</p> <p>POST-directed: Apply to corn from the V8 to V14 stage.</p>	<ul style="list-style-type: none"> • Controls some annual broadleaf weeds (Table 14). • Registered for use on field corn, seed corn, popcorn, corn silage, and sweet corn. • For broad-spectrum weed control, Aim will need to be tank-mixed. • Must include an NIS; under dry conditions, a COC can be used. • The use of a COC will increase corn leaf burn and speckling. • <i>Do not</i> apply when air temperatures are abnormally cool, humidity is high, or corn foliage is wet from dew, rainfall, or irrigation.
Autumn iodosulfuron	10WDG	0.3 oz	<p>Fall: Apply after fall harvest but before the ground freezes.</p> <p>EPP: Apply at least 30 days before planting corn.</p>	<ul style="list-style-type: none"> • Controls certain winter annual broadleaf weeds (Table 9). • Applications require additions of a COC and a nitrogen fertilizer (UAN or AMS). • Autumn will not provide season-long control of annual grass and broadleaf weed species. • <i>Do not</i> use prior to planting sweet corn, popcorn, or corn grown for seed. • <i>Do not</i> apply more than 0.3 oz (0.001875 lb a.i.) per acre per year.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.
COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Balance PRO isoxaflutole	4SC	1.5 to 4.5 fl oz	EPP: Apply 30 days prior to planting with a planned POST program; otherwise, apply 21 days prior to planting. PPI: Apply 30 days prior to planting with a planned POST program; otherwise, apply 21 days prior to planting. PRE: Apply prior to crop emergence.	<ul style="list-style-type: none"> • Controls annual broadleaf and grass weeds (Tables 12 and 14). • Registered for use on field corn. • Balance PRO is a restricted use pesticide (RUP). • <i>Read and observe</i> all environmental precautions. • Adjust rates according to soil texture and organic matter. • <i>Do not</i> apply to emerged corn. • <i>Do not</i> apply to very sandy soils. • Corn hybrids vary in their tolerance to Balance PRO. • Balance PRO may be tank-mixed with several herbicides to increase grass control. • Plant corn at least 1.5 inches deep and completely cover seed with soil.
Banvel dicamba	4L	0.5 to 1 pt 1 pt 0.5 to 1 pt 0.5 pt 0.5 pt	Preplant Burndown: Apply to actively growing weeds. PRE: Apply prior to crop emergence. EPOST: Apply to corn from spike up to 8 in. tall or the 5-leaf stage, whichever is more restrictive. LPOST: Apply to corn from 8 to 36 in. tall, or 15 days prior to tassel emergence. POST-directed: Apply when corn leaves prevent coverage, when sensitive crops are nearby, or when mixing with 2,4-D.	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 9, 10, 14, and 25). • Registered for use on field corn, seed corn, popcorn, and silage corn. • <i>Do not</i> apply to seed corn or popcorn without verifying with a local seed company. • <i>Do not</i> allow contact with corn seed. • <i>Do not</i> apply more than 1.5 pt/A of Banvel per year. • Corn may be harvested or grazed for feed once it has reached the milk stage. • <i>Do not</i> apply Banvel when soybeans are growing nearby if corn is more than 24 in. tall, soybeans are more than 10 in. tall, or soybeans have begun to bloom. • <i>Do not</i> apply in areas where desirable legumes or broadleaf crops are present. • <i>Do not</i> apply PRE on coarse-textured soils.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Basagran bentazon	4S	1 to 2 pt	POST: Apply to actively growing weeds within the size limits listed on the label.	<ul style="list-style-type: none"> • Controls broadleaf weeds and sedges (Table 14). • Registered for use on field corn, sweet corn, popcorn, and corn grown for seed or silage. • <i>Do not</i> graze treated corn for at least 12 days after application. • <i>Do not</i> apply more than 4 pt/A of Basagran per year. • <i>Do not</i> apply to corn that is injured or under stress. • Include a COC and/or a spray-grade nitrogen source.
Basis 50% rimsulfuron + 25% thifensulfuron	75WDG	0.33 to 0.5 oz 0.5 to 1 oz 0.33 to 1 oz 0.33 oz	<p>Fall Burndown: Apply after harvest but before the ground freezes.</p> <p>EPP: Apply up to 30 days before planting.</p> <p>PRE: Apply after planting but before corn emerges.</p> <p>EPOST: Apply to corn from spike through the V2 stage.</p>	<ul style="list-style-type: none"> • Controls certain grass and broadleaf weeds (Tables 12 and 14). • <i>Do not</i> apply to popcorn, sweet corn, or field corn grown for seed. • <i>Do not</i> apply more than 1 oz/A of Basis in a 12-month period. • If using more than 0.62 oz/A of Basis, <i>do not</i> follow with POST applications of Steadfast or Steadfast ATZ. • See Table 16 for compatibility with soil insecticides. • <i>Do not</i> tank-mix with Basagran, Laddok, Beacon, or other ALS-inhibiting herbicides (unless on label). • Applications must include a COC or an NIS with an ammonium fertilizer. • Basis will not control ALS-resistant weed species.
Beacon primisulfuron	75WDG	0.76 oz	<p>POST: Apply to corn from 4 to 20 in. tall.</p> <p>POST-directed: Drop nozzles may be used on corn from 20 in. tall until tassel emergence.</p>	<ul style="list-style-type: none"> • Controls annual broadleaf and certain grass weeds (Tables 12 and 14). • <i>Do not</i> apply to sweet corn or ornamental corn. • See Table 16 for compatibility with soil insecticides. • <i>Do not</i> graze or feed forage from treated areas within 30 days following application. • <i>Do not</i> harvest for silage within 45 days after application. • <i>Do not</i> harvest for grain within 60 days after application. • Apply with a COC or an NIS. • Beacon will not control ALS-resistant weed species.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Bicep II Magnum 2.4 lb S-metolachlor + 3.1 lb atrazine	5.5L	1.3 to 2.6 qt	EPP: Apply up to 45 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply to the surface at planting, before crop and weeds emerge. EPOST: Apply to corn up to 5 in. tall. POST-directed: Apply POST to corn up to 12 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and broadleaf weeds (Tables 12 and 14). • Bicep II Magnum is a restricted use pesticide (RUP). • Registered for use on all types of corn. • This product contains atrazine; follow the use limitations listed under atrazine. • This product contains S-metolachlor; follow the use limitations listed under Dual II Magnum. • <i>Do not</i> graze or feed forage from treated areas within 60 days after application. • Adjust rates according to soil texture, organic matter, and application timing.
Bicep Lite II Magnum 3.33 lb S-metolachlor + 2.67 lb atrazine	6L	0.9 to 2.2 qt	PP: Apply up to 45 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply to the surface at planting, before crop and weeds emerge. EPOST: Apply to corn up to 5 in. tall. POST-directed: Apply POST to corn up to 12 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and broadleaf weeds (Tables 12 and 14). • Bicep Lite II Magnum is a restricted use pesticide (RUP). • Bicep Lite II Magnum contains less atrazine than Bicep II Magnum. • See "Remarks and limitations" for Bicep II Magnum.
Breakfree acetochlor	6.4EC	1.5 to 3.75 pt	See Surpass application timings.	<ul style="list-style-type: none"> • Breakfree contains the same active ingredient as Surpass; see "Remarks and limitations" for Surpass.
Breakfree ATZ 3 lb acetochlor + 2.25 lb atrazine	5.25L	2.2 to 3.4 qt	See Keystone application timings.	<ul style="list-style-type: none"> • Breakfree ATZ contains the same active ingredients as Keystone; see "Remarks and limitations" for Keystone.
Breakfree ATZ Lite 4 lb acetochlor + 1.5 lb atrazine	5.5L	1.6 to 3 qt	See Keystone LA application timings.	<ul style="list-style-type: none"> • Breakfree ATZ Lite contains the same active ingredients as Keystone LA; see "Remarks and limitations" for Keystone LA.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.
COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Buctril bromoxynil	2EC	1 to 1.5 pt	PRE: Apply from before planting until just prior to corn emergence to control existing vegetation.	<ul style="list-style-type: none"> • Controls certain annual broadleaf weeds (Table 14). • Registered for use on field corn and popcorn. • <i>Do not</i> harvest for feed or fodder and <i>do not</i> graze within 45 days after application. • <i>Do not</i> exceed 2 pt/A of Buctril per season. • <i>Do not</i> apply to corn before the 4-leaf stage if using rates greater than 1 pt/A. • Use of an adjuvant or liquid fertilizer may cause excessive leaf burn.
		1 to 2 pt	POST: Apply after corn emergence but before tassel emergence.	
Buctril + atrazine 1.0 lb bromoxynil + 2.0 lb atrazine	3L	1.5 to 3 pt	PRE: Apply from before planting until just prior to corn emergence to control existing vegetation.	<ul style="list-style-type: none"> • Controls certain annual broadleaf weeds (Table 14). • Buctril + atrazine is a restricted use pesticide (RUP). • Registered for use on field corn and popcorn. • <i>Do not</i> harvest for feed or fodder and <i>do not</i> graze within 45 days after application. • <i>Do not</i> exceed 4 pt/A of Buctril + atrazine per season. • <i>Do not</i> apply to corn before the 4-leaf stage if using rates greater than 2 pt/A. • This product contains atrazine; follow the use limitations listed under atrazine. • Use of an adjuvant or liquid fertilizer may cause excessive leaf burn.
		1.5 to 3 pt	POST: Apply after corn emergence but before corn is 12 in. tall.	
Bullet 2.5 lb alachlor + 1.5 lb atrazine	4ME	2.5 to 4.5 qt	<p>EPP: Apply up to 45 days before planting.</p> <p>PPI: Apply up to 7 days before planting.</p> <p>PRE: Apply after planting but before crop and weeds emerge.</p> <p>EPOST: Apply to corn up to 5 in. tall.</p>	<ul style="list-style-type: none"> • Controls annual grass and broadleaf weeds (Tables 12 and 14). • Bullet is a restricted use pesticide (RUP). • Registered for use on all types of corn. • This product contains atrazine; follow the use limitations listed under atrazine. • <i>Do not</i> make more than two applications of Bullet per year or exceed 6.4 qt/A of Bullet per year. • <i>Do not</i> harvest for feed or fodder and <i>do not</i> graze within 60 days after application. • Adjust rates according to soil texture and organic matter.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Callisto mesotrione	4SC	6 to 7.7 fl oz 3 fl oz	PRE: Apply before crop and weeds emerge. POST: Apply to corn up to 30 in. tall or the 8-leaf stage, whichever is more restrictive.	<ul style="list-style-type: none"> • PRE and POST control of annual broadleaf weeds (Table 14), and POST control of large crabgrass less than 2 in. tall (Table 12). • Registered for use on field corn, production seed corn, silage corn, yellow popcorn, and sweet corn. • Tank-mixing atrazine with Callisto may improve weed control. • POST applications must include a COC and a spray-grade nitrogen source. • <i>Do not</i> apply more than 7.7 fl oz/A of Callisto per season. • <i>Do not</i> apply POST to ground treated with Lexar, Lumax, or Camix in the same season. • <i>Do not</i> apply POST tank-mixed with emulsifiable-concentrate grass herbicides. • Severe corn injury may result if an organophosphate or carbamate insecticide is applied within 7 days before or after a Callisto application.
Celebrity Plus 10.6% nicosulfuron + 17% diflufenzopyr + 42.4% dicamba	70DF	4.7 oz	POST: Apply to corn from 4 to 20 in. tall or the V6 stage, whichever is more restrictive. POST-directed: Drop nozzles may be used on corn from 20 to 24 in. tall.	<ul style="list-style-type: none"> • Controls grass and broadleaf weeds (Tables 12, 14, and 25). • Registered for use on field corn. • <i>Do not</i> make more than two applications of Celebrity Plus per year or apply more than 9.4 oz/A of Celebrity Plus per year. • <i>Do not</i> make sequential applications of Banvel, Clarity, Distinct, or Marksman herbicide within 15 days of an application of Celebrity Plus. • <i>Do not</i> exceed 0.67 oz/A of nicosulfuron per application or 1 oz/A per season. • <i>Do not</i> exceed 0.5 lb a.i./A of dicamba per application or 0.75 lb a.i./A/season. • <i>Do not</i> apply within 32 days of forage harvest or 72 days of corn grain or stover harvest. • <i>Do not</i> apply in areas where desirable legumes or broadleaf crops are present. • Apply with an NIS and an ammonium nitrogen fertilizer.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Clarity dicamba	4L	0.5 to 1 pt	Preplant Burndown: Apply to actively growing weeds. PRE: Apply prior to crop emergence. EPOST: Apply to corn from emergence up to 8 in. tall or the 5-leaf stage, whichever is more restrictive. LPOST: Apply to corn from 8 to 36 in. tall, or 15 days prior to tassel emergence. POST-directed: Apply when corn leaves prevent coverage, when sensitive crops are nearby, or when mixing with 2,4-D.	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 9, 10, 14, and 25). • Registered for use on field corn, seed corn, popcorn, and silage corn. • <i>Do not</i> apply to seed corn or popcorn without verifying tolerance with a local seed company. • <i>Do not</i> allow contact with corn seed. • <i>Do not</i> apply PRE on coarse-textured soils. • <i>Do not</i> make more than two applications of Clarity in a growing season. • Corn may be harvested or grazed for feed once it has reached the milk stage. • Avoid using COCs after crop emergence. Use COCs only in dry conditions or when corn is less than 5 in. tall. • <i>Do not</i> apply Clarity when soybeans are growing nearby if corn is more than 24 in. tall, soybeans are more than 10 in. tall, or soybeans have begun to bloom. • <i>Do not</i> apply in areas where desirable legumes or broadleaf crops are present.
		1 pt		
		0.5 to 1 pt		
		0.5 pt		
Define flufenacet	4SC	15 to 25 fl oz	<p>Fall: Apply north of Illinois Route 136 after October 15.</p> <p>EPP: Apply up to 45 days before planting.</p> <p>PPI: Apply up to 14 days before planting.</p> <p>PRE: Apply after planting but before crop and weeds emerge.</p> <p>POST: Apply from emergence through the fifth leaf collar.</p>	<ul style="list-style-type: none"> • Controls annual grass weeds (Table 12). • <i>Do not</i> use on popcorn or sweet corn. • <i>Do not</i> apply more than 25 oz/A of Define per season. • Plant corn at least 1.5 in. deep. • Adjust rates according to soil texture, organic matter, and application timing. • <i>Do not</i> harvest corn forage within 75 days after a POST application. • <i>Will not control emerged weeds.</i>
Degree acetochlor	3.8CS	2.25 to 5.5 pt	<p>EPP: Apply up to 45 days before planting.</p> <p>PPI: Apply up to 14 days before planting.</p> <p>(continues)</p>	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and certain small-seeded broadleaf weeds (Table 12). • Degree is a restricted use pesticide (RUP).

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.
COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Degree (cont.)			<p>PRE: Apply to the surface at planting, before crop and weeds emerge, and within 5 days after the last preplant tillage operation.</p> <p>POST: Apply to corn up to 11 in. tall.</p>	<ul style="list-style-type: none"> • Registered for use on field corn, production seed corn, silage corn, and popcorn. • <i>Read and observe</i> all environmental precautions. • Adjust rates according to soil texture, organic matter, and application timing. • <i>Will not control emerged weeds.</i>
Degree Xtra 2.7 lb acetochlor + 1.34 lb atrazine	4.04CS	2.9 to 4.3 qt	<p>EPP: Apply up to 45 days before planting.</p> <p>PPI: Apply up to 14 days before planting.</p> <p>PRE: Apply to the surface at planting, before crop and weeds emerge, and within 5 days after the last preplant tillage operation.</p> <p>POST: Apply to corn up to 11 in. tall.</p>	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and broadleaf weeds (Tables 12 and 14). • Degree Xtra is a restricted use pesticide (RUP). • Registered for use on field corn, production seed corn, silage corn, and popcorn. • <i>Read and observe</i> all environmental precautions. • This product contains atrazine; follow the use limitations listed under atrazine. • Adjust rates according to soil texture, organic matter, and application timing. • <i>Do not</i> graze or feed forage from treated areas within 60 days after application.
Distinct 20% diflufenzopyr + 50% dicamba	70WDG	6 oz 4 oz 4 oz	<p>EPOST: Apply to corn from 4 to 10 in. tall.</p> <p>POST: Apply to corn from 10 to 24 in. tall.</p> <p>POST-directed: Apply to corn 24 to 36 in. tall.</p>	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 14 and 25). • Registered for use on field corn, silage corn, and popcorn. • Distinct should be used sequentially or tank-mixed with a grass herbicide for a complete weed control program. • POST applications must include an NIS and a spray-grade nitrogen source. • <i>Do not</i> apply more than 10 oz/A of Distinct per year. • Allow a minimum of 15 days between sequential applications of Distinct. • <i>Do not</i> plant any crops except corn within 30 days after application; corn can be replanted 7 or more days after application. • <i>Do not</i> use a COC/MSO with Distinct unless specified for certain tank mixes.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Dual II Magnum S-metolachlor	7.64EC	1 to 2 pt	Fall: Apply north of Illinois Route 136 after October 31. EPP: Apply up to 45 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply before crop and weeds emerge. POST: May be applied to corn up to 40 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and certain small-seeded broadleaf weeds (Table 12). • Registered for use on all types of corn. • <i>Do not</i> apply more than 3.9 pt/A of Dual II Magnum per season. • <i>Do not</i> graze or feed treated forage for 30 days after application. • Adjust rates according to soil texture, organic matter, and application timing. • <i>Will not control emerged weeds.</i>
Equip 30% foramsulfuron + 2% iodosulfuron	32WDG	1.5 oz	POST: Apply when corn is in the V1 through V4 stage. POST-directed: Use drop nozzles when corn is greater than V4 and less than V8.	<ul style="list-style-type: none"> • Controls grasses and certain broadleaf weed species (Tables 12 and 14). • Registered for use on field corn; not recommended for use on corn grown for seed. • See Table 16 for compatibility with soil insecticides. • Certain hybrids are sensitive to Equip. • <i>Do not</i> apply to corn exhibiting injury from previous herbicide applications. • <i>Do not</i> make more than one application or exceed 1.5 oz/A of Equip per season. • Must include an MSO or ESO in combination with a nitrogen fertilizer. • <i>Do not</i> apply within 70 days of harvesting corn grain or 45 days of harvesting corn forage. • <i>Do not</i> graze within 45 days of application. • Equip will not control ALS-resistant weed species.
Expert 1.74 lb S-metolachlor + 2.14 lb atrazine + 0.74 lb a.e. glyphosate	4.88SC	2.5 to 3.75 qt	EPP: Apply up to 30 days before planting. PRE: Apply before crop emergence. POST: Apply only to glyphosate-resistant hybrids up to 12 in. tall.	<ul style="list-style-type: none"> • Controls annual and perennial grasses and broadleaves. • Registered for use in field corn, popcorn, and sweet corn. • <i>Do not</i> graze or feed forage from treated areas for 60 days following application. • This product contains atrazine; follow the use limitations listed under atrazine. • Expert is a restricted use pesticide (RUP).

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.
COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Express SG tribenuron	50SG	0.25 to 0.5 oz	EPP: Apply at least 14 days before planting corn.	<ul style="list-style-type: none"> • Controls certain emerged winter annual broadleaf weed species. • Applications require the addition of a spray additive such as an NIS or a COC. • Tank-mixing with a broad-spectrum herbicide will expand burndown efficacy; select spray additives based on the additive limitations of the companion product. • <i>Do not</i> apply after corn planting.
FieldMaster 2.0 lb acetochlor + 1.5 lb atrazine + 0.56 lb a.e. glyphosate	4.06L	3.5 to 5 qt	PRE: Apply before crop emergence. POST: Apply only to glyphosate-resistant hybrids up to 11 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, broadleaf weeds, and existing vegetation (Tables 9, 12, and 14). • Registered for use in field corn, production seed corn, silage corn, and popcorn. • FieldMaster is a restricted use pesticide (RUP). • <i>Read and observe</i> all environmental precautions. • This product contains atrazine; follow the use limitations listed under atrazine. • <i>Do not</i> feed forage or graze treated areas within 60 days after application.
FulTime 2.4 lb acetochlor + 1.6 lb atrazine	4CS	2.5 to 5 qt	EPP: Apply up to 40 days before planting on medium- and fine-textured soils, or up to 14 days before planting on coarse-textured soils. PPI: Apply up to 14 days before planting. PRE: Apply after planting, before crop and weeds emerge. POST: Apply to corn up to 11 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and broadleaf weeds (Tables 12 and 14). • FulTime is a restricted use pesticide (RUP). • Registered for use on field corn, production seed corn, silage corn, popcorn, and sweet corn. • <i>Read and observe</i> all environmental precautions. • This product contains atrazine; follow the use limitations listed under atrazine. • Adjust rates according to soil texture, organic matter, and application timing.
glyphosate (many trade names) (See Table 8.)	Various formulations	See Table 8 for product rates.	EPP Burndown: Apply before planting to control existing vegetation.	<ul style="list-style-type: none"> • POST applications: <i>Use only on glyphosate-resistant corn hybrids.</i> • Controls grass and broadleaf weed species (Tables 9, 10, 12, 14, and 25).

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late postemergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
glyphosate (cont.)			<p>PRE Burndown: Apply after planting but before corn emerges to control existing vegetation.</p> <p>POST: Apply to <i>glyphosate-resistant</i> corn from emergence through the V8 stage or until corn reaches 30 in. tall, whichever is more restrictive.</p> <p>POST-directed: Apply to glyphosate-resistant corn from 30 to 48 in. tall.</p>	<ul style="list-style-type: none"> • Application rates vary with weed size, application timing, and formulation. • Table 8 contains a list of glyphosate formulations. • Check individual labels for restrictions. • POST-directed applications in glyphosate-resistant hybrids: labeled only for certain hybrids.
Gramoxone Inteon paraquat	2S	2.0 to 4.0 pt	<p>EPP Burndown: Apply before planting to control existing vegetation.</p> <p>PRE Burndown: Apply after planting but before corn emergence to control existing vegetation.</p> <p>POST-directed: Apply when corn is at least 10 in. tall.</p> <p>Preharvest: Apply at least 7 days prior to harvest.</p>	<ul style="list-style-type: none"> • Controls existing vegetation (Tables 9 and 10). • Gramoxone Inteon is a restricted use pesticide (RUP). • <i>Do not</i> apply broadcast after crop emergence. • <i>Do not</i> use around gardens, schools, recreational parks, or playgrounds. • Always add an NIS or a COC to the spray mixture. • Adjust rates according to weed sizes. • <i>Preharvest:</i> Apply after black layer has formed at the base of the corn kernels and at least 7 days prior to harvest. • Use an NIS with preharvest applications.
Guardsman Max 1.7 lb dimethenamid-P + 3.3 lb atrazine	5L	2.5 to 4.6 pt	<p>EPP: Apply up to 45 days before planting.</p> <p>PPI: Apply up to 2 weeks before planting.</p> <p>PRE: Apply before crop and weeds emerge.</p> <p>POST: Apply to corn up to 12 in. tall.</p>	<ul style="list-style-type: none"> • Controls annual grass and broadleaf weeds (Tables 12 and 14). • Registered for use on field corn, seed corn, sweet corn, and popcorn. • Guardsman Max is a restricted use pesticide (RUP). • Split applications of Guardsman Max are recommended if applied more than 30 days EPP. • An NIS or a COC may be used with POST-applied Guardsman Max. • This product contains atrazine; follow the use limitations listed under atrazine. • <i>Do not</i> graze or feed field corn forage within 60 days after application.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
G-Max Lite 2.25 lb dimethenamid-P + 2.75 lb atrazine	5L	2.0 to 3.5 pt	EPP: Apply up to 45 days before planting. PPI: Apply up to 2 weeks before planting. PRE: Apply before crop and weeds emerge. POST: Apply to corn up to 12 in. tall.	<ul style="list-style-type: none"> • Adjust rates according to soil texture, organic matter, and cation-exchange capacity. • Controls annual grass and broadleaf weeds (Tables 12 and 14). • Registered for use on field corn, seed corn, sweet corn, and popcorn. • G-Max Lite is a restricted use pesticide (RUP). • G-Max Lite contains less atrazine than Guardsman Max. • See "Remarks and limitations" for Guardsman Max.
Halex GT 2.09 lb S-metolachlor + 2.09 lb glyphosate + 0.209 lb mesotrione	4.38CS	3.6 to 4.0 pt	POST: Apply to glyphosate-resistant corn from emergence to 30 inches tall or the 8-leaf stage.	<ul style="list-style-type: none"> • Controls grass and broadleaf weed species (Tables 12 and 14). • Apply only to corn hybrids resistant to glyphosate. • For optimal results, apply before grass and broadleaf weeds exceed 4 in. tall. • Applications must include an NIS and an AMS. • Do not tank-mix with emulsifiable concentrate grass herbicides or organophosphate or carbamate insecticides. • Do not apply to ground that has been or will be treated in the same season with Callisto.
Harmony GT XP thifensulfuron	75DF	0.083 oz	POST: Apply to corn up to 16 in. tall or through the V5 stage, whichever is more restrictive.	<ul style="list-style-type: none"> • Controls some annual broadleaf weeds. • Do not apply to fields treated with Counter insecticide. • Applications must include an NIS or a COC in addition to an ammonium nitrogen fertilizer. • Do not apply to sweet corn, popcorn, or field corn grown for seed.
Harmony SG thifensulfuron	50DF	0.125 oz		
Harmony Extra XP 50% thifensulfuron + 25% tribenuron	75DF	0.3 to 0.6 oz	EPP: Apply at least 14 days before planting corn.	<ul style="list-style-type: none"> • Controls certain emerged winter annual broadleaf weed species. • Tank-mixing with a broad-spectrum herbicide expands burndown efficacy; select spray additive limitations of the companion product. • Do not apply after corn planting.
Harmony Extra SG 33.33% thifensulfuron + 16.67% tribenuron	50SG	0.45 to 0.9 oz		

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Harness acetochlor	7EC	1.25 to 2.75 pt	EPP: Apply up to 45 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply to the surface at planting, before crop and weeds emerge, and within 5 days after the last preplant tillage operation. POST: Apply to corn up to 11 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and certain small-seeded broadleaf weeds (Table 12). • Harness is a restricted use pesticide (RUP). • Registered for use on field corn, production seed corn, silage corn, and popcorn. • <i>Read</i> and <i>observe</i> all environmental precautions. • Adjust rates according to soil texture and organic matter. • <i>Will not control emerged weeds.</i>
Harness Xtra 5.6L 3.1 lb acetochlor + 2.5 lb atrazine	5.6L	1.4 to 3 qt	EPP: Apply up to 45 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply to the surface at planting, before crop and weeds emerge, and within 5 days after the last preplant tillage operation. POST: Apply to corn up to 11 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and broadleaf weeds (Tables 12 and 14). • Harness Xtra 5.6L is a restricted use pesticide (RUP). • Registered for use on field corn, production seed corn, silage corn, and popcorn. • <i>Read</i> and <i>observe</i> all environmental precautions. • This product contains atrazine; follow the use limitations listed under atrazine. • Adjust rates according to soil texture and organic matter. • <i>Do not</i> feed forage or graze treated areas within 60 days after application.
Harness Xtra 4.3 lb acetochlor + 1.7 lb atrazine	6L	1.8 to 2.3 qt	EPP: Apply up to 45 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply to the surface at planting, before crop and weeds emerge, and within 5 days after the last preplant tillage operation. POST: Apply to corn up to 11 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and broadleaf weeds (Tables 12 and 14). • Harness Xtra is a restricted use pesticide (RUP). • Registered for use on field corn, production seed corn, silage corn, and popcorn. • <i>Read</i> and <i>observe</i> all environmental precautions. • Harness Xtra 6L contains less atrazine than Harness Xtra 5.6L. • This product contains atrazine; follow the use limitations listed under atrazine. • Adjust rates according to soil texture and organic matter. • <i>Do not</i> feed forage or graze treated areas within 60 days after application.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Hornet WDG 18.5% flumetsulam + 50% a.e. clopyralid	68.5WDG	4 to 5 oz	EPP: Apply up to 30 days before planting.	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 14). • Registered for use on field corn. • Soil applications: Corn should be planted at least 1.5 in. deep. • Soil applications: <i>Do not</i> apply to areas with soil pH greater than 7.8. • Soil applications: <i>Do not</i> apply to peat or muck soils or to soil with more than 5% organic matter and pH below 5.9. • Soil applications: Use of Hornet on soils with less than 1.5% organic matter may result in unacceptable injury. • Soil applications: See Table 16 for compatibility with soil insecticides. • <i>Do not</i> exceed 6 oz/A of Hornet WDG per season. • <i>Do not</i> harvest field corn within 85 days after application. • Adjust application rates according to soil texture and organic matter (soil-applied) and weed size (POST). • POST applications: All applications must include an NIS, a COC, or an MSO; under dry conditions, add an ammonium nitrogen fertilizer. • POST applications: <i>Do not</i> tank-mix with Laddok or Lightning due to risk of crop injury.
		4 to 5 oz	PPI: Apply up to 30 days before planting.	
		4 to 5 oz	PRE: Apply at or just after planting but before crop and weeds emerge.	
		4 to 5 oz	SPIKE: Apply to corn from emergence until 2 in. tall and before the first leaf is unfurled.	
		2 to 5 oz	POST: Apply to corn from spike until 20 in. tall or the V6 stage, whichever is more restrictive. POST-directed: Apply to corn up to 36 in. tall.	
Impact topramezone	2.8SC	0.75 fl oz	POST: Apply up to 45 days before harvest.	<ul style="list-style-type: none"> • Controls annual grasses and broadleaf weeds (Tables 12 and 14). • Can be applied to field corn, seed corn, popcorn, and sweet corn. • Tank-mixing atrazine with Impact is recommended for improved weed control. • Applications must include either an MSO or a COC with an ammonium fertilizer. • <i>Do not</i> exceed 0.75 fl oz per acre per season. • A reduced rate of 0.5 fl oz may be applied north of Interstate 80. • Impact may be applied sequentially with mesotrione-containing products only where corn will be planted the following season.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.
COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Keystone 3.0 lb acetochlor + 2.25 lb atrazine	5.25L	2.2 to 3.4 qt	EPP: Apply up to 30 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply before crop and weeds emerge. POST: Apply to corn up to 11 in. tall.	Controls sedges, annual grasses and broadleaf weeds (Tables 12 and 14). <ul style="list-style-type: none"> • Registered for use on field corn, production seed corn, silage corn, popcorn, and sweet corn. • Keystone is a restricted use pesticide (RUP). • Keystone may be tank-mixed with a number of herbicides to improve control of certain weed species. • This product contains atrazine; follow the use limitations listed under atrazine. • <i>Do not</i> apply POST using nitrogen as a carrier. • <i>Do not</i> feed forage or graze treated areas within 60 days after application.
Keystone LA 4.0 lb acetochlor + 1.5 lb atrazine	5.5 L	1.6 to 3 qt	EPP: Apply up to 30 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply before crop and weeds emerge. POST: Apply to corn up to 11 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses and broadleaf weeds (Tables 12 and 14). • Registered for use on field corn, production seed corn, silage corn, popcorn, and sweet corn. • Keystone LA is a restricted use product (RUP). • Keystone LA contains less atrazine than Keystone. • This product contains atrazine; follow the use limitations listed under atrazine. • <i>Do not</i> feed forage or graze treated areas within 60 days after application.
Laddok S-12 2.5 lb bentazon + 2.5 lb atrazine	5L	1.33 to 2.33 pt	POST: Apply to corn up to 12 in. tall.	<ul style="list-style-type: none"> • Controls broadleaf weeds and sedges (Table 14). • Registered for use on field corn, production seed corn, silage corn, sweet corn, and popcorn. • Laddok is a restricted use pesticide (RUP). • <i>Do not</i> make more than one application of Laddok per season. • This product contains atrazine; follow the use limitations listed under atrazine. • An adjuvant is required for consistent weed control.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Lexar 1.74 lb S-metolachlor + 0.224 lb mesotrione + 1.74 lb atrazine	3.7L	2.25 to 3.5 qt	EPP: Apply up to 14 days before planting. PRE: Apply before crop and weeds emerge. POST: Apply to field corn up to 12 in. tall.	<ul style="list-style-type: none"> • Controls annual grasses and broad-leaves. • Registered for use on field corn, production seed corn, silage corn, yellow popcorn, and sweet corn. • Lexar is a restricted use pesticide (RUP). • <i>Do not</i> harvest forage, grain, or stover within 60 days after the last application. • <i>Do not</i> apply other mesotrione-containing products to ground that has been treated with Lexar in the same season. • <i>Do not</i> make a POST application of an organophosphate or carbamate insecticide within 7 days before or after applying Lexar. • This product contains atrazine; follow the use limitations listed under atrazine.
Liberty glufosinate	1.67S	28 to 34 fl oz	POST: Apply to corn up to 24 in. tall or the V7 stage, whichever is more restrictive. POST-directed: Apply to corn from 24 to 36 in. tall.	<ul style="list-style-type: none"> • <i>Use only on Liberty Link hybrids.</i> • Controls annual grass and broadleaf weed species (Tables 12 and 14). • <i>Do not</i> make more than two applications per growing season, or exceed 62 oz/A of Liberty per growing season. • <i>Do not</i> harvest for forage within 60 days of application. • <i>Do not</i> harvest for grain or fodder within 70 days of application. • <i>Do not</i> add any surfactants or crop oils. • Applications must include an AMS fertilizer.
Lightning 52.5% imazethapyr + 17.5% imazapyr	70DG	1.28 oz	POST: Apply to corn up to 20 in. tall or the V6 stage, whichever is more restrictive. POST-directed: Apply to corn from 20 in. tall to 45 days prior to harvest.	<ul style="list-style-type: none"> • <i>Use only on Clearfield hybrids.</i> • Controls grass and broadleaf weed species (Tables 12 and 14). • <i>Do not</i> make more than one application per growing season. • <i>Do not</i> harvest for grain, forage, fodder, or silage within 45 days after application; <i>do not</i> graze within 45 days after application. • See Table 16 for compatibility with soil insecticides. • An NIS or a COC in combination with a nitrogen-based fertilizer must be included. • Lightning will not control ALS-resistant weed species.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Lumax 2.68 lb S-metolachlor + 0.268 lb mesotrione + 1.0 lb atrazine	3.95L	2.0 to 3.0 qt	EPP: Apply up to 14 days before planting. PRE: Apply before crop and weeds emerge. EPOST: Apply before field corn is more than 12 in. tall.	<ul style="list-style-type: none"> • Controls annual grass and broadleaf weeds (Tables 12 and 14). • Registered for use on field corn, production seed corn, silage corn, yellow popcorn, and sweet corn. • Lumax is a restricted use pesticide (RUP). • Additional atrazine may be added to improve control of certain broadleaf weed species. • This product contains atrazine; follow the use limitations listed under atrazine. • <i>Do not</i> apply more than 3 qt/A of Lumax per season. • An NIS may be used with POST-applied Lumax. • <i>Do not</i> harvest forage, grain, or stover within 60 days after application; <i>do not</i> graze or feed forage from treated areas within 45 days after application. • <i>Do not</i> apply other mesotrione-containing products to ground that has been treated with Lumax in the same season. • <i>Do not</i> apply POST tank-mixed with organophosphate or carbamate insecticides. • <i>Do not</i> apply POST using nitrogen as a carrier.
Marksman 1.1 lb dicamba + 2.1 lb atrazine	3.2L	2 to 3.5 pt	PRE: May be applied after planting and prior to corn emergence. EPOST: Apply to corn between emergence and the 5-leaf stage or until corn is 8 in. tall, whichever is more restrictive.	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 14). • Marksman is a restricted use pesticide (RUP). • Registered for use on field corn, production seed corn, silage corn, and popcorn. • <i>Do not</i> harvest treated plants or graze for feed before the ensilage (milk) stage. • <i>Do not</i> make more than two applications per season or exceed 5.25 pt/A of Marksman per season. • <i>Do not</i> apply PRE to coarse-textured soils or to any soils with less than 2.5% organic matter. <p>(continues)</p>

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.
COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Marksman (cont.)				<ul style="list-style-type: none"> • This product contains atrazine; follow the use limitations listed under atrazine. • This product contains dicamba; take precautions to avoid drift onto desirable legumes and broadleaf crops. • Adjust rates according to soil texture and organic matter.
Micro-Tech alachlor	4CS	2 to 3.5 qt	<p>EPP: Apply up to 45 days before planting.</p> <p>PPI: Apply up to 7 days before planting.</p> <p>PRE: Apply to the surface at planting, before crop and weeds emerge, and within 5 days after the last preplant tillage operation.</p> <p>POST: Apply before corn is more than 5 in. tall.</p>	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and certain small-seeded broadleaf weeds (Table 12). • Micro-Tech is a restricted use pesticide (RUP). • Registered for use on all types of corn. • <i>Read and observe</i> all environmental precautions. • <i>Do not</i> exceed a total of 4 qt/A of Micro-Tech per year. • Adjust rates according to soil texture and organic matter. • <i>Will not control emerged weeds.</i>
NorthStar 7.5% primisulfuron + 39.9% dicamba	47.4WDG	5 oz	<p>POST: Apply to corn from 4 to 20 in. tall (from the V2 to V6 stage).</p> <p>POST-directed: Apply to corn from 20 to 36 in. tall.</p>	<ul style="list-style-type: none"> • Controls annual broadleaf and certain grass weeds (Tables 12 and 14). • Registered for use on field corn, seed corn, popcorn, and silage corn. • <i>Do not</i> apply to corn less than 4 in. tall. • See Table 16 for compatibility with soil insecticides. • <i>Do not</i> graze or feed forage from treated areas within 30 days after application. • <i>Do not</i> harvest for silage within 45 days after application. • <i>Do not</i> harvest for grain within 60 days after application. • <i>Do not</i> exceed one application or 5 oz/A of NorthStar per season. • All applications of NorthStar should be made no later than 15 days before tassel emergence. • This product contains dicamba; take precautions to avoid drift onto desirable legumes and broadleaf crops. • Apply with a COC or an NIS and a nitrogen source.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Option foramsulfuron	35WDG	1.5 to 1.75 oz	POST: Apply when corn is in the V1 through V6 growth stage. POST-directed: Apply to corn greater than V6 and less than V8.	<ul style="list-style-type: none"> • Controls grasses and certain broadleaf weed species (Tables 12 and 14). • Registered for use on field corn. Consult seed company before applying on corn grown for seed. • See Table 16 for compatibility with soil insecticides. • Certain hybrids are sensitive to Option. • <i>Do not</i> apply to corn that already exhibits herbicide injury from a previous herbicide application. • <i>Do not</i> apply within 70 days of harvesting corn grain or 45 days of harvesting corn forage. • <i>Do not</i> graze within 45 days of application. • <i>Do not</i> exceed two applications or 3.5 oz/A of Option per season. • Must include an MSO or ESO in combination with a nitrogen fertilizer. • Option will not control ALS-resistant weed species.
Outlook dimethenamid-P	6EC	8 to 21 fl oz	<p>Fall: Apply north of Illinois Route 136 after October 1.</p> <p>EPP: Apply up to 45 days before planting.</p> <p>PPI: Apply up to 2 weeks before planting.</p> <p>PRE: Apply before crop and weeds emerge.</p> <p>POST: May be applied to corn up to 12 in. tall.</p> <p>Layby: Apply to corn from 12 to 36 in. tall.</p>	<ul style="list-style-type: none"> • Controls annual grass and certain small-seeded broadleaf weeds (Table 12). • Registered for use on field corn, popcorn, seed corn, and sweet corn. • <i>Do not</i> apply more than 21 fl oz/A of Outlook per season. • <i>Do not</i> graze or feed forage from treated areas within 40 days after application. • Adjust rates according to soil texture, organic matter, and cation-exchange capacity. • <i>Will not control emerged weeds.</i>

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Permit halosulfuron	75WG	0.67 to 1.33 oz	POST: Can be applied to field corn from spike through layby stage.	<ul style="list-style-type: none"> • Controls sedges and certain annual broadleaf weeds (Tables 12 and 14). • Registered for use on field corn, field corn grown for seed, sweet corn, and popcorn. • <i>Do not</i> exceed two applications or 2.66 oz/A of Permit per season. • <i>Do not</i> harvest for forage or silage within 30 days of application; <i>do not</i> graze within 30 days of application. • An NIS or a COC must be used. • Permit will not control ALS-resistant weed species.
Princep simazine	4L 90WDG	2 to 8 pt 1.1 to 4.4 lb	<p>Fall Burndown: Apply after harvest but before winter annual weeds emerge and the ground freezes.</p> <p>EPP: Apply up to 2 weeks before planting.</p> <p>PRE: Apply before crop and weeds emerge.</p>	<ul style="list-style-type: none"> • Controls annual grass and broadleaf weeds (Tables 12 and 14). • Registered for use on corn. • <i>Do not</i> exceed 2 qt/A of Princep 4L if Princep is used in the fall. • <i>Do not</i> apply more than 8 pt/A or 4.4 lb/A/year. • <i>Do not</i> graze treated areas.
Prowl or Pendimax	3.3EC	1.8 to 4.8 pt	PRE: Apply after planting but before crop and weeds emerge.	<ul style="list-style-type: none"> • Controls annual grasses and certain small-seeded broadleaf weeds (Table 12). • Registered for use on field corn, sweet corn, seed corn, and popcorn. • <i>Do not</i> apply PP or PPI. • Plant corn at least 1.5 in. deep. • Corn seed must be completely covered with soil. • <i>Do not</i> exceed the maximum labeled rate for any soil type. • <i>Do not</i> graze or feed forage from treated areas within 12 to 21 days of application (depends on formulation). • Adjust rates according to soil texture and organic matter. • <i>Will not control emerged weeds.</i>
Prowl H₂O pendimethalin	3.8 CS	2.0 to 4.0 pt	POST: Apply to field corn up to 30 in. tall or the V8 stage, whichever is more restrictive.	

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Pursuit imazethapyr	70DG	1.44 oz	EPP: Apply up to 45 days before planting. PPI: Apply up to 45 days before planting. PRE: Apply before crop and weeds emerge. POST: Apply after crop and weeds emerge.	<ul style="list-style-type: none"> • Use only on <i>Clearfield</i> hybrids. • Controls grass and broadleaf weed species (Tables 19, 21, and 22). • Do not make more than one application per growing season. • Do not harvest for grain, forage, fodder, or silage within 45 days after application; do not graze within 45 days after application. • Check label for compatibility with soil insecticides. • Include an adjuvant and a fertilizer solution for POST applications. • Pursuit will not control ALS-resistant weed species.
Pursuit Plus 0.2 lb imazethapyr + 2.7 lb pendimethalin	2.9EC	2.5 pt	PRE: Apply after planting but before crop and weeds emerge. POST: Apply after crop and weeds emerge.	<ul style="list-style-type: none"> • Use only on <i>Clearfield</i> hybrids. • Controls grass and broadleaf weed species (Tables 19, 21, and 22). • Do not apply PP or PPI. • Plant corn at least 1.5 in. deep. • Corn seed must be completely covered with soil. • Do not harvest for grain, forage, fodder, or silage within 45 days after application; do not graze within 45 days after application. • Check label for compatibility with soil insecticides. • POST applications require an NIS and a fertilizer solution.
Python WDG flumetsulam	80WDG	0.8 to 1.33 oz	EPP: Apply up to 30 days before planting. PPI: Apply up to 30 days before planting. PRE: Apply at or just after planting but prior to weed emergence.	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 14). • Do not apply to sweet corn or popcorn. • Do not exceed 1.4 oz/A of Python WDG per growing season. • An interval of 85 days is required between application of Python WDG and harvest. • Do not apply to soils with pH greater than 7.8. • Do not use Python WDG on soils with less than 1.5% organic matter, or unacceptable injury may occur. • See Table 16 for compatibility with soil insecticides. • Python will not control ALS-resistant weed species.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Radius 3.57 lb flufenacet + 0.43 lb isoxaflutole	4SC	7 to 28 fl oz	EPP: Apply up to 21 days before planting. PPI: Apply up to 21 days before planting. PRE: Apply before crop and weeds emerge.	<ul style="list-style-type: none"> • Controls annual broadleaf and grass weeds (Tables 12 and 14). • <i>Do not</i> use on popcorn, sweet corn, or corn grown for seed. • Radius is a restricted use pesticide (RUP). • <i>Do not</i> make more than one application of Radius per season. • Read and observe all environmental precautions. • Radius has some burndown activity; apply with a COC or an MSO. • <i>Do not</i> apply to very sandy soils. • Adjust rates according to soil texture, organic matter, and application timing.
Resolve rimsulfuron	25WDG	0.5 to 2 oz 0.5 to 2 oz	PRE: Apply before corn emerges. POST: Do not apply to corn taller than 12 in. or exhibiting 6 or more collars.	<ul style="list-style-type: none"> • Controls certain grass and broadleaf weed species. • <i>Do not</i> apply to field corn grown for seed, popcorn, or sweet corn. • Applications must include an NIS or a COC with an ammonium fertilizer. • <i>Do not</i> apply preemergence to coarse-textured soils with less than 1% organic matter. • <i>Do not</i> tank-mix with Basagran, Laddok, or foliar-applied organophosphate insecticides.
Resource flumiclorac	0.86EC	4 to 8 fl oz	POST: Apply to corn between the 2-leaf and 10-leaf stages. POST-directed: Apply after corn has reached sufficient height for the spray to be directed beneath the corn leaves.	<ul style="list-style-type: none"> • Controls velvetleaf and certain other broadleaf weeds (Table 14). • Registered for use on field corn. • <i>Do not</i> apply more than 6 fl oz/A in a single broadcast application or more than a total of 8 fl oz/A of Resource per season. • <i>Do not</i> graze animals on green forage or use as feed until at least 28 days after application. • Applications must include a COC or an MSO; nitrogen fertilizer also can be added.
Sencor metribuzin	75DF	2 to 5.33 oz 2 to 4 oz 2 to 4 oz	EPP: Apply from 10 to 30 days before planting. PRE: Apply from 0 to 9 days before planting. POST: Apply from crop emergence until just prior to tasseling.	<ul style="list-style-type: none"> • Controls certain grasses and broadleaf weeds (Table 21). • Soil applications: <i>Do not</i> apply on coarse-textured soils with less than 1.5% organic matter. • Soil applications: <i>Do not</i> apply more than 4 oz/A of Sencor on soils with less than 2% organic matter. • Soil applications: <i>Do not</i> apply on soils having a pH of 7.0 or greater.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Sencor (cont.)				<ul style="list-style-type: none"> • Soil applications: Sencor can be used on hybrid seed-corn production fields if both inbred parents are known to have tolerance to Sencor. • POST applications: <i>Do not</i> use COCs or any adjuvants containing vegetable or petroleum oils. • POST applications: <i>Do not</i> use on sweet corn, popcorn, white corn, or corn grown for seed. • POST applications: <i>Do not</i> apply when field corn is under stress. • POST applications: <i>Do not</i> use on sand, loamy sand, or sandy loam soils that have less than 0.5% organic matter. • <i>Do not</i> apply more than 5.33 oz/A of Sencor per growing season. • <i>Do not</i> graze or harvest for silage or grain within 28 days after application.
Shotgun 2.25 lb atrazine + 1.0 lb a.e 2,4-D	3.25L	2 to 3 pt	<p>EPP: Apply 7 to 14 days before planting.</p> <p>PRE: Apply 5 to 7 days after planting but before corn emergence.</p> <p>EPOST: Apply to corn from spike to the 4-leaf stage but before corn is 8 in. tall.</p> <p>POST-directed: Apply to corn from 8 to 12 in. tall or the 5-leaf stage, whichever is more restrictive.</p>	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 14). • Shotgun is a restricted use pesticide (RUP). • Registered for use on field corn. • <i>Do not</i> make PP or PRE applications to medium- and fine-textured soils with less than 1% organic matter or to coarse-textured soils with less than 2% organic matter. • <i>Do not</i> make PP or PRE applications unless corn is planted at least 1.5 in. deep. • <i>Do not</i> make POST applications of Shotgun within 3 weeks of PP or PRE applications. • This product contains atrazine; follow the use limitations listed under atrazine. • This product contains 2,4-D; take precautions to avoid drift onto desirable legumes and broadleaf crops. • Adjust rates according to soil texture and organic matter.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Spirit 42.8% primisulfuron + 14.2% prosulfuron	57WDG	1 oz	POST: Apply to corn from 4 to 20 in. tall or the V6 stage, whichever is more restrictive. POST-directed: Drop nozzles may be used on corn from 20 to 24 in. tall.	<ul style="list-style-type: none"> • Controls annual broadleaf and certain grass weeds (Tables 12 and 14). • <i>Do not</i> apply to sweet corn or ornamental corn. • <i>Do not</i> graze or feed forage from treated areas within 30 days after application. • <i>Do not</i> harvest for silage within 40 days after application. • <i>Do not</i> harvest for grain within 60 days after application. • Apply with a COC or an NIS and a nitrogen source. • Spirit will not control ALS-resistant weed species.
Starane fluroxypyr	1.5 EC	0.67 pt	POST: Apply through the V5 growth stage.	<ul style="list-style-type: none"> • Controls certain annual and perennial broadleaf species. • Do not make more than two applications or apply more than 1.33 pt/A/season. • Registered for use in field corn and sweet corn. • <i>Do not</i> graze or harvest forage from treated areas within 47 days of application. • <i>Do not</i> apply less than 90 days before grain harvest.
Status 40% dicamba + 16% diflufenzopyr	56WDG	5 to 10 oz	POST: Apply to corn between 4 and 36 in. tall, or between V2 and V10.	<ul style="list-style-type: none"> • Controls certain annual and perennial broadleaf weeds (Tables 14 and 25). • Registered for use on field corn, silage corn, or corn grown for seed. • Applications must include an NIS or a COC with an ammonium fertilizer. • Allow a minimum of 15 days between sequential applications. • <i>Do not</i> apply if corn is more than 36 in. tall, or V10 stage, or 15 days before tassel emergence, whichever comes first.
Steadfast 50% nicosulfuron + 25% rimsulfuron	75WDG	0.75 oz	POST: Apply to corn up to 20 in. tall or through the V6 stage, whichever is more restrictive.	<ul style="list-style-type: none"> • Controls grasses and certain broadleaf weed species (Tables 12 and 14). • Registered for use in field corn. • <i>Do not</i> apply to field corn grown for seed, popcorn, or sweet corn. • See Table 16 for compatibility with soil insecticides.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Steadfast (cont.)				<ul style="list-style-type: none"> • Must include a COC or an NIS; the addition of a nitrogen source is also required unless prohibited on tank-mix partner label. • <i>Do not</i> apply more than 0.75 oz/A of Steadfast per year. • <i>Do not</i> tank-mix with Basagran, Laddok, or 2,4-D. • <i>Do not</i> tank-mix with other ALS-inhibiting herbicides unless recommended. • <i>Do not</i> graze or feed forage, hay, or straw within 30 days of applying Steadfast. • Steadfast will not control ALS-resistant weed species.
Steadfast ATZ 2.7% nicosulfuron + 1.3% rimsulfuron + 85.3% atrazine	89.3WDG	14 oz	POST: Apply to corn up to 12 in. tall or through the V6 stage, whichever is more restrictive.	<ul style="list-style-type: none"> • Controls annual grass and broadleaf weeds (Tables 12 and 14). • Registered for use in field corn. • This product contains atrazine; follow the use limitations listed under atrazine. • <i>Do not</i> tank-mix with Basagran, Laddok S-12, or 2,4-D. • Steadfast ATZ is a restricted use pesticide (RUP). • Must include a COC or an NIS; the addition of an ammonium nitrogen is also required. • <i>Do not</i> apply to field corn grown for seed, popcorn, or sweet corn. • <i>Do not</i> tank-mix with other ALS-inhibiting herbicides unless recommended. • <i>Do not</i> graze or feed forage, hay, or straw within 60 days of applying Steadfast ATZ.
Stinger clopyralid	3S	0.25 to 0.67 pt	POST: Apply to corn from emergence up to 24 in. tall.	<ul style="list-style-type: none"> • Controls Canada thistle and other broadleaf weeds (Table 14). • Registered for use on field corn, production seed corn, popcorn, and sweet corn. • <i>Do not</i> exceed 0.25 lb a.i. of clopyralid/A or 0.67 pt of Stinger/A/year. • Use of a spray adjuvant is not necessary but may increase control of certain broadleaf weeds.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
SureStart 3.75 lb acetochlor + 0.29 lb a.e. clopyralid + 0.12 lb flumetsulam	4.16SE	1.5 to 2 pt	Fall: Apply after October 15 when 4-in. soil temperature is less than 50°F but before ground freezes. EPP: Apply up to 30 days before planting corn. PPI: Apply up to 14 days before planting corn. PRE: Apply before or after planting. POST: Apply POST to corn up to 11 in. tall.	<ul style="list-style-type: none"> • Provides early-season control of certain annual grass and broadleaf weed species (Tables 12 and 14). • SureStart is for use only on herbicide-resistant field corn and silage corn. • Corn seed should be planted at least 1.5 in. deep. • POST applications will not control emerged grass weeds; a tank-mix partner will be needed for broad-spectrum control. • <i>Do not</i> apply to soils with a pH greater than 7.8, or those with less than 1.5% organic matter.
Surpass acetochlor	6.4EC	1.5 to 3.75 pt	Fall: Apply north of Illinois Route 136 after October 15. EPP: Apply up to 30 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply after planting but before crop emergence. POST: Apply until corn reaches 11 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and certain small-seeded broadleaf weeds (Table 12). • Surpass is a restricted use pesticide (RUP). • Registered for use on field corn, production seed corn, silage corn, popcorn, and sweet corn. • <i>Read and observe</i> all environmental precautions. • <i>Do not</i> apply more than 3.75 pt/A of Surpass per season. • Adjust rates according to soil texture and organic matter. • <i>Will not control emerged weeds.</i>
TopNotch acetochlor	3.2CS	2 to 3 qt	Fall: Apply north of Illinois Route 136 after October 15. EPP: Apply up to 40 days before planting. PPI: Apply up to 10 days before planting. PRE: Apply after planting but before crop emergence. POST: Apply to corn up to 11 in. tall.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and certain small-seeded broadleaf weeds (Table 12). • TopNotch is a restricted use pesticide (RUP). • Registered for use on field corn, production seed corn, silage corn, popcorn, and sweet corn. • <i>Read and observe</i> all environmental precautions. • Adjust rates according to soil texture and organic matter. • <i>Will not control emerged weeds.</i>

Table 1. Corn herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Yukon 12.5% halosulfuron + 55% dicamba	67.5WSG	4 to 8 oz	POST: Apply to corn from spike up to 36 in. tall. POST-directed: Drop nozzles may be used on corn from spike to 36 in. tall.	<ul style="list-style-type: none"> • Controls broadleaf weeds and sedges (Tables 12 and 14). • Registered for use on field corn and field corn grown for seed. • <i>Do not</i> make more than two applications of Yukon per year. • <i>Do not</i> exceed 8 oz/A of Yukon per year. • Allow at least 2 weeks between applications. • <i>Do not</i> graze or harvest for feed until the crop reaches the ensilage (milk) stage, at least 30 days after application. • This product contains dicamba; take precautions to avoid drift onto desirable legumes and broadleaf crops. • The use of an NIS is required, but it can be replaced with a COC; a nitrogen source is recommended.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence, LPOST = late post-emergence.
COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, ESO = ethylated seed oil, AMS = ammonium sulfate.

Table 2. Sorghum herbicides (Read and follow label directions before using product.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
2,4-D Amine (many trade names)	3.8 lb a.e. (many)	1 pt	POST: Apply to sorghum from 6 to 8 in. tall. POST-directed: Apply to sorghum from 8 to 15 in. tall.	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 9, 10, 14, and 25). • Registered for use on grain sorghum (milo). • <i>Do not</i> treat during the boot stage, flowering, or dough stage. • <i>Do not</i> forage for feed fodder for 7 days after application. • Spray particles can drift and cause injury to susceptible plants.
2,4-D Ester (many trade names)	3.8 lb a.e. (many)	0.5 to 1 pt	POST: Apply to sorghum from 5 to 8 in. tall. POST-directed: Apply to sorghum from 8 to 15 in. tall.	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 9, 10, 14, and 25). • Registered for use on grain sorghum (milo). • Use 0.75 to 1 pt/A for control of perennial weeds. • 2,4-D ester can volatilize if temperatures exceed 85°F. • See "Remarks and limitations" for 2,4-D Amine.
AAtrex, Atrazine atrazine	4L 90DF	0.5 to 2.0 lb a.i.	EPP: Apply up to 45 days before planting, except on coarse-textured soils. PPI: Apply up to 14 days before planting. PRE: Apply before crop and weeds emerge. POST: Apply to sorghum up to 12 in. tall.	<ul style="list-style-type: none"> • Controls annual broadleaf and certain grass weeds (Table 14). • Registered for use on sorghum and sorghum-sudan grass hybrids (grain and forage types). • Atrazine is a restricted use pesticide (RUP). • <i>Do not</i> apply more than 2.5 lb a.i. atrazine/A in a calendar year. • <i>Do not</i> apply more than 1.6 lb a.i. atrazine/A/application on highly erodible soils with less than 30% residue cover. • <i>Do not</i> apply more than 2.0 lb a.i. atrazine/A/application on soils that are not highly erodible or on highly erodible soils with at least 30% residue cover. • Risk of carryover is greater on soils with pH greater than 7.2. • POST applications should include a COC.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence.
COC = crop-oil concentrate, NIS = nonionic surfactant.

Table 2. Sorghum herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/ A	Application timings	Remarks and limitations
Aim carfentrazone	1.9EW	0.5 fl oz	Preplant Burn-down: Apply from prior to planting through sorghum emergence. POST: Apply to sorghum up to the 6-leaf stage.	<ul style="list-style-type: none"> • Controls some annual broadleaf weeds (Table 14). • Registered for use on grain and forage sorghum. • For broad-spectrum weed control, Aim will need to be tank-mixed. • <i>Do not</i> apply more than 1.0 fl oz/ A of Aim EW per season. • The use of drop nozzles is recommended for POST applications to sorghum grown for seed. • Must include an NIS. • The use of a COC for POST applications is <i>not</i> recommended.
Banvel dicamba	4L	0.5 pt	Preplant Burn-down: Apply to actively growing weeds at least 15 days prior to planting. POST: Apply to sorghum from spike to 8 in. tall. POST-directed: Apply to sorghum from 8 to 15 in. tall.	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 9, 10, 14, and 25). • Registered for use on sorghum (milo). • Applications during periods of rapid growth may result in temporary leaning of plants or rolling of leaves. • <i>Do not</i> graze or feed treated sorghum forage or silage prior to mature grain stage. • Take precautions to avoid drift onto desirable legumes and broadleaf crops. • <i>Do not</i> make more than one application per growing season.
Basagran bentazon	4S	1 to 2 pt	POST: Apply to actively growing weeds within the size limits listed on the label.	<ul style="list-style-type: none"> • Controls broadleaf weeds and sedges (Table 14). • Registered for use on grain and forage sorghum. • <i>Do not</i> graze treated sorghum for at least 12 days after application. • <i>Do not</i> apply more than 2 pt/ A of Basagran per year. • <i>Do not</i> apply to sorghum that is heading or blooming. • Include a COC and/or a spray-grade nitrogen source.

Table 2. Sorghum herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/ A	Application timings	Remarks and limitations
Bicep II Magnum 2.4 lb S-metolachlor + 3.1 lb atrazine	5.5L	1.6 to 2.58 qt	EPP: Apply up to 45 days before planting, except on any coarse soil or on medium soils with less than 1% organic matter. PPI: Apply up to 14 days before planting, except on any coarse soil or on medium soils with less than 1% organic matter. PRE: Apply to the surface at planting but before crop and weeds emerge, except on any coarse soil or on medium soils with less than 1% organic matter.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and broadleaf weeds (Tables 12 and 14). • <i>Sorghum seed must be treated with a safener (Concep).</i> • Bicep II Magnum is a restricted use pesticide (RUP). • Registered for use on grain and forage sorghum. • This product contains atrazine; follow the use limitations listed under atrazine. • This product contains S-metolachlor; follow the use limitations listed under Dual II Magnum. • <i>Do not</i> graze or feed forage from treated areas for 60 days following application. • Adjust rates according to soil texture, organic matter, and application timing.
Bicep Lite II Magnum 3.33 lb S-metolachlor + 2.67 lb atrazine	6L	1.1 to 1.9 qt	EPP: Apply up to 45 days before planting, except on any coarse soil or on medium soils with less than 1% organic matter. PP: Apply up to 14 days before planting, except on any coarse soil or on medium soils with less than 1% organic matter. PRE: Apply to the surface at planting but before weeds and crop emerge, except on any coarse soil or on medium soils with less than 1% organic matter.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and broadleaf weeds (Tables 12 and 14). • <i>Sorghum seed must be treated with a safener (Concep).</i> • Bicep Lite II Magnum is a restricted use pesticide (RUP). • Bicep Lite II Magnum contains less atrazine than Bicep II Magnum. • <i>See "Remarks and limitations" for Bicep II Magnum.</i>

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence.
COC = crop-oil concentrate, NIS = nonionic surfactant.

Table 2. Sorghum herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Buctril bromoxynil	2EC	1 to 1.5 pt	PRE: Apply from before planting until just prior to emergence to control existing vegetation.	<ul style="list-style-type: none"> • Controls certain annual broad-leaf weeds (Table 14). • Registered for use on sorghum (grain and forage). • <i>Do not</i> harvest for feed or fodder and <i>do not</i> graze within 45 days after application. • <i>Do not</i> exceed 2 pt/A of Buctril per season. • <i>Do not</i> apply the 2 pt/A rate of Buctril to sorghum. • Use of an adjuvant or liquid fertilizer may cause excessive leaf burn.
		1 to 1.5 pt	POST: Apply to sorghum from the 3-leaf stage until prior to the preboot stage.	
Buctril + atrazine 1.0 lb bromoxynil + 2.0 lb atrazine	3L	1.5 to 3 pt	PRE: Apply from before planting until just prior to emergence to control existing vegetation.	<ul style="list-style-type: none"> • Controls certain annual broad-leaf weeds (Table 14). • Buctril + atrazine is a restricted use pesticide (RUP). • Registered for use on sorghum (grain and forage). • <i>Do not</i> harvest for feed or fodder and <i>do not</i> graze within 45 days after application. • <i>Do not</i> exceed 4 pt/A of Buctril + atrazine per season. • <i>Do not</i> use on sandy or sandy loam soils, or excessive crop injury may occur. • This product contains atrazine; follow the use limitations listed under atrazine. • Use of an adjuvant or liquid fertilizer may cause excessive leaf burn.
		1.5 to 3 pt	POST: Apply to sorghum from the 3-leaf stage until prior to the preboot stage or 12 in. tall, whichever is more restrictive.	
Bullet 2.5 lb alachlor + 1.5 lb atrazine	4ME	2.5 to 4.0 qt	<p>PPI: Apply up to 7 days before planting.</p> <p>PRE: Apply after planting but before crop and weeds emerge.</p>	<ul style="list-style-type: none"> • Controls annual grass and broad-leaf weeds (Tables 12 and 14). • <i>Sorghum seed must be treated with a safener.</i> • Bullet is a restricted use pesticide (RUP). • Registered for use on grain sorghum (milo). • This product contains atrazine; follow the use limitations listed under atrazine. • <i>Do not</i> make more than two applications of Bullet per year or exceed 6.4 qt/A of Bullet per year. • <i>Do not</i> graze or harvest forage for 70 days following application. • Adjust rates according to soil texture and organic matter.

Table 2. Sorghum herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Clarity dicamba	4L	0.5 pt	Preplant Burn-down: Apply to actively growing weeds at least 15 days prior to planting. POST: Apply to sorghum from spike to 8 in. tall. POST-directed: Apply to sorghum from 8 to 15 in. tall.	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 9, 10, 14, and 25). • Registered for use on sorghum (milo). • Applications during periods of rapid growth may result in temporary leaning of plants or rolling of leaves. • <i>Do not</i> graze or feed treated sorghum forage or silage prior to mature grain stage. • Take precautions to avoid drift onto desirable legumes and broadleaf crops.
Dual II Magnum S-metolachlor	7.64EC	1 to 1.67 pt	EPP: Apply up to 45 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply before crop and weeds emerge.	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and certain small-seeded broadleaf weeds (Table 12). • <i>Sorghum seed must be treated with a safener (Concep).</i> • Registered for use on grain and forage sorghum. • <i>Do not</i> make more than one application of Dual II Magnum per season. • <i>Do not</i> graze or feed treated forage for 30 days after application. • Adjust rates according to soil texture, organic matter, and application timing.
Expert 1.74 lb S-metolachlor + 2.14 lb atrazine + 0.74 lb a.e. glyphosate	4.88SC	2.5 to 3.75 qt	EPP: Apply up to 30 days before planting. PRE: Apply before crop emergence.	<ul style="list-style-type: none"> • Controls annual and perennial grasses and broadleaves. • Expert is a restricted use pesticide (RUP). • Registered for use on forage and grain sorghum. • <i>Sorghum seed must be treated with a safener (Concep).</i> • <i>Do not</i> apply to coarse-textured soils. • <i>Do not</i> apply to medium- or fine-textured soils with less than 1% organic matter. • <i>Do not</i> graze or feed forage from treated areas for 60 days after application. • This product contains atrazine; follow the use limitations listed under atrazine.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence.
COC = crop-oil concentrate, NIS = nonionic surfactant.

Table 2. Sorghum herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
glyphosate (many trade names) (See Table 8.)	Various formulations	See Table 8 for product rates.	EPP Burndown: Apply before planting to control existing vegetation. PRE Burndown: Apply after planting but before crop emerges to control existing vegetation.	<ul style="list-style-type: none"> • Controls grass and broadleaf weed species (Tables 9, 10, 12, 14, and 25). • Application rates vary with weed size, application timing, and formulation. • Table 8 contains a list of glyphosate formulations. • Check labels for individual product restrictions.
G-Max Lite 2.25 lb dimethenamid-P + 2.75 lb atrazine	5L	2.0 to 3.5 pt	EPP: Apply up to 45 days before planting. PPI: Apply up to 2 weeks before planting. PRE: Apply before crop and weeds emerge. POST: Apply to sorghum up to 12 in. tall.	<ul style="list-style-type: none"> • Controls annual grasses and broadleaf weeds (Tables 12 and 14). • <i>Sorghum seed must be treated with a safener.</i> • Registered for use on grain sorghum. • G-Max Lite is a restricted use pesticide (RUP). • G-Max Lite contains less atrazine than Guardsman Max. • See "Remarks and limitations" for Guardsman Max.
Gramoxone Inteon paraquat	2S	2.0 to 4.0 pt 1.0 to 2.0 pt	EPP Burndown: Apply before planting to control existing vegetation. PRE Burndown: Apply after planting but before crop emerges to control existing vegetation. POST-directed: Apply when sorghum is at least 12 in. tall.	<ul style="list-style-type: none"> • Controls existing vegetation (Tables 9 and 10). • Gramoxone Inteon is a restricted use pesticide (RUP). • <i>Do not</i> apply broadcast after crop emergence. • <i>Do not</i> use around gardens, schools, recreational parks, or playgrounds. • Always add an NIS or a COC to the spray mixture. • Adjust rates according to weed sizes.
Guardsman Max 1.7 lb dimethenamid-P + 3.3 lb atrazine	5L	2.5 to 4.6 pt	EPP: Apply up to 45 days before planting. PPI: Apply up to 2 weeks before planting. PRE: Apply before crop and weeds emerge. POST: Apply to sorghum up to 12 in. tall.	<ul style="list-style-type: none"> • Controls annual grasses and broadleaf weeds (Tables 12 and 14). • <i>Sorghum seed must be treated with a safener.</i> • Registered for use on grain sorghum. • Guardsman Max is a restricted use pesticide (RUP). • <i>Do not</i> apply to sweet or forage sorghum. • <i>Do not</i> apply to sorghum planted in coarse-textured soils. <p>(continues)</p>

Table 2. Sorghum herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Guardsman Max (cont.)				<ul style="list-style-type: none"> • This product contains atrazine; follow the use limitations listed under atrazine. • <i>Do not</i> graze or feed forage sorghum within 60 days after application. • <i>Do not</i> harvest grain or fodder within 80 days after application. • Adjust rates according to soil texture, organic matter, and cation-exchange capacity.
IntRRo, Micro-Techalachlor	4EC, 4CS	1.5 to 3.0 qt	<p>PPI: Apply up to 7 days before planting.</p> <p>PRE: Apply to the surface at planting, before crop and weeds emerge, and within 5 days after the last preplant tillage operation.</p>	<ul style="list-style-type: none"> • Controls sedges, annual grasses, and certain small-seeded broadleaf weeds (Table 12). • <i>Sorghum seed must be treated with a safener (Screen).</i> • IntRRo and Micro-Tech are restricted use pesticides (RUPs). • Registered for use on grain sorghum (milo). • <i>Read and observe</i> all environmental precautions. • <i>Do not</i> make more than two applications per year or exceed a total of 4 qt/A of IntRRo or MicroTech per year. • <i>Do not</i> graze or harvest forage for 70 days following application of this product. • Adjust rates according to soil texture and organic matter.
Laddok S-12 2.5 lb bentazon + 2.5 lb atrazine	5L	1.33 to 2.33 pt	POST: Apply to sorghum up to 12 in. tall.	<ul style="list-style-type: none"> • Controls broadleaf weeds and sedges (Table 14). • Registered for use on grain and forage sorghum. • Laddok is a restricted use pesticide (RUP). • <i>Do not</i> make more than one application of Laddok per season. • <i>Do not</i> apply to sorghum grown for seed. • <i>Do not</i> apply to sorghum that is heading out or blooming. • This product contains atrazine; follow the use limitations listed under atrazine. • An adjuvant is required for consistent weed control.

Table 2. Sorghum herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Marksman 1.1 lb dicamba + 2.1 lb atrazine	3.2L	1.5 to 2.0 pt	PRE: May be applied at least 15 days before planting. EPOST: Apply to sorghum from the 2-leaf to the 5-leaf stage (about 2 to 8 in. tall).	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 14). • Marksman is a restricted use pesticide (RUP). • Registered for use on sorghum. • <i>Do not</i> apply to sorghum grown for seed. • <i>Do not</i> graze or feed forage for 21 days following application. • <i>Do not</i> harvest for 45 days following POST application. • <i>Do not</i> exceed 3.5 pt/A of Marksman per season. • <i>Do not</i> add crop oil after sorghum emergence; <i>do not</i> add a surfactant unless possible crop injury is acceptable. • This product contains atrazine; follow the use limitations listed under atrazine. • This product contains dicamba; take precautions to avoid drift onto desirable legumes and broadleaf crops. • Adjust rates according to soil texture and organic matter.
Outlook dimethenamid-P	6EC	8 to 21 fl oz	EPP: Apply up to 45 days before planting. PPI: Apply up to 2 weeks before planting. PRE: Apply before crop and weeds emerge. POST: Apply to sorghum up to 12 in. tall.	<ul style="list-style-type: none"> • Controls annual grasses and certain small-seeded broadleaf weeds (Table 12). • <i>Sorghum seed must be treated with a safener.</i> • Registered for use on grain sorghum. • <i>Do not</i> apply to sweet or forage sorghum. • <i>Do not</i> graze or feed forage sorghum within 60 days after application. • <i>Do not</i> harvest grain or fodder within 80 days after application. • Adjust rates according to soil texture, organic matter, and cation-exchange capacity. • <i>Will not control emerged weeds.</i>

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence.
COC = crop-oil concentrate, NIS = nonionic surfactant.

Table 2. Sorghum herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/ A	Application timings	Remarks and limitations
Paramount quinclorac	75DF	5.3 to 8.0 oz	PRE: Apply prior to sorghum emergence. POST: Apply to sorghum up to 12 in. tall.	<ul style="list-style-type: none"> • Controls certain annual grass and broadleaf species. • Registered for use on grain sorghum. • POST applications require the addition of an MSO or a COC; a nitrogen fertilizer also may be included. • <i>Do not</i> apply more than 16 oz/ A/year. • <i>Do not</i> plant crops other than wheat or sorghum for at least 10 months after application. • <i>Do not</i> allow livestock to graze in treated areas. • <i>Do not</i> feed treated forage, hay, silage, straw, or seed to livestock.
Permit halosulfuron	75WG	0.67 to 1.0 oz	POST: Can be applied to sorghum from the 2-leaf through the layby stage (before grain-head emergence).	<ul style="list-style-type: none"> • Controls sedges and certain annual broadleaf weeds (Tables 12 and 14). • Registered for use on grain sorghum (milo). • <i>Do not</i> exceed 1.0 oz/ A of Permit per season. • <i>Do not</i> harvest for forage or silage and <i>do not</i> graze within 30 days of application. • An NIS or a COC must be used. • Permit will not control ALS-resistant weed species.
Sequence 2.25 lb a.e. glyphosate + 3.0 lb S-metolachlor	5.25EW	2.5 to 4 pt	EPP: Apply up to 30 days before planting. PRE: Apply before crop emergence.	<ul style="list-style-type: none"> • Controls annual and perennial grasses and broadleaves. • Registered for use on grain and forage sorghum. • <i>Sorghum seed must be commercially treated with Concep safener.</i> • <i>Do not</i> exceed 3.5 pt/ A on coarse-textured soils or 3.75 pt/ A on medium-textured soils. • <i>Do not</i> apply after sorghum begins to emerge.

EPP = early preplant, PP = preplant, PPI = preplant incorporated, PRE = preemergence, EPOST = early postemergence, POST = postemergence.
COC = crop-oil concentrate, NIS = nonionic surfactant.

Table 2. Sorghum herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Shotgun 2.25 lb atrazine + 1.0 lb a.e. 2,4-D	3.25L	2 pt	EPOST: Apply to sorghum from spike to the 4-leaf stage, but before sorghum is 8 in. tall. POST-directed: Apply to sorghum at the 5-leaf stage, or to sorghum that is 8 to 12 in. tall.	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 14). • Shotgun is a restricted use pesticide (RUP). • Registered for use on sorghum. • This product contains atrazine; follow the use limitations listed under atrazine. • This product contains 2,4-D; take precautions to avoid drift onto desirable legumes and broadleaf crops. • Sorghum is a sensitive crop and may be susceptible to injury from this product.
Starane fluroxypyr	1.5 EC	0.67 pt	PRE: Apply prior to sorghum emergence. POST: Apply from the 3-leaf stage through the 7-leaf stage. POST-directed: Apply from the 8-leaf stage to boot.	<ul style="list-style-type: none"> • Controls certain annual and perennial broadleaf species. • Registered for use on grain sorghum. • <i>Do not</i> make more than 2 applications or apply more than 1.33 pt per acre per season. • <i>Do not</i> graze or harvest forage from treated areas within 40 days of application. • <i>Do not</i> apply less than 70 days before grain or stover harvest.
Yukon 12.5% halosulfuron + 55% dicamba	67.5WSG	4 to 6 oz	POST: Apply to sorghum from the 2-leaf stage up to 8 in. tall. POST-directed: Apply to sorghum from 8 to 15 in. tall.	<ul style="list-style-type: none"> • Controls broadleaf weeds and sedges (Tables 12 and 14). • Registered for use on grain sorghum (milo). • Applications during periods of rapid growth may cause temporary leaning of plants or rolling of leaves. • <i>Do not</i> exceed 6 oz/A of Yukon per year. • <i>Do not</i> graze or feed treated sorghum forage or silage prior to the mature grain stage. • <i>Do not</i> apply to sorghum grown for seed. • This product contains dicamba; take precautions to avoid drift onto desirable legumes and broadleaf crops. • The use of an NIS is required, but it can be replaced with a COC; a nitrogen source is recommended.

Table 3. Soybean herbicides (Read and follow label directions before using product.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
2,4-D (many trade names)	3.8 lb a.e. ester (many)	1 to 2 pt	Preplant Burndown: Apply before soybean planting.	<ul style="list-style-type: none"> • Controls annual and perennial broadleaf weeds (Tables 9 and 10). • <i>Do not</i> plant soybeans sooner than 7 days after application of up to 1 pt or sooner than 30 days after application of 2 pt. • <i>Do not</i> use on sandy soils. • Plant soybeans at least 1.5 to 2 in. deep; seed furrow should be completely closed.
Aim carfentrazone	1.9EW	0.5 to 1 fl oz 0.25 fl oz 1 to 1.5 fl oz	<p>Preplant Burndown: Apply before soybean planting.</p> <p>POST: Apply from the V3 stage up to the V10 stage of soybean.</p> <p>Preharvest: Apply at least 3 days before harvest.</p>	<ul style="list-style-type: none"> • Controls some annual broadleaf weeds (Table 14). • Can provide some burndown of existing vegetation. • POST applications require the addition of an NIS. • <i>Do not</i> apply more than 0.023 lb a.i./A per season. • <i>Do not</i> feed treated soybean forage or soybean hay to livestock. • Will not control PPO-resistant waterhemp.
Assure II quizalofop	0.88EC	5 to 12 fl oz	<p>Preplant Burndown: Apply 2.5 to 5 fl oz/A.</p> <p>POST: Apply before soybean pod set and at least 80 days before harvest.</p>	<ul style="list-style-type: none"> • Controls many annual and perennial grass weeds (Table 19). • Preplant burndown applications must include a COC. • POST applications require an NIS or a COC. • <i>Do not</i> graze or feed treated soybean forage, hay, or straw to livestock. • <i>Do not</i> apply within 80 days of harvest or more than 18 fl oz/A per season. • <i>Do not</i> plant rotational grass crops within 120 days of application.
Authority First 62.1% sulfentrazone + 8% cloransulam	70DF	3.23 to 8 oz	<p>PPI: Incorporate uniformly into the top 1 to 3 in. of soil.</p> <p>PRE: Apply before planting or within 3 days after planting.</p>	<ul style="list-style-type: none"> • Controls certain annual broadleaf weed species (Table 21). • Can provide some burndown of existing vegetation; include an NIS or a COC and an AMS. • <i>Do not</i> apply to soils classified as sand with less than 1% organic matter. • <i>Do not</i> feed treated soybean forage or soybean hay to livestock.

EPP = early preplant, PPI = preplant incorporated, PRE = preemergence, POST = postemergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, UAN = urea-ammonium nitrate, AMS = ammonium sulfate.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Authority MTZ 18% sulfentrazone + 27% metribuzin	45DF	8 to 20 oz	Fall: Apply after October 15 and when the sustained soil temperature at 4 in. is 55°F and declining. EPP: Apply up to 45 days before planting. PPI: Do not incorporate deeper than 2 in. PRE: Apply up to 3 days after planting.	<ul style="list-style-type: none"> • Controls certain annual broadleaf weed species (Table 21). • Can provide some burndown of existing vegetation; include a COC or an NIS. • Authority MTZ is a restricted use pesticide (RUP). • Certain soybean varieties are sensitive to Authority MTZ. • <i>Do not</i> apply after soybeans emerge. • <i>Do not</i> apply to soils classified as sand with less than 1% organic matter or to soils with a pH greater than 7.5. • <i>Do not</i> graze treated fields or harvest for forage or hay.
Autumn iodosulfuron	10WDG	0.3 oz	Fall: Apply after fall harvest but before the ground freezes. EPP: Apply at least 90 days before planting soybean.	<ul style="list-style-type: none"> • Controls certain winter annual broadleaf weeds (Table 9). • Applications require the addition of a COC and a nitrogen fertilizer (UAN or AMS). • Autumn will not provide season-long control of annual grass and broadleaf weed species. • <i>Do not</i> apply more than 0.3 oz (0.001875 lb a.i.) per acre per year.
Basagran bentazon	4L	1 to 3 pt	POST: Apply to actively growing weeds within the size limits listed on the label.	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 22). • Applications require a COC/MSO or a COC/MSO and an UAN. • <i>Do not</i> apply more than 2 lb a.i. bentazon/A per season. • <i>Do not</i> graze or cut treated soybean fields for forage or hay for at least 30 days after application.
Boundary 5.25 lb S-metolachlor + 1.25 lb metribuzin	6.5EC	1.2 to 3 pt	EPP: Apply up to 30 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply before soybeans emerge.	<ul style="list-style-type: none"> • Controls annual grasses and certain broadleaf weeds (Tables 19 and 21). • Can provide some burndown of existing vegetation. • Soil pH of 7.0 or higher increases the chance of soybean injury. • On soils with pH greater than 7.0, use only the 1.5 pt/A rate. • Treated soybean plants may be grazed or fed to livestock 40 days after the last application of Boundary.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/ A	Application timings	Remarks and limitations
Canopy 64.3% metribuzin + 10.7% chlorimuron	75DG	2.25 to 7 oz	EPP: Apply up to 45 days before planting. PPI: Apply up to 45 days before planting. PRE: Apply before soybeans emerge.	<ul style="list-style-type: none"> • Controls annual broadleaf weeds (Table 21). • Can provide some burndown of existing vegetation. • Burndown applications must include a COC or an NIS. • On soils with a composite pH greater than 7.0, <i>do not</i> exceed 2.25 oz/ A. • <i>Do not</i> apply after soybeans emerge. • <i>Do not</i> graze treated fields or harvest for forage or hay.
Canopy EX 22.7% chlorimuron + 6.8% tribenuron	29.5WDG	1.1 to 3.3 oz	Fall: Apply after harvest and before ground freeze. EPP: Apply 7 to 14 days before planting.	<ul style="list-style-type: none"> • Controls certain winter and summer annual broadleaf weeds. • The addition of 2,4-D ester will broaden the weed control spectrum. • Applications must include a COC or an NIS; COC is the preferred additive. • A 14-day soybean planting interval must be observed for applications greater than 2.2 oz per acre. • <i>Do not</i> graze treated fields or harvest for forage or hay.
Classic chlorimuron	25DG	1 to 3 oz 1 to 3 oz 0.5 to 0.75 oz	Fall: Apply after harvest but before ground freezes. EPP: Apply before soybeans emerge. POST: Apply after the first trifoliolate has expanded and at least 60 days before soybean maturity.	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 22). • Can provide some burndown of existing vegetation; include a COC for burndown applications. • Higher application rates are labeled for fall and EPP applications. • POST applications require an NIS or a COC/MSO; ammonium nitrogen fertilizer may also be required. • <i>Do not</i> graze treated fields or harvest for forage or hay.
Cobra or Phoenix lactofen	2EC	6 to 12.5 fl oz 8 to 12.5 fl oz	PRE: Consult label for application rates. POST: Apply no later than 45 days before harvest, or after the R6 growth stage.	<ul style="list-style-type: none"> • Controls annual broadleaf weeds (Table 22). • POST applications require the addition of spray additives. Consult respective product labels for recommendations. • <i>Do not</i> exceed a total of 25 fl oz/ A per season. • <i>Do not</i> graze or feed treated soybean forage to livestock or use soybean hay or straw for bedding. • Will not control PPO-resistant waterhemp.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/ A	Application timings	Remarks and limitations
Command clomazone	3ME	1.33 to 2.67 pt	EPP: Apply up to 30 days before planting. PRE: Apply before soybeans emerge. PPI: Incorporate no deeper than the top 1 to 2 in. of soil.	<ul style="list-style-type: none"> • Controls annual grasses and certain broadleaf weeds (Tables 19 and 21). • <i>Do not</i> apply Command 3ME within 1,200 feet of towns and housing developments, certain commercial fruit/nut or vegetable production areas, commercial greenhouses, or nurseries. • <i>Do not</i> allow livestock to graze on treated soybean plants.
Define flufenacet	4SC	8 to 14 fl oz	EPP: Apply up to 14 days before planting. PPI: Apply up to 14 days before planting. PRE: Apply before soybeans emerge.	<ul style="list-style-type: none"> • Controls annual grasses. • <i>Do not</i> apply more than 14 fl oz/A/season. • <i>Do not</i> graze or feed forage, hay, or straw to livestock.
Dual II Magnum S-metolachlor	7.64EC	1 to 2 pt	Fall: Applications can be made north of Illinois Route 136 after October 31. EPP: Apply up to 30 to 45 days before planting. PPI: Apply and incorporate within 14 days of planting. PRE: Apply during or after planting but before crop and weeds emerge. POST: Apply from soybean emergence through the third-trifoliolate stage.	<ul style="list-style-type: none"> • Controls annual grasses and certain broadleaf weeds (Tables 19 and 21). • <i>Do not</i> apply more than 2.5 pt of Dual II Magnum to soybeans during any one crop. • <i>Do not</i> apply more than 1.33 pt/A POST. • <i>Do not</i> graze or feed treated forage or hay from soybean treated POST. • <i>Will not control emerged weeds.</i>

EPP = early preplant, PPI = preplant incorporated, PRE = preemergence, POST = postemergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, UAN = urea-ammonium nitrate, AMS = ammonium sulfate.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Express SG tribenuron	50SG	0.25 to 0.5 oz	EPP: Apply at least 14 days before planting soybean.	<ul style="list-style-type: none"> • Controls certain emerged winter annual broadleaf weed species. • Applications require the addition of a spray additive such as an NIS or a COC. • Tank-mixing with a broad-spectrum herbicide will expand burn-down efficacy; select spray additives based on the additive limitations of the companion product. • <i>Do not</i> apply after soybean planting. • <i>Do not</i> allow livestock to graze on, or feed forage, hay, or straw from treated soybean fields.
Extreme 0.17 lb a.e. imazethapyr + 1.473 lb a.e. glyphosate	2.17L	3 pt	<p>Fall: Apply after harvest and prior to ground freeze.</p> <p>Burndown: Apply prior to planting or preemergence.</p> <p>POST: Apply only to <i>glyphosate-resistant</i> soybean and at least 85 days before harvest.</p>	<ul style="list-style-type: none"> • Controls grasses and broadleaf weeds when applied burndown or POST (Tables 19 and 22). • All applications of Extreme require the addition of a surfactant and AMS. • <i>Do not</i> apply Extreme POST to soybean varieties that are not <i>glyphosate-resistant</i>. • Make only one application of Extreme per season. • <i>Do not</i> graze or feed treated soybean forage, hay, or straw to livestock.
FirstRate cloransulam	84WDG	0.3 to 0.75 oz	<p>EPP: Apply within 2 weeks of planting for optimal results.</p> <p>PPI: Do not apply earlier than 4 weeks before planting.</p> <p>PRE: Apply within 2 days after planting for optimal results.</p> <p>POST: Apply to soybeans any time prior to the 50% flowering stage.</p>	<ul style="list-style-type: none"> • Controls broadleaf weeds (Tables 21 and 22). • Can provide some burndown of existing vegetation; include a COC and a liquid nitrogen fertilizer for burndown applications. • POST applications require either an NIS, a COC/MSO, an NIS plus UAN, or a COC/MSO plus UAN. • <i>Do not</i> make more than one soil application during a single growing season. • <i>Do not</i> apply more than 0.6 oz/A as a POST application. • The cumulative application rate may not exceed 1.05 oz/A/season. • <i>Do not</i> harvest soybeans for forage or hay for 14 days after application.

EPP = early preplant, PPI = preplant incorporated, PRE = preemergence, POST = postemergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, UAN = urea-ammonium nitrate, AMS = ammonium sulfate.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/ A	Application timings	Remarks and limitations
Flexstar fomesafen	1.88L	0.75 to 1.6 pt	POST: Apply before soybeans bloom.	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 22). • Make only one application of Flexstar in alternate years. • POST applications require an NIS or a COC/MSO; nitrogen fertilizer also can be added. • Maximum application rate north of Interstate 70 is 1.3 pt/ A. • Maximum application rate south of Interstate 70 is 1.6 pt/ A. • <i>Do not</i> graze treated areas or harvest for forage or hay. • Will not control PPO-resistant waterhemp.
Fusilade DX fluazifop	2EC	4 to 24 fl oz	POST: Apply before soybeans bloom.	<ul style="list-style-type: none"> • Controls many annual and perennial grass weeds (Table 19). • Use 6 to 12 fl oz/ A for most annual grass species; higher rates may be needed for perennial grass species. • POST applications require an NIS or a COC; nitrogen fertilizer also can be added. • <i>Do not</i> apply more than 32 oz/ A/ season. • <i>Do not</i> graze treated areas or harvest for forage or hay. • <i>Do not</i> plant rotational grass crops within 60 days of application.
Fusion 2 lb fluazifop + 0.56 lb fenoxaprop	2.56EC	4 to 14 fl oz	POST: Apply before soybeans bloom.	<ul style="list-style-type: none"> • Controls many annual and perennial grass weeds (Table 19). • POST applications require an NIS or a COC; nitrogen fertilizer also can be added. • <i>Do not</i> apply more than 24 oz/ A/ season. • <i>Do not</i> graze treated areas or harvest for forage or hay. • <i>Do not</i> plant rotational grass crops within 60 days of application.
Gangster 51% flumioxazin 84% cloransulam	Co-Pack	1.5 to 3 oz flumioxazin + 0.3 to 0.6 oz cloransulam	<p>Fall: Apply after harvest and no earlier than October 15.</p> <p>PRE: Apply before planting or within 3 days after planting but before soybeans emerge.</p>	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 21). • <i>Do not</i> graze treated fields or feed treated forage or hay to livestock. • <i>Do not</i> apply Gangster in fields where products containing flufenacet, alachlor, metolachlor, or dimethenamid will be used.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/ A	Application timings	Remarks and limitations
glyphosate (many trade names) (See Table 8.)	Various formulations	See Table 8 for product rates.	PRE: Apply before, during, or after planting but prior to emergence of soybean varieties that are not glyphosate-resistant. POST: Apply to <i>glyphosate-resistant</i> soybean up to the R3 growth stage. Spot treatment: Apply prior to initial pod set. Preharvest: Allow at least 7 to 14 days between application and harvest.	<ul style="list-style-type: none"> • Controls grasses and broadleaf weeds (Tables 19 and 22). • Additive requirements can vary by formulation. • Make POST applications only to <i>glyphosate-resistant</i> soybean.
Gramoxone Inteon paraquat	2S	2.0 to 4 pt 4.5 to 8.0 fl oz 8.0 to 16 fl oz	EPP Burndown: Apply before planting to control existing vegetation. PRE Burndown: Apply after planting but before crop emergence. POST-directed: Apply when soybeans are at least 8 in. tall. Preharvest: Do not apply within 15 days of harvest.	<ul style="list-style-type: none"> • Controls emerged grass and broadleaf weeds. • Gramoxone Inteon is a restricted use pesticide (RUP). • Applications require the addition of an NIS or a COC. • <i>Do not</i> graze or harvest for forage or hay. • <i>Do not</i> use around home gardens, schools, recreational parks, or playgrounds. • <i>Do not</i> apply broadcast after crop emergence. • Adjust rates according to weed size. • Preharvest applications to indeterminate varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less.
Harmony Extra XP 50% thifensulfuron + 25% tribenuron	75DF	0.3 to 0.6 oz	EPP: Apply at least 14 days before planting soybean.	<ul style="list-style-type: none"> • Controls certain emerged winter annual broadleaf weed species. • Tank-mixing with a broad-spectrum herbicide will expand burn-down efficacy; select spray additives based on the additive limitations of the companion product.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/ A	Application timings	Remarks and limitations
Harmony Extra SG 33.33% thifensulfuron + 16.67% tribenuron	50SG	0.45 to 0.9 oz		<ul style="list-style-type: none"> • Do not apply after soybean planting. • Do not allow livestock to graze on, or feed forage, hay, or straw from treated soybean fields.
Harmony GT XP thifensulfuron	75DF	0.3 to 0.6 oz 0.083 oz	<p>PRE: Apply up to 45 days before planting until before soybeans emerge.</p> <p>POST: Apply after the first trifoliolate has expanded fully.</p>	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 22). • POST applications require an NIS or a COC; nitrogen fertilizer is also required. • Apply no later than 60 days before harvest. • Do not graze or feed treated soybean forage or hay to livestock.
IntRRo, Micro-Tech alachlor	4EC, 4ME	2 to 3 qt	<p>EPP: Apply up to 30 days before planting.</p> <p>PPI: Apply up to 7 days before planting.</p> <p>PRE: Apply after planting and before soybean and weed emergence.</p>	<ul style="list-style-type: none"> • Controls annual grasses and certain broadleaf weeds (Tables 19 and 21). • IntRRo and Micro-Tech are restricted use pesticides (RUPs). • Do not make more than one application per year or exceed 3 qt/ A per year. • Do not feed forage, hay, or straw to livestock.
Linex linuron	4L	1 to 2 pt	<p>EPP: Apply up to 30 days before planting.</p> <p>PRE: Apply before soybeans emerge.</p>	<ul style="list-style-type: none"> • Controls certain annual broadleaf weeds (Table 21). • Higher rates are needed for soils high in clay and organic matter. • Shallow planted soybeans have an increased chance for injury. • Do not apply after soybeans begin to emerge. • Do not feed treated soybean forage or hay to livestock.
Outlook dimethenamid-P	6EC	8 to 21 fl oz	<p>Fall: Applications can be made north of Illinois Route 136 after October 1.</p> <p>EPP: Apply up to 45 days before planting.</p> <p>PPI: Apply and incorporate up to 2 weeks before planting. (<i>continues</i>)</p>	<ul style="list-style-type: none"> • Controls annual grasses and certain broadleaf weeds (Tables 19 and 21). • Make fall applications when soil temperatures at the 4-in. depth are sustained at less than 55°F but before ground freeze. • POST applications will not control emerged weeds. • Do not apply more than 21 fl oz/ A of Outlook per season. (<i>continues</i>)

EPP = early preplant, PPI = preplant incorporated, PRE = preemergence, POST = postemergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, UAN = urea-ammonium nitrate, AMS = ammonium sulfate.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Outlook (cont.)			PRE: Apply after planting and before soybean emergence. POST: Apply from first- to third-trifoliolate leaf stage.	<ul style="list-style-type: none"> • <i>Do not</i> graze or feed treated soybean forage, hay, or straw to livestock.
Poast Plus sethoxydim	1SC	0.75 to 3.0 pt	Preplant Burn-down: Apply prior to planting for control of existing grass weeds. POST: Apply to soybeans until 75 days prior to harvest.	<ul style="list-style-type: none"> • Controls many annual and perennial grass weeds (Table 19). • Applications require the addition of a COC/MSO; nitrogen fertilizer may also be added. • Only treated seed and hay may be used for livestock grazing or feeding. • <i>Do not</i> plant rotational grass crops within 30 days of application.
Prefix 4.34 lb S-metolachlor + 0.95 lb fomesafen	5.3EC	2 to 3 pt	EPP: Apply up to 15 days before planting soybean. PPI: Incorporate within 7 days after application. PRE: Apply before soybeans emerge.	<ul style="list-style-type: none"> • Controls certain annual grass and broadleaf weed species (Tables 19 and 21). • Make only one application of Prefix in alternate years. • Maximum application rate north of Interstate 70 is 2.5 pt/A. • Maximum application rate south of Interstate 70 is 3 pt/A. • <i>Do not</i> graze treated areas or harvest for forage or hay. • <i>Do not</i> apply metolachlor-containing products in tank mixture or as a sequential application.
Prowl or Pendi-max	3.3EC	1.2 to 3.6 pt	Fall: Apply after harvest between October 1 and December 31 and before ground freeze.	<ul style="list-style-type: none"> • Controls annual grasses and certain broadleaf weeds (Tables 19 and 21). • <i>Do not</i> apply after soybeans emerge.
Prowl H₂O pendimethalin	3.8CS	1.5 to 3.0 pt	EPP: Apply up to 45 days before planting when tank-mixed or followed sequentially. PPI: Apply up to 60 days before planting; incorporate 3.3EC formulation within 7 days of application.	<ul style="list-style-type: none"> • Livestock can graze or be fed forage from treated soybean fields.

EPP = early preplant, PPI = preplant incorporated, PRE = preemergence, POST = postemergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, UAN = urea-ammonium nitrate, AMS = ammonium sulfate.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Prowl or Pendi-max Prowl H₂O (cont.)			PRE: Apply south of Interstate 80 only; apply at planting or up to 2 days after planting.	
Pursuit imazethapyr	70DG 2AS	1.44 oz 4 fl oz	EPP: Apply up to 45 days before planting. PPI: Apply up to 45 days before planting. PRE: Apply before or at planting. POST: Apply before soybeans begin to bloom.	<ul style="list-style-type: none"> • Controls certain annual grasses and broadleaf weeds (Tables 19, 21, and 22). • Make only one application of Pursuit per season. • POST applications require the addition of an NIS plus UAN or a COC/MSO plus UAN. • <i>Do not</i> graze or feed treated soybean forage, hay, or straw to livestock.
Pursuit Plus 0.2 lb imazethapyr + 2.7 lb pendimethalin	2.9EC	2.5 pt	Fall: Apply after October 31 and before ground freeze. EPP: Apply up to 45 days before planting. PPI: Apply up to 45 days before planting. PRE: Apply south of Interstate 80 only; apply at planting or up to 2 days after planting.	<ul style="list-style-type: none"> • Controls certain annual grass and broadleaf weeds (Tables 19 and 21). • Make only one application of Pursuit Plus per season. • <i>Do not</i> apply after soybeans emerge. • <i>Do not</i> graze or feed treated soybean forage, hay, or straw to livestock.
Python flumetsulam	80WDG	0.8 to 1.33 oz	EPP: Apply up to 30 days before planting. PPI: Apply up to 30 days before planting. PRE: Apply during or after planting but prior to weed emergence.	<ul style="list-style-type: none"> • Controls annual broadleaf weeds (Table 21). • Can provide some burndown of existing vegetation; include a COC for burndown applications. • <i>Do not</i> apply to areas where soil pH is greater than 7.8 or to soils with less than 5% organic matter and pH less than 5.9. • Maximum total flumetsulam active ingredient allowed per growing season is 0.07 lb/A. • <i>Do not</i> graze or feed treated soybean forage, hay, or straw to livestock.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Raptor imazamox	1AS	4 to 5 fl oz	POST: Apply before soybeans bloom.	<ul style="list-style-type: none"> • Controls certain annual grasses and broadleaf weeds (Tables 19 and 22). • Applications require the addition of an NIS plus UAN or a COC/MSO plus UAN. • Make only one application of Raptor per season. • <i>Do not</i> graze or feed treated soybean forage, hay, or straw to livestock.
Resource flumiclorac	0.86EC	4 to 12 fl oz	POST: Apply to soybeans up to 60 days before harvest.	<ul style="list-style-type: none"> • Controls annual broadleaf weeds (Table 22). • POST applications require the addition of a COC/MSO; nitrogen fertilizer also can be added. • Sequential applications may be made at least 14 days apart. • <i>Do not</i> apply more than 12 fl oz/A in a single application. • <i>Do not</i> apply more than 16 fl oz/A to soybeans during a single growing season. • <i>Do not</i> graze or feed treated soybean forage, hay, or straw to livestock.
Rezult B&G B = 5 lb bentazon G = 1 lb sethoxydim	Co-Pack	1.6 pt of B + 1.6 pt of G	POST: Apply to soybeans up to 75 days before harvest.	<ul style="list-style-type: none"> • Controls grasses and broadleaf weeds (Tables 19 and 22). • Applications require the addition of a COC plus a nitrogen fertilizer. • <i>Do not</i> apply more than 3.2 pt/A in a single growing season. • <i>Do not</i> graze treated soybean fields and <i>do not</i> feed treated soybean forage to livestock.
Scepter imazaquin	70DG	1.4 to 2.8 oz	<p>Fall: Apply after harvest and before ground freeze.</p> <p>EPP: Apply up to 45 days before planting.</p> <p>PPI: Apply up to 45 days before planting and incorporate within 7 days of application.</p> <p>PRE: Apply before soybeans emerge.</p>	<ul style="list-style-type: none"> • Controls annual broadleaf weeds (Tables 21 and 22). • Use the 1.4 oz rate for POST applications. • POST applications require the addition of an NIS or a COC with or without a nitrogen fertilizer. • <i>Do not</i> apply more than once per year. • <i>Do not</i> graze or feed treated soybean forage, hay, or straw to livestock.

EPP = early preplant, PPI = preplant incorporated, PRE = preemergence, POST = postemergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, UAN = urea-ammonium nitrate, AMS = ammonium sulfate.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Scepter (cont.)			POST: Apply up to 90 days before harvest.	
Select clethodim	2EC	4 to 16 fl oz	Preplant Burn-down: Apply 3 to 8 fl oz/A. POST: Apply to soybeans up to 60 days before harvest.	<ul style="list-style-type: none"> • Controls many annual and perennial grass weeds (Table 19). • Applications require the addition of a COC; nitrogen fertilizer may also be added. • <i>Do not</i> graze treated fields or feed treated forage or hay to livestock. • <i>Do not</i> plant rotational grass crops within 30 days of application.
SelectMax clethodim	0.97EC	6 to 32 fl oz	POST: Apply to soybean up to 60 days before harvest.	<ul style="list-style-type: none"> • Controls many annual and perennial grass weeds (Table 19). • Applications require the addition of an NIS or a COC; AMS fertilizer also is required. See tank-mix label for specific adjuvant recommendations. • Additive requirements may change based on tank-mix partner. • <i>Do not</i> apply more than 64 fl oz per acre per season. • <i>Do not</i> graze treated fields or feed treated forage or hay to livestock.
Sencor metribuzin	75DF	2 oz to 1.16 lb	EPP: Apply up to 30 days before planting. PRE: Apply before soybean emergence.	<ul style="list-style-type: none"> • Controls annual broadleaf weeds (Table 21). • Can provide some burndown of existing vegetation; include a COC for burndown applications. • Treated vines may be grazed or fed to livestock 40 days after application. • <i>Do not</i> apply to sandy, sandy loam, or loamy sand soils with less than 2% organic matter. • <i>Do not</i> incorporate into the soil or apply more than once per season.
Sequence 2.25 lb a.e. glyphosate + 3.0 lb S-metolachlor	5.25EW	2.5 to 4 pt 2.5 to 3.5 pt	EPP: Apply up to 30 days before planting. PRE: Apply before crop emergence. POST: Apply only to <i>glyphosate-resistant</i> varieties through the third-trifoliolate stage.	<ul style="list-style-type: none"> • Controls annual and perennial grasses and broadleaves. • Application rate is dependent on soil texture and organic matter content. • <i>Do not</i> feed treated soybean forage or hay for 30 days after a soil application. • <i>Do not</i> graze or feed treated forage or hay from soybean following a POST application.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Sonic 62.1% sulfentrazone + 8% cloransulam	70DF	3.23 to 8 oz	PPI: Incorporate uniformly into the top 1 to 3 in. of soil. PRE: Apply before planting or within 3 days after planting.	<ul style="list-style-type: none"> • Controls certain annual broadleaf weed species (Table 21). • Can provide some burndown of existing vegetation; include an NIS or a COC and an AMS. • <i>Do not</i> apply to soils classified as sand with less than 1% organic matter. • <i>Do not</i> feed treated soybean forage or soybean hay to livestock.
Storm 2.67 lb bentazon + 1.33 lb aciflurofen	4SC	1.5 pt	POST: Apply to soybeans up to 50 days before harvest.	<ul style="list-style-type: none"> • Controls annual broadleaf weeds (Table 22). • Applications require the addition of a COC, an NIS, or a nitrogen fertilizer. • <i>Do not</i> apply more than 3 pt/A of Storm per season. • Sequential applications may be made at least 15 days apart. • <i>Do not</i> use treated plants for livestock feed or forage.
Synchrony XP 21.5% chlorimuron + 6.9% thifensulfuron	28.4DG	1 to 3 oz 0.375 to 1.125 oz	PRE: Apply up to 45 days before planting until just before soybean emergence. POST: Apply after the first trifoliolate has opened until 60 days prior to soybean maturity.	<ul style="list-style-type: none"> • Controls broadleaf weeds (Table 22). • POST application rates greater than 0.375 oz/A are for use only on <i>STS soybean</i> varieties. • Applications require the addition of a COC/MSO and inclusion of an ammonium nitrogen fertilizer. • The 0.375 oz/A rate can be applied POST to non-STS soybean varieties; use an NIS and ammonium nitrogen fertilizer. • <i>Do not</i> graze treated areas or harvest for forage or hay.
Treflan HFP trifluralin	4EC	1 to 2.5 pt	Fall: Apply and incorporate between October 15 and December 31. PPI: Apply and incorporate prior to planting when soil is in good condition to be worked.	<ul style="list-style-type: none"> • Controls annual grasses and certain broadleaf weeds (Tables 19 and 21). • <i>Do not</i> apply when soils are wet or subject to prolonged periods of flooding. • Incorporation should be accomplished within 24 hours of application.

EPP = early preplant, PPI = preplant incorporated, PRE = preemergence, POST = postemergence.

COC = crop-oil concentrate, NIS = nonionic surfactant, MSO = methylated seed oil, UAN = urea-ammonium nitrate, AMS = ammonium sulfate.

Table 3. Soybean herbicides (Read and follow label directions before using product.) (cont.)

Trade name	Formulation	Rate/A	Application timings	Remarks and limitations
Ultra Blazer acifluorfen	2SC	0.5 to 1.5 pt	Preplant Burn-down: Apply any-time before planting soybeans. POST: Apply up to 50 days prior to soybean harvest.	<ul style="list-style-type: none"> • Controls annual broadleaf weeds (Table 22). • Applications require the addition of an NIS, COC, AMS, or UAN. • <i>Do not</i> apply more than 2 pt/A of Ultra Blazer per growing season. • Allow a minimum of 15 days between sequential applications. • <i>Do not</i> use treated plants for feed or forage. • Will not control PPO-resistant waterhemp.
Valor SX flumioxazin	51WDG	2 to 3 oz	Fall: Apply no earlier than October 15 but prior to ground freeze. PRE: Apply before planting or within 3 days after planting but before soybean emergence.	<ul style="list-style-type: none"> • Controls annual broadleaf weeds (Table 21). • Can provide some burndown of existing vegetation; include a COC/MSO for burndown applications. • Mechanical incorporation will reduce residual weed control. • <i>Do not</i> apply Valor in fields where products containing flufenacet, alachlor, metolachlor, or dimethenamid will be used or soybean injury may occur unless supplemental labeling is followed. • <i>Do not</i> apply more than 3 oz/A of Valor per growing season. • <i>Do not</i> graze treated fields or feed treated forage or hay to livestock.
Valor XLT 30% flumioxazin 20.3% chlorimuron	40.3WDG	3 to 5 oz	Fall: Apply no earlier than October 15 but prior to ground freeze. PRE: Apply before planting or within 3 days after planting but before soybeans emerge.	<ul style="list-style-type: none"> • Controls annual broadleaf species (Table 21). • Can provide some burndown of existing vegetation; tank-mixing with a broad-spectrum herbicide will improve burndown efficacy. • Make only one application per season; do not exceed 5 oz/A/season. • <i>Do not</i> apply more than 2.5 oz/A to soils with a pH greater than 6.8. • <i>Do not</i> perform any tillage operation after application, or residual weed control will be reduced. • <i>Do not</i> graze treated fields or feed treated forage or hay to livestock. • <i>Do not</i> apply Valor XLT in fields where products containing flufenacet, alachlor, metolachlor, or dimethenamid will be used or soybean injury may occur unless supplemental labeling is followed.

Table 4. Herbicide and herbicide premix names and restrictions

Trade name(s)	Common name(s)	Restricted use pesticide ^a	Groundwater advisory ^b	Signal word ^c	Crop ^d
AAtrex, Atrazine	atrazine	Yes	Yes	Caution	C
Accent	nicosulfuron	—	—	Caution	C
Aim EW	carfentrazone-ethyl	—	—	Caution	C&S
Assure II	quizalofop	—	—	Danger	S
Authority First/Sonic	sulfentrazone + cloransulam	—	Yes	Caution	S
Authority MTZ	sulfentrazone + metribuzin	Yes	Yes	Danger	S
Autumn	iodosulfuron	—	—	Caution	C&S
Balance PRO	isoxaflutole	Yes	Yes	Caution	C
Banvel, Clarity	dicamba	—	Yes	Warning, Caution	C
Basagran	bentazon	—	Yes	Caution	C&S
Basis	rimsulfuron + thifensulfuron	—	—	Caution	C
Beacon	primisulfuron	—	—	Caution	C
Bicep II Magnum	S-metolachlor + atrazine + safener	Yes	Yes	Caution	C
Bicep Lite II Magnum	S-metolachlor + atrazine + safener	Yes	Yes	Caution	C
Boundary	S-metolachlor + metribuzin	—	Yes	Caution	S
Buctril	bromoxynil	—	—	Warning	C
Buctril + Atrazine	bromoxynil + atrazine	Yes	Yes	Caution	C
Bullet	alachlor + atrazine	Yes	Yes	Caution	C
Callisto	mesotrione	—	—	Caution	C
Canopy	chlorimuron + metribuzin	—	Yes	Caution	S
Canopy EX	chlorimuron + tribenuron	—	—	Caution	S
Celebrity Plus	nicosulfuron + dicamba + diflufenzopyr	—	Yes	Caution	C
Classic	chlorimuron	—	—	Caution	S
Cobra	lactofen	—	—	Danger	S
Command 3ME	clomazone	—	—	Caution	S
Define SC	flufenacet	—	Yes	Caution	C&S
Degree, Harness	acetochlor + safener	Yes	Yes	Caution, Warning	C
Degree Xtra, Harness Xtra	acetochlor + atrazine + safener	Yes	Yes	Caution	C
Distinct/Status	dicamba + diflufenzopyr	—	Yes	Caution	C
Dual II Magnum	S-metolachlor + safener	—	Yes	Caution	C&S
Equip	foramsulfuron + iodoflufenuron	—	—	Caution	C
Expert	S-metolachlor + glyphosate + atrazine	Yes —	Yes —	Caution Caution	C C&S
Express SG	tribenuron	—	—	Caution	C&S
Extreme	imazethapyr + glyphosate	—	Yes	Warning	S
FieldMaster	glyphosate + acetochlor + atrazine + safener	Yes	Yes	Caution	C
FirstRate	cloransulam	—	Yes	Caution	S
Flexstar	fomesafen	—	Yes	Warning	S
FulTime, Keystone, Breakfree ATZ	acetochlor + atrazine + safener	Yes	Yes	Caution, Warning	C
Fusilade DX	fluazifop	—	—	Caution	S
Fusion	fluazifop + fenoxaprop	—	—	Caution	S
Gangster	flumioxazin + cloransulam	—	Yes	Caution	S
Gramoxone Inteon	paraquat	Yes	—	Danger-Poison	C&S
Guardman Max, G-Max Lite	dimethenamid-P + atrazine	Yes	Yes	Caution, Warning	C
Halex GT	S-metolachlor + glyphosate + mesotrione	—	Yes	Caution	C
Harmony Extra XP/SG	thifensulfuron + tribenuron	—	—	Caution	C&S
Harmony GT XP	thifensulfuron	—	—	Caution	C&S
Hornet WDG	flumetsulam + clopyralid	—	Yes	Warning	C
Impact	topramezone	—	—	Caution	C
IntRRo, Micro-Tech	alachlor	Yes	Yes	Danger, Caution	S

Table 4. Herbicide and herbicide premix names and restrictions (cont.)

Trade name(s)	Common name(s)	Restricted use pesticide ^a	Groundwater advisory ^b	Signal word ^c	Crop ^d
Keystone LA, Break-free ATZ Lite	acetochlor + atrazine + safener	Yes	Yes	Caution	C
Laddok S-12	bentazon + atrazine	Yes	Yes	Danger	C
Lexar	S-metolachlor + mesotrione	Yes	Yes	Caution	C
Liberty	+ atrazine glufosinate	—	—	Warning	C
Lightning	imazethapyr + imazapyr	—	Yes	Warning	C
Linex	linuron	—	Yes	Caution	S
Lumax	S-metolachlor + atrazine + mesotrione	Yes	Yes	Caution	C
Many	2,4-D amine	—	Yes	Danger	C
Many	2,4-D ester	—	—	Caution	C
Many	glyphosate (see Table 8)	—	—	Caution	C&S
Marksman	dicamba + atrazine	Yes	Yes	Caution	C
NorthStar	primisulfuron + dicamba	—	Yes	Caution	C
Option	foramsulfuron + safener	—	—	Caution	C
Outlook	dimethenamid-P	—	Yes	Warning	C&S
Permit	halosulfuron	—	—	Caution	C
Phoenix	lactofen	—	Yes	Caution	S
Poast Plus	sethoxydim	—	—	Caution	S
Prefix	S-metolachlor + fomesafen	—	Yes	Warning	S
Princep, Simazine	simazine	—	Yes	Caution	C
Prowl, Pendimax	pendimethalin	—	—	Caution	C&S
Pursuit DG	imazethapyr	—	Yes	Warning	C&S
Pursuit Plus	pendimethalin + imazethapyr	—	Yes	Caution	C&S
Python	flumetsulam	—	Yes	Caution	C&S
Radius	flufenacet + isoxaflutole	Yes	Yes	Caution	C
Raptor	imazamox	—	—	Caution	S
Resolve	rimsulfuron	—	—	Caution	C
Resource	flumiclorac	—	—	Warning	C&S
Reult B + G	bentazon + sethoxydim	—	Yes	Danger	S
Scepter	imazaquin	—	—	Caution	S
Select, Select Max	clethodim	—	—	Warning	S
Sencor	metribuzin	—	Yes	Caution	C&S
Sequence	S-metolachlor + glyphosate	—	Yes	Caution	S
Shotgun	atrazine + 2,4-D	Yes	Yes	Danger	C
Spirit	primisulfuron + prosulfuron	—	Yes	Caution	C
Starane	fluroxypyr	—	—	Warning	C
Steadfast	nicosulfuron + rimsulfuron	—	—	Caution	C
Steadfast ATZ	nicosulfuron + rimsulfuron + atrazine	Yes	Yes	Caution	C
Stinger	clopyralid	—	Yes	Caution	C
Storm	bentazon + acifluorfen	—	Yes	Danger	S
SureStart	acetochlor + clopyralid	—	Yes	Caution	C
	+ flumetsulam				
Surpass, Breakfree, TopNotch	acetochlor + safener	Yes	Yes	Warning, Caution	C
Synchrony XP	chlorimuron + thifensulfuron	—	—	Caution	S
Treflan HFP	trifluralin	—	—	Caution	S
Ultra Blazer	acifluorfen	—	Yes	Danger	S
Valor SX	flumioxazin	—	—	Caution	S
Valor XLT	flumioxazin + chlorimuron	—	—	Caution	S
Yukon	halosulfuron + dicamba	—	Yes	Caution	C

^aTo be applied by licensed applicator.

^bSpecial precautions in sandy soils.

^cSignal word = toxicity signal; indicates need for extra precautions. The signal words "**Danger**" and "Warning" often indicate pesticides that can irritate skin and eyes, necessitating protective clothing, gloves, and goggles or faceshield.

^dC = corn; S = soybeans.

Table 5a. Corn–sorghum herbicide recropping restrictions, months

Herbicide ^a	Comments	Field corn	Sorghum	Wheat	Oats	Rye	Alfalfa	Clover	Soybeans
<i>Acetochlor and its premixes</i>									
Degree, Harness	acetochlor	AT	NY	4	2Y	2Y	2Y	2Y	NY
Degree Xtra, Harness Xtra 5.6L	w/atrazine	AT	NY	15	2Y	2Y	2Y	2Y	NY
FulTime, Keystone, Keystone LA, Breakfree ATZ, Breakfree ATZ Lite	w/atrazine	AT	NY	15	15	2Y	15	2Y	NY ^b
Surpass, TopNotch, Breakfree	acetochlor	AT	NY	4	2Y	2Y	2Y	2Y	NY
<i>Atrazine and its premixes; simazine</i>									
AAtrex, Atrazine	pH < 7.2	AT	AT	NY	2Y	NY	2Y	2Y	NY ^b
Bicep II Magnum	w/S-metolachlor	AT	AT ^c	NY	2Y	NY	2Y	2Y	NY ^b
Bicep Lite II Magnum	w/S-metolachlor	AT	AT ^c	NY	2Y	NY	2Y	2Y	NY ^b
Buctril + Atrazine	w/bromoxynil	AT	AT	NY	2Y	NY	2Y	2Y	NY
Bullet	w/alachlor	AT	AT ^c	NY	2Y	NY	2Y	2Y	NY ^b
Expert	w/S-metolachlor + glyphosate	AT	AT ^c	NY	2Y	NY	2Y	2Y	NY ^b
Guardsman Max, G-Max Lite	w/dimethenamid-P	AT	AT ^c	NY	2Y	NY	2Y	2Y	NY
Laddok S-12	w/bentazon	AT	AT	15	15	15	18	18	NY
Lexar	w/S-metolachlor + mesotrione	AT	NY	NY	2Y	NY	2Y	2Y	NY
Lumax	w/S-metolachlor + mesotrione	AT	NY	4.5	NY	4.5	18	18	NY
Marksman	w/dicamba	AT	AT	10	2Y	10	2Y	2Y	NY ^b
Princep, simazine	simazine	AT	NY	NY	2Y	NY	2Y	2Y	NY
Steadfast ATZ	w/nicosulfuron + rimsulfuron	AT	10	10 ^b	18 ^b	10 ^b	18 ^b	18 ^b	10 ^b
<i>Flumetsulam, clopyralid, and premixes</i>									
Hornet WDG	w/clopyralid	AT	12	4	4	4	10.5 ^e	26 ^{Fba}	10.5 ^e
Python	flumetsulam	AT	12	4	4	4	4	26 ^{Fba}	AT
Stinger	clopyralid	AT	10.5	AT	AT	AT	10.5	18	10.5 ^e
SureStart	w/acetochlor	AT	12	4	NY	NY	NY	NY	NY
<i>Isoxaflutole, flufenacet, and premix</i>									
Balance PRO	isoxaflutole	AT	6	4	18	18	10 ^e	18	6
Define SC	flufenacet	AT	12	12	12	12	12	12	AT
Radius	flufenacet + isoxaflutole	AT	12	12	18	12	12 ^e	18	6
<i>Mesotrione</i>									
Callisto	mesotrione	AT	10	4	4	4	10	18	10
Halex GT	w/S-metolachlor + glyphosate	AT	AT	4	18	4	10	18	10
<i>Imazethapyr and its premixes</i>									
Lightning	w/imazapyr	8.5 ^f	18	4	18	4	9.5	40 ^{Fba}	9.0
Pursuit	imazethapyr	8.5 ^f	18	3	18	4	4	40 ^{Fba}	AT
Pursuit Plus	w/pendimethalin	8.5 ^f	18	4	18	9.5	9.5	40 ^{Fba}	AT

Table 5a. Corn–sorghum herbicide recropping restrictions, months (cont.)

Herbicide ^a	Comments	Field corn	Sorghum	Wheat	Oats	Rye	Alfalfa	Clover	Soybeans
<i>Sulfonylureas and their premixes</i>									
Accent	nicosulfuron	AT	10 ^d	4	8	4	10	10	0.5
Autumn	iodosulfuron	1	9	4	9	4	18	18	3
Basis	thifensulfuron	AT	10	4	8	18	10	18	0.5
	+ rimsulfuron								
Beacon	primisulfuron	0.5	8	3	8	3	8	18	8
Celebrity Plus	dicamba	0.25	10 ^d	4	8	4	12	12	4
	+ nicosulfuron								
	+ diflufenzopyr								
Equip	foramsulfuron	0.5	9	2	9	2	18	18	9
	+ iodosulfuron								
NorthStar	primisulfuron	0.5	8	3	8	3	8	18	8
	+ dicamba								
Option	foramsulfuron	0.25	2	2	2	2	2	2	0.5
Permit	halosulfuron	1	2	2	2	2	9	9	9
Resolve	rimsulfuron	AT	10 ^e	4	9	18	10 ^e	10 ^e	10
Spirit	primisulfuron	1	10	3	3	3	18 ^g	18 ^g	10–18 ^h
	+ prosulfuron								
Steadfast	nicosulfuron	AT	10 ^d	4	8	4	10	10	0.5
	+ rimsulfuron								
Steadfast ATZ	nicosulfuron	AT	10	10	18	10	18	18	10
	+ rimsulfuron								
	+ atrazine								
Yukon	halosulfuron + dicamba	1	2	2	2	2	9	9	9
<i>Other active ingredients</i>									
Define	flufenacet	AT	12	12	12	12	12	12	AT
Impact	topramezone	AT	9	3	3	3	9	18	9

^{Fba} = field bioassay needed (see label); NY = next year; 2Y = second year; AT = anytime; d = days.

^aOther corn herbicides have no significant recropping restrictions, but Banvel, Clarity, and 2,4-D have replanting limits for soybeans.

^b2Y (second year) if applied after June 10 with high atrazine or Liberty ATZ and after July 1 with Basis Gold or Steadfast ATZ.

^cConcep or Screen seed protectant needed.

^d18 months if pH \geq 7.5.

^e18 months if < 15 inches of rainfall received and if soil has < 2% organic matter.

^fClearfield (CL) corn hybrids may be replanted anytime.

^gSpirit: pH < 7.8, applied before July 1, rainfall > 12 inches within 5 months and > 1 inch within 4 weeks of application.

^hI-70 to I-80: Spirit 10 months. North of I-80: Spirit 18 months.

Table 5b. Soybean herbicide recropping restrictions, months

Herbicide	Comments	Field corn	Sorghum	Wheat	Oats	Rye	Alfalfa	Clover	Soybeans
<i>Chlorimuron and its premixes</i>									
Canopy	w/ metribuzin	10	12	4	30	4	10	12	AT
Canopy EX ^a	w/ tribenuron	10	12	4	30	4	10	12	AT
Classic	high chlorimuron	9 ^b	9 ^b	3	3	3	12 ^b	12 ^b	AT
Synchrony XP	w/ thifensulfuron	9 ^b	9 ^b	3	3	3	12 ^b	12 ^b	AT
Valor XLT	w/ flumioxazin	10	10	4	30	4	12	18	AT
<i>Cloransulam and flumetsulam; cloransulam premixes</i>									
FirstRate	cloransulam	9	9	3	9	30 ^{Fba}	9	30 ^{Fba}	AT
Gangster	w/ flumioxazin	9	9	3	9	30 ^{Fba}	30 ^{Fba}	30 ^{Fba}	AT
Python	flumetsulam	AT	12	4	4	4	4	26 ^{Fba}	AT
Sonic/ Authority First	w/ sulfentrazone	10	12	4	12	12	12	30 ^{Fba}	AT
<i>Imazaquin (Region 3 = north of Peoria)</i>									
Scepter—Region 2 ^c	imazaquin	9.5 ^{d,e}	11 ^e	3 ^e	11 ^e	18	18	18	AT
Scepter—Region 3 ^c	0.5 rate, post	NY ^d	11	Fall ^e	NY ^e	18	18	18	AT
Scepter—Region 3 ^c	imazaquin	18	11	18	18	18	18	18	AT
<i>Imazethapyr and its premixes</i>									
Extreme	w/ glyphosate	8.5 ^f	18	4	18	4	4	4	AT
Pursuit	imazethapyr	8.5 ^f	18	3	18	4	4	40	AT
Pursuit Plus	w/ pendimethalin	8.5 ^f	18	4	18	9.5	9.5	40	AT
<i>Metribuzin and its premix</i>									
Authority MTZ	w/ sulfentrazone	10	12	4	18	18	12	18	4
Boundary	w/ S-metolachlor	8	12	4.5	12	12	4.5	12	AT
Sencor	metribuzin	4	12	4	12	12	4	12	4
<i>Other active ingredients</i>									
Autumn	iodosulfuron	1	9	4	9	4	18	18	3
Command 3ME	clomazone	9	9	12	12 ^g	12 ^g	12 ^g	12 ^g	AT
Define	flufenacet	AT	12	12	12	12	12	12	AT
Flexstar	fomesafen	10	18	4	4	4	18	18	AT
Linex	linuron	AT	AT	4	4	4	4	4	AT
Pendimax/Prowl	pendimethalin	NY	NY	4	NY	NY	NY	NY	AT
Prefix	fomesafen	10	18	4.5	4.5	4.5	18	18	AT
	+ S-metolachlor								
Raptor	imazamox	8.5	9	3	9	4	3	18	AT
Sequence	S-metolachlor	AT	AT	4.5	4.5	4.5	4	9	AT
	+ glyphosate								
Treflan	trifluralin	NY	12	NY	12	12	NY	NY	AT
Valor SX	flumioxazin	1 ^h	1 ^h	2 ^h	12	4	12	12	AT

^{Fba} = field bioassay needed (see label); NY = next year; 2Y = second year; AT = anytime.

^aMidwest states' rate, soil pH < 7.

^bExtend 2 months if applied after August 1.

^cSee label for exact area and Region 3 (northern Illinois) full-use rate.

^d10- to 15-inch annual rainfall is required, or use CL-corn hybrids.

^e15 months if Scepter/Scepter sequence, but 9.5 months or NY for CL-corn hybrids.

^fClearfield (CL) corn hybrids may be replanted anytime.

^gCover crops may be planted anytime, but stand reductions may occur. Do not graze or harvest for forage for at least 9 months.

^h30 days following applications of 2 ounces per acre or less and at least one inch of precipitation.

Table 6. Corn herbicide premixes, or co-packs, and equivalents

Herbicide	Components (a.i./gal or lb)	If you apply (per acre) . . .	You have applied (a.i.)	An equivalent rate of
Basis 75WDG	0.50 lb rimsulfuron 0.25 lb thifensulfuron	0.33 oz	0.01 lb rimsulfuron 0.005 lb thifensulfuron	0.66 oz Resolve 25WDG 0.11 oz Harmony GT XP 75DF
Bicep II Magnum 5.5L	2.40 lb S-metolachlor 3.1 lb atrazine	2.1 qt	1.26 lb S-metolachlor 1.63 lb atrazine	0.66 qt Dual II Magnum 7.64EC 1.62 qt AAtrex 4L
Bicep Lite II, Magnum 6L	3.33 lb S-metolachlor 2.67 lb atrazine	1.5 qt	1.25 lb S-metolachlor 1.00 lb atrazine	0.65 qt Dual II Magnum 7.64EC 1.00 qt AAtrex 4L
Buctril + Atrazine 3L	1.0 lb bromoxynil 2.0 lb atrazine	2 pt	0.25 lb bromoxynil 0.50 lb atrazine	1 pt Buctril 2EC 1 pt AAtrex 4L
Bullet 4CS	2.5 lb alachlor 1.5 lb atrazine	4 qt	2.5 lb alachlor 1.5 lb atrazine	2.5 qt Micro-Tech 4CS 1.5 qt AAtrex 4L
Camix 3.67	3.34 lb S-metolachlor 0.33 lb mesotrione	2 qt	1.67 lb S-metolachlor 0.165 lb mesotrione	1.75 pt Dual II Magnum 7.64EC 5.28 oz Callisto 4SC
Celebrity Plus 70WDG	0.42 lb dicamba 0.17 lb diflufenzopyr 0.106 lb nicosulfuron	4.7 oz	0.125 lb dicamba 0.049 lb diflufenzopyr 0.031 lb nicosulfuron	4.0 oz Distinct 70WDG 0.66 oz Accent 75DF 2.13 qt Degree 3.8CS
Degree Xtra 4.04CS	2.7 lb acetochlor 1.34 lb atrazine	3 qt	2.025 lb acetochlor 1.0 lb atrazine	1 qt AAtrex 4L 0.075 lb a.i. diflufenzopyr
Distinct 70WDG	0.2 lb diflufenzopyr 0.5 lb dicamba	6 oz	0.075 lb diflufenzopyr 0.188 lb dicamba	6 fl oz Clarity 4S 1.28 oz Option 35WDG
Equip 32WDG	0.30 lb foramsulfuron 0.02 lb iodosulfuron	1.5 oz	0.028 lb foramsulfuron 0.0019 lb iodosulfuron	0.0019 lb a.i. iodosulfuron 1.37 pt Dual II Magnum 7.64EC
Expert 4.88SC	1.74 lb S-metolachlor 2.14 lb atrazine 0.74 lb a.e. glyphosate	3 qt	1.31 lb S-metolachlor 1.61 lb atrazine 0.555 lb a.e. glyphosate	1.6 qt AAtrex 4L 1.48 pt glyphosate 3L 2.3 pt Harness 7EC
FieldMaster 4.06S	2.0 lb acetochlor 1.5 lb atrazine 0.56 lb a.e. glyphosate	4 qt	2.0 lb acetochlor 1.5 lb atrazine 0.56 lb a.e. glyphosate	3.0 pt AAtrex 4L 1.5 pt Roundup 3L 3.00 qt TopNotch 3.2CS
FulTime 4CS	2.4 lb acetochlor 1.6 lb atrazine	4 qt	2.4 lb acetochlor 1.6 lb atrazine	1.6 qt AAtrex 4L 18 fl oz Outlook 6EC
G-Max Lite 5L	2.25 lb dimethenamid-P 2.75 lb atrazine	3.0 pt	0.84 lb dimethenamid-P 1.0 lb atrazine	2 pt AAtrex 4L 18 fl oz Outlook 6EC
Guardsman Max 5L	1.7 lb dimethenamid-P 3.3 lb atrazine	4.0 pt	0.85 lb dimethenamid-P 1.65 lb atrazine	3.3 pt AAtrex 4L
Halex GT	2.09 lb S-metolachlor 2.09 lb a.e. glyphosate 0.209 lb mesotrione	3.6 pt	0.94 lb S-metolachlor 0.94 lb glyphosate 0.094 lb mesotrione	0.98 pt Dual II Magnum 7.64EC 2.5 pt Glyphosate 3L 3 fl oz Callisto 4SC
Harness Xtra 5.6L	3.1 lb acetochlor 2.5 lb atrazine	5.0 pt	1.94 lb acetochlor 1.56 lb atrazine	2.21 pt Harness 7E 3.12 pt AAtrex 4L
Hornet WDG 68.5WDG	0.185 lb flumetsulam 0.5 lb a.e. clopyralid	4 oz	0.046 lb flumetsulam 0.125 lb clopyralid	0.93 oz Python 80WDG 5.3 fl oz Stinger 3S

Table 6. Corn herbicide premixes, or co-packs, and equivalents (cont.)

Herbicide	Components (a.i./gal or lb)	If you apply (per acre) . . .	You have applied (a.i.)	An equivalent rate of
Keystone 5.25L, Breakfree ATZ	3.0 lb acetochlor 2.25 lb atrazine	2.7 qt	2.03 lb acetochlor 1.52 lb atrazine	2.5 pt Surpass 6.4EC 3.0 pt AAtrex 4L
Keystone LA 5.5L, Breakfree ATZ Lite	4 lb acetochlor 1.5 lb atrazine	2 qt	2 lb acetochlor 0.75 lb atrazine	2.5 pt Surpass 6.4EC 1.5 pt AAtrex 4L
Laddok S-12 5L	2.5 lb bentazon 2.5 lb atrazine	1.67 pt	0.52 lb bentazon 0.52 lb atrazine	1.0 pt Basagran 4S 1.0 pt AAtrex 4L
Lexar 3.7L	1.74 lb S-metolachlor 1.74 lb atrazine 0.224 lb mesotrione	3.5 qt	1.52 lb S-metolachlor 1.52 lb atrazine 0.196 lb mesotrione	1.6 pt Dual II Magnum 7.64EC 3 pt AAtrex 4L 6.27 fl oz Callisto 4SC
Lightning 70DG ^a	0.525 lb imazethapyr 0.175 lb imazapyr	1.28 oz	0.042 lb imazethapyr 0.014 lb imazapyr	0.96 oz Pursuit 70DG 0.896 fl oz Arsenal 2AS
Lumax 3.95L	2.68 lb S-metolachlor 0.268 lb mesotrione 1.0 lb atrazine	3.0 qt	2.01 lb S-metolachlor 0.20 lb mesotrione 0.75 lb atrazine	1.0 qt Dual II Magnum 7.64EC 6.4 fl oz Callisto 4SC 0.75 qt AAtrex 4L
Marksman 3.2L	1.1 lb dicamba 2.1 lb atrazine	3.5 pt	0.48 lb dicamba 0.92 lb atrazine	0.96 pt Banvel 4S 1.84 pt AAtrex 4L
NorthStar 47.4WDG	0.075 lb primisulfuron 0.399 lb dicamba	5 oz	0.023 lb primisulfuron 0.125 lb dicamba	0.50 oz Beacon 75WDG 4.00 fl oz Banvel 4S
Radius 4SC	3.57 lb flufenacet 0.43 lb isoxaflutole	20 fl oz	0.558 lb flufenacet 0.067 lb isoxaflutole	17.9 fl oz Define 4SC 2.15 fl oz Balance PRO 4SC
Shotgun 3.25F	2.25 lb atrazine 1 lb a.e. 2,4-D	3 pt	0.84 lb atrazine 0.375 lb a.e. 2,4-D	1.68 pt AAtrex 4L 0.6 pt Salvo 5E
Spirit 57WDG	0.428 lb primisulfuron 0.142 lb prosulfuron	1 oz	0.027 lb primisulfuron 0.009 lb prosulfuron	0.57 oz Beacon 75WDG 0.25 oz Peak 57WDG
Status 56WDG	0.16 lb diflufenzopyr 0.4 lb dicamba	5 oz	0.05 lb diflufenzopyr 0.125 lb dicamba	0.05 lb a.i. diflufenzopyr 4 fl oz Clarity 4S
Steadfast 75WDG	0.5 lb nicosulfuron 0.25 lb rimsulfuron	0.75 oz	0.023 lb nicosulfuron 0.012 lb rimsulfuron	0.5 oz Accent 75DF 0.75 oz Resolve 25WDG
Steadfast ATZ 89.3WDG	0.027 lb nicosulfuron 0.013 lb rimsulfuron 0.853 lb atrazine	14 oz	0.024 lb nicosulfuron 0.011 lb rimsulfuron 0.746 lb atrazine	0.5 oz Accent 75DF 0.73 oz Resolve 25WDG 0.83 lb AAtrex 90DF
SureStart 4.16SE	3.75 lb acetochlor 0.12 lb flumetsulam 0.29 lb a.e. clopyralid	2 pt	0.94 lb acetochlor 0.03 lb flumetsulam 0.07 lb a.e. clopyralid	1.17 pt Surpass 6.4EC 0.6 oz Python 80WDG 3.1 fl oz Stinger 3S
Yukon 67.5WSG	0.125 lb halosulfuron 0.50 lb dicamba	4 oz	0.03 lb halosulfuron 0.125 lb dicamba	0.67 oz Permit 75WSG 4 fl oz Banvel 4S

^a Use only on Clearfield (CL) corn hybrids.

Table 7. Soybean herbicide premixes, or co-packs, and equivalents

Herbicide	Components (a.i./gal or lb)	If you apply (per acre) . . .	You have applied (a.i.)	An equivalent rate of
Authority First/ Sonic 70DF	0.621 lb sulfentrazone 0.08 lb cloransulam	6.4 oz	0.248 lb sulfentrazone 0.32 lb cloransulam	5.3 oz Authority 75DF 0.6 oz FirstRate 84 WDG
Authority MTZ 45DF	0.18 lb sulfentrazone 0.27 lb metribuzin	20 oz	0.23 lb sulfentrazone 0.338 lb metribuzin	4.8 oz Authority 75DF 7.2 oz Sencor 75DF
Boundary 6.5EC	5.25 lb S-metolachlor 1.25 lb metribuzin	2.5 pt	1.64 lb S-metolachlor 0.391 lb metribuzin	1.72 pt Dual Magnum 7.62EC 12.5 fl oz Sencor 4L
Canopy 75DG	0.107 lb chlorimuron 0.643 lb metribuzin	4 oz	0.027 lb chlorimuron 0.161 lb metribuzin	1.71 oz Classic 25DG 3.43 oz Sencor 75DF
Canopy EX 29.5WDG	0.227 lb chlorimuron 0.068 lb tribenuron	1.1 oz	0.016 lb chlorimuron 0.005 lb tribenuron	1.00 oz Classic 25DG 0.1 oz Express XP 75DF
Extreme 2.17L ^a	0.17 lb imazethapyr 1.473 lb a.e. glyphosate	3 pt	0.063 lb imazethapyr 0.552 lb a.e. glyphosate	4 fl oz Pursuit 2AS 1.47 pt Roundup 3L
Fusion 2.56EC	2 lb fluazifop 0.56 lb fenoxaprop	8 fl oz	0.125 lb fluazifop 0.035 lb fenoxaprop	8 fl oz Fusilade DX 2EC 4.48 fl oz Puma 1EC
Gangster V&FR (co-pack)	0.51 lb flumioxazin 0.84 lb cloransulam	3 oz 0.6 oz	0.096 lb flumioxazin 0.032 lb cloransulam	3 oz Valor SX 51WDG 0.6 oz FirstRate 84WDG
Prefix 5.3EC	4.34 lb S-metolachlor 0.95 lb fomesafen	2 pt	1.09 lb S-metolachlor 0.238 lb fomesafen	1.14 pt Dual Magnum 7.62 EC 0.95 pt Reflex 2EC
Pursuit Plus 2.9EC	0.2 lb imazethapyr 2.7 lb pendimethalin	2.5 pt	0.063 lb imazethapyr 0.84 lb pendimethalin	4 fl oz Pursuit 2AS 2 pt Prowl 3.3EC
Rezult B&G (co-pack)	B = 5.0 lb bentazon G = 1.0 lb sethoxydim	1.6 pt 1.6 pt	1.00 lb bentazon 0.20 lb sethoxydim	2.0 pt Basagran 4S 1.6 pt Poast Plus 1E
Sequence 5.25L	3.0 lb S-metolachlor 2.25 lb a.e. glyphosate	3 pt	1.13 lb S-metolachlor 0.84 lb a.e. glyphosate	1.18 pt Dual Magnum 7.62EC 26 fl oz Touchdown Total 4.17L
Storm 4S	2.67 lb bentazon 1.33 lb acifluorfen	1.5 pt	0.50 lb bentazon 0.25 lb acifluorfen	1 pt Basagran 4S 1 pt Blazer 2S
Synchrony XP 28.4DG ^b	0.215 lb chlorimuron 0.069 lb thifensulfuron	0.75 oz	0.01 lb chlorimuron 0.003 lb thifensulfuron	0.64 oz Classic 25DF 0.068 oz Harmony GT XP 75DF
Valor XLT 40.3WDG	0.3 lb flumioxazin 0.103 lb chlorimuron	3 oz	0.056 lb flumioxazin 0.019 lb chlorimuron	1.76 oz Valor 51WDG 1.24 oz Classic 25DF

^aUse postemergence only on glyphosate-resistant varieties.

^bUse only on STS (sulfonyleurea-tolerant) varieties at this rate.

Table 8. Glyphosate formulations and product equivalents

Trade name	Company	Active ingredient/ acid equivalent per gallon or pound	Product rate equivalent to				Crop ^a
			0.375 lb a.e.	0.56 lb a.e.	0.75 lb a.e.	1.13 lb a.e.	
		 fl oz				
Cornerstone	Agrilience	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Cornerstone Plus	Agrilience	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Rascal	Agrilience	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Rascal Plus	Agrilience	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Gly Star Original	Albaugh, Inc./ Agri Star	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Gly Star Plus	Albaugh, Inc./ Agri Star	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
ClearOut 41 Plus	Chemical Product Technologies, LLC	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Glyfos	Cheminova	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Glyfos X-TRA	Cheminova	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Duramax	Dow AgroSciences	5.4 lb a.i./4 lb a.e.	12	18	24	36	C&S
Durango DMA	Dow AgroSciences	5.4 lb a.i./4 lb a.e.	12	18	24	36	C&S
FS Glyphosate Plus	Growmark	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Rattler Plus	Helena	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Glyphosate 41%	Helm Agro USA	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Mirage	Loveland	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Mirage Plus	Loveland	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Gly-Flo	Micro Flo	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Honcho	Monsanto	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Honcho Plus	Monsanto	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Roundup PowerMAX	Monsanto	5.5 lb a.i./4.5 lb a.e.	11	16	22	32	C&S
Roundup Weathermax	Monsanto	5.5 lb a.i./4.5 lb a.e.	11	16	22	32	C&S
Credit	Nufarm	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Credit Extra	Nufarm	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Touchdown	Syngenta	3.7 lb a.i./3 lb a.e.	16	24	32	48	C&S
Touchdown HiTech	Syngenta	6.16 lb a.i./5 lb a.e.	10	14	19	29	C&S
Touchdown Total	Syngenta	5.14 lb a.i./4.17 lb a.e.	11.5	17	23	35	C&S
Buccaneer	Tenkoz	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Buccaneer Plus	Tenkoz	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Gly-4	Universal Crop Protection Alliance	4 lb a.i./3 lb a.e.	16	24	32	48	C&S
Gly-4 Plus	Universal Crop Protection Alliance	4 lb a.i./3 lb a.e.	16	24	32	48	C&S

^aLabeled for use in glyphosate-resistant corn hybrids (C) and/or soybean varieties (S).

Table 9. Control ratings for herbicides to control existing vegetation in no-till corn and soybean

Herbicide	Crop ^a	Winter annual grasses					Winter annual broadleaves					Summer annuals					Perennials				
		Barley, little	Bluegrass, annual	Brome, downy	Ryegrass, annual	Rye or wheat cover	Chickweed, common	Henbit/ purple deadnettle	Horseweed (maretail)	Mustards	Prickly lettuce	Foxtail, giant	Fleabane, daisy or annual	Lambsquarters, common	Ragweed, common	Ragweed, giant	Smartweed, Pennsylvania	Alfalfa	Dandelion, common	Clover, red	Vetch, hairy
2,4-D ester ^b	C&S	0	0	0	0	0	5	5	8	9	8	0	6	9	9	8	7	6	8	7	9
2,4-D + Clarity or Banvel ^{b,c}	C&S	0	0	0	0	0	8	6	8	9	9	0	8	9	9	9	8	8	9	8	9
2,4-D + glyphosate ^b	C&S	9	9	9	9	9	9	9	9	9	9	6	9	9	9	8	6	8	8	8	
atrazine	C	9	9	7	6	6	9	9	8	9	9	7	7	9	9	9	4	6	4	7	
Autumn + 2,4-D ^b	C&S	0	0	0	0	0	9	8	8	9	8	0	—	—	—	—	6	8	7	9	
Balance PRO	C	—	—	6	—	5	8	6	7	8	8	8	—	8	8	6	8	0	0	6	
Balance PRO + atrazine	C	—	8	7	6	6	9	8	9	8	9	8	7	9	9	9	9	4	6	6	
Basis	C	8	8	8	—	6	7	8	6	9	9	9	—	9	6	8	9	5	8	—	
Canopy + 2,4-D ^b	S	4	4	4	4	4	8	8	8+	9	9	5	7	9	9	8	9	5	7	7+	
Canopy EX + 2,4-D ^b	S	4	4	4	4	4	9	8	8	9	9	6	8	9	9	8	9	5	8	7+	
Clarity, Banvel ^c	C&S	0	0	0	0	0	9	7	7	7	9	0	8	9	9	9	9	8	9	7+	
Expert	C	9	9	9	9	9	9	9	8	9	9	9	7	9	9	8	9	6	7	7	
Extreme	S	9	9	9	9	9	9	8+	7+	9	7+	9	—	9	9	9	9	6	7	7	
FieldMaster	C	9	9	9	9	9	9	9	8	9	9	9	7	9	9	8	9	6	7	7	
glyphosate ^d	C&S	9	9	9	9	8	9	7	7	8	7	9	5	8	7	8	7	5	6	5	
glyphosate ^e	C&S	9	9	9	9	9	9	9	8	9	8	9	6	9	9	9	8	6	7	7	
Gramoxone Inteon	C&S	7	9	7	7	6	9	8	6	7	6	8	5	8	8	7	6	3	6	4	
Gramoxone Inteon + atrazine	C	9	9	8	8	8	9	9	9	9	9	9	7	9	9	9	9	4	7	6	
Marksman	C	9	9	8	5	5	9	9	9	9	9	5	6	9	9	9	9	8	9	7	
Sencor	C&S	8	—	7	5	4	9	8	6	8	8	5	—	7	7	6	8	3	5	6	
Valor SX	S	—	—	—	0	—	9	7	0	8	0	0	—	8	5	5	0	0	0	0	
Valor XLT + 2,4-D ^b	S	4	4	4	—	—	8	8	8+	9	9	5	7	9	9	8	9	6	8	7	

9 = excellent, 8 = good, 7 = fair, 6 = poor, < 5 = unsatisfactory, — = no information available.

^aLabeled for burndown applications in corn (C) or soybean (S).

^bSoybean herbicide applications require a 7-day interval between planting and application for 1 pt or less and a 30-day interval for applications of 1 to 2 pt or more.

^cSoybean herbicide applications require a 14-day interval between planting and application for 8 fl oz or less and a 28-day interval for applications of 8 to 16 fl oz or more.

^dGlyphosate rate 0.375 lb a.e. (see Table 8 for a listing of glyphosate formulations).

Table 10. Control of perennial grass and legume sods before no-till crop production

Herbicide	Rate/acre	Alfalfa	Blue- grass	Brome, smooth	Clover, red	Fescue, tall	Orchard- grass	Quack- grass	Timothy
glyphosate, fall	1.5 lb a.e. ^a	8	9+	9	9	9	9	9	9
glyphosate, fall	0.75 lb a.e. ^a	7	9	7	7	7	8	9	9
+ 1 pt 2,4-D		8	9	6	9	6	7	8	8
+ 0.5 pt Banvel		8	9	6	9	6	7	8	8
+ 1 pt Banvel		9	9	6	9	6	7	8	8
glyphosate, fall + spring	0.75/0.75 lb a.e. ^a	8	9+	9+	9	9	9	9	9
glyphosate, spring	1.5 lb a.e. ^a	6	9	8	7	7	7	9	8
glyphosate, spring	0.75 lb a.e. ^a	5	8	6	5	6	6	7	7
+ 1 pt 2,4-D		7	8	5	8	5	5	6	7
+ 0.5 pt Banvel		8	8	5	9	5	5	6	7
Gramoxone Inteon, spring	4 pt	N	6	4	6	7	4	4	6
Gramoxone Inteon, spring	2 pt	N	5	N	5	5	N	N	5
+ 2 lb atrazine		5	9	7	8	8	7	7	8

9 = excellent, **8** = good, **7** = fair, **6** = poor, **5** or **4** = unsatisfactory, **N** = no control or not labeled. Boldface indicates acceptable control.

^aSee Table 8 for a listing of glyphosate formulations and product rates.

Table 11. Corn herbicides: Preplant or preemergence rates per acre

Herbicide	Unit	1% OM sandy loam ^a	1–2% OM silt loam ^b	3–4% OM silty clay loam ^c	5–6% OM silty clay ^c
Atrazine 4L	qt	2.0	2.0	2.0	2.0
Atrazine 90DF	lb	2.2	2.2	2.2	2.2
Balance PRO 4SC	fl oz	No	1.88–3.0 ^d	2.25–3.75	2.25–3.75
Banvel 4S	pt	No ^e	No ^e	1.0	1.0
Bicep II Magnum 5.5L	qt	1.3	1.6	2.1	2.6
Bicep Lite II Magnum 6L	qt	0.9	1.1	1.5	1.9
Bullet 4L	qt	2.5	3.0	4.0	4.5
Callisto 4SC	fl oz	6–7.7	6–7.7	6–7.7	6–7.7
Clarity 4S	pt	No ^e	No ^e	1.0	1.0
Define 4SC	fl oz	15	19	22	25
Degree 3.8CS	pt	2.25–3.25 ^g	3.25–4.25	4.25–5	4.25–5
Degree Xtra 4.04CS	qt	2.9 ^g	2.9–3.7	3.2–3.7	3.2–3.7
Dual II Magnum 7.64EC	pt	1.0	1.33	1.67	2.0
Expert 4.88SC	qt	2.5–3.7	3–3.75	3–3.75	3–3.75
FieldMaster 4.06S	qt	3.5–5	4–5	4–5	4–5
FulTime 4L	qt	2.5 ^g	3.0	4.0	5.0
G-Max Lite 5L	pt	2.0	2.5	3.0	3.5
Guardsman Max 5L	pt	3.0	4.0	4.6	4.6
Harness 7EC	pt	1.5 ^g	2.0	2.5	2.75
Harness Xtra 5.6L	qt	1.4 ^g	2.0	2.5	3.0
Hornet WDG 68.5WDG	oz	4.0	5.0	5.0	5.0
Keystone 5.25L, Breakfree ATZ	qt	2.2 ^g	2.4	2.6	3.1
Keystone LA 5.5L, Breakfree ATZ Lite	qt	1.6 ^g	1.8	1.9	2.7
Lexar 3.7L	qt	3	3	3.5	3.5
Lumax 3.95L	qt	2.5	2.5	3.0	3.0
Marksman 3.3L	pt	No ^e	No ^e	3.5	3.5
Micro-Tech 4CS	qt	2.0	2.25	2.75	3.25
Outlook 6EC	fl oz	12–14	14–16	18–21	18–21
Partner 65WG	lb	3.0	3.5	4.0	5.0
Princep or simazine 90DF	lb	2.2	2.6	3.3	4.0
Prowl or Pendimax 3.3EC	pt	2.0	3.0	4.0	4.8
Prowl H ₂ O 3.8CS	pt	2.0	3.0	4.0	4.0
Pursuit Plus ^h 2.9EC	pt	2.5	2.5	2.5	2.5
Python 80WDG	oz	0.8 ^f	1.0 ^f	1.25	1.33
Radius 4SC	fl oz	7–10	9–16	14–28	19–28
SureStart 4.16SE	pt	No	1.5–1.75	1.75 pt	2.0
Surpass 6.4E, Breakfree	pt	1.5 ^g	2.0	2.5	3.0
TopNotch 3.2CS	qt	2.0 ^g	2.25	2.5	3.0

OM = organic matter in the soil.

No = not labeled for use on this soil type.

^aCharacteristic of most sandy soils in Illinois.^bCharacteristic of many Illinois soils south of Interstate 70.^cCharacteristic of many “prairie soils” in northern Illinois.^dTo use these rates the OM needs to be greater than 1.5%.^eIf planted to no-till corn, may use 0.5 pt Banvel or 2 pt Marksman.^fMay cause crop injury on this soil.^gDo not use if groundwater is within 30 ft of surface.^hUse only with Clearfield (CL) corn hybrids.

Table 12. Corn herbicides: Grass and nutsedge control ratings

Herbicide	Annuals								Perennials				Corn response
	Barnyardgrass	Crabgrass	Cupgrass, woolly	Foxtail, giant	Foxtail, yellow	Panicum, fall	Sandbur	Shattercane	Johnsongrass	Muhly, wirestem	Nutsedge, yellow	Quackgrass	
<i>Soil-applied</i>													
Atrazine	7+	5	4	7	7	N	6	N	N	N	6	7	0
Define	9	9	7	9	9	9	7	5	N	N	7	N	1+
Degree, Harness	9	9	7+	9	9	9	7	5	N	N	8	N	1+
Dual II Magnum	9	9	7	9	9	9	6	5	N	N	8	N	1
Outlook	9	9	7	9	9	9	6	5	N	N	7+	N	1+
Micro-Tech	9	9	7	9	9	9	6	5	N	N	7+	N	1+
Surpass, Breakfree, Top-Notch	9	9	7+	9	9	9	7	5	N	N	8	N	1+
Pendimax/Prowl	8+	8+	8	8+	9	8+	8	7	N	N	N	N	1+
Balance PRO	8	7	8	8	6	8	6	5	N	5	N	N	2
Radius	9	9	8	9	9	9	6	5	N	5	3	N	2
Simazine	8	7	4	8	8	7	6	4	N	6	4	6	0
..... See Table 13 for maximum grass sizes													
<i>Postemergence</i>													
Accent or Celebrity Plus	8+	5	8	8+	8+	8+	8	9	8+	7	6	8+	1+
Basis	8	6	5	8	8	7+	6	8	4	5	4	4	2
Beacon	4	4	N	6	5	7+	6	9	7+	5	6	8	2
Equip	8+	5	5	8	7	8	7	9	8	7+	4	8	2
Option	8+	5	6	8+	8	8+	7	9	8+	8	N	8	2
Steadfast	8+	6	7	8+	8	8+	8	9	8	6	5	8	2
Steadfast ATZ	8+	7	7	8+	8	8+	8	9	8	6	5	8	2
Impact	7	7	5	7+	7	6	N	N	N	N	N	N	1
Lightning ^a	8	7+	8+	8+	8	8	8	9	7	5	6	5	1+
Atrazine + oil	7	5	6	7	7	4	6	N	N	5	7	6	1
Liberty ^b	7	6	8	8	7	8	7	7+	5	6	6	6	1
glyphosate ^{c,d}	9	9	9	9	9	9	9	9	9	8+	7	8+	1
Spirit	N	N	N	4	4	4	4	8+	6	N	5	6	1+
NorthStar	N	N	N	4	4	4	4	8+	6	N	5	6	1+
Permit	N	N	N	N	N	N	N	N	N	N	9	N	1
Yukon	N	N	N	N	N	N	N	N	N	N	9	N	1+
Laddok S-12	N	N	N	N	N	N	N	N	N	N	8	N	1
Callisto	N	7	N	N	N	N	N	N	N	N	N	N	1+

9 = excellent, 8 = good, 7 = fair, 6 = poor, 5 or 4 = unsatisfactory, N = no control or not labeled. Boldface indicates acceptable control.

Corn response: 0 = minimal, 1 = possible, 2 = probable, 3 = serious.

^aUse only with Clearfield (CL) corn hybrids.

^bUse only with Liberty Link (glufosinate-resistant) corn hybrids.

^cUse only with glyphosate-resistant corn hybrids.

^dSee Table 8 for a listing of glyphosate formulations registered for use on glyphosate-resistant corn hybrids.

Table 13. Corn “post-grass” herbicides: Maximum weed sizes

Herbicide	Rate/A	Annual grasses										Perennial weeds					
		Barnyardgrass	Corn ^a , volunteer	Crabgrass	Cupgrass, woolly	Foxtail, giant	Foxtail, yellow	Panicum, fall	Sandbur	Shattercane	Signalgrass, broadleaf	Johnsongrass, seedling	Johnsongrass	Quackgrass	Nutsedge, yellow	Thistle, Canada	Wirestem, muhly
<i>Maximum size (height or length of lateral) in inches for given rate.</i>																	
Accent	⅓ oz	4	—	—	4	4	4	4	3	12	2	12	18	10	—	—	—
Basis	⅓ oz	2	—	—	1	2	2	2	—	4	—	—	—	—	—	—	—
Beacon	0.76 oz	—	—	—	—	2*	2*	2	4*	12	—	12	16	8	4*	9*	—
Callisto	3.0 fl oz	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Celebrity Plus	4.7 oz	4	—	—	4	4	4	4	3	12	2	12	18	10	—	—	—
Equip	1.5 oz	4	—	2	2	3	3	3	2	8	2	8	8	6	—	3	6
Impact	0.75 fl oz	4	—	3	3*	4	3*	3*	—	—	3*	4*	—	—	—	6*	—
NorthStar	5.0 oz	—	—	—	—	3*	3*	3*	4*	12	—	12*	16*	8*	4*	6*	—
Option	1.5 oz	4	—	2	2	3	3	3	2	12	3	8	16	10	—	—	10
Resolve	1 oz	2	—	½	1	2	2	2	—	4	2*	2*	—	2*	2*	3*	—
Spirit	1.0 oz	—	—	—	—	—	3*	—	—	12	—	12*	16*	8*	—	9*	—
Steadfast	0.75 oz	4	—	1	3	4	4	4	2	6	2	12	12	8	4*	4*	4*
Steadfast ATZ	14 oz	4	—	1	3	4	4	4	2	6	3	8	12	8	4*	4*	4*
Herbicides requiring specially designated corn hybrids																	
Liberty (LL)	28 fl oz	—	—	—	4	3	—	2	—	—	2	2	—	—	—	—	—
	34 fl oz	4	12	4 ^b	8	8	4 ^b	4	3 ^b	8	5	8	—	—	—	—	—
Lightning (CL)	1.28 oz	3	12	3	3	6	3	3	1	8	8	8	8*	3*	3*	3*	—
glyphosate ^c	0.75 lb a.e.	6	20	12	12	20	20	12	12	20	6	18	12	8	6	—	> 8
(RR)	1.13 lb a.e.	9	20	12	12	20	20	12	12	20	9	24	12	8	6	—	> 8

— = Maximum size not specified on label.

* Suppression or partial control.

^a Volunteer corn that is not resistant to the herbicide.^b Prior to tillering.^c Table 8 lists glyphosate formulations registered for use on glyphosate-resistant corn hybrids. Maximum weed heights listed above are from the Roundup Weathermax label. Check individual glyphosate labels for maximum weed heights.

Table 14. Corn herbicides: Broadleaf weed-control ratings

Herbicide	Burcucumber	Cocklebur	Jimsonweed	Kochia	Lambsquarters	Morningglories, annual	Nightshade, eastern black	Pigweeds	Ragweed, common	Ragweed, giant	Sida, prickly	Smartweeds	Sunflower, wild	Velvetleaf	Waterhemp	Corn response
<i>Soil-applied</i>																
Atrazine ^a	6	8	9	9	9	8+	9	9	9	8	9	9	8	7	9	0
Balance PRO	7	4	8	8+	9	4	8+	9	9	6	7	8	6	9	9	2
Callisto	N	4	8	6	9	6	9	8+	7	7	7	8+	8	9	9	0
Hornet WDG	N	8	8	8+	9	7	7+	9	8+	7+	7+	8+	9	8+	N	1
Marksman	6	8	8	7	9	8	8	9	9	7+	7	9	8	8	9	2+
Python ^b	N	7	7+	8+	8+	5	7+	9	7+	5	8	8+	7+	8	N	1
Simazine ^a	6	8	9	9	9	8	9	9	9	7	9	9	8	7	8+	0
..... See Table 15 for maximum weed sizes.....																
<i>Postemergence</i>																
Contact																
Aim	N	6	6	8	8	8	8+	8+	6	4	7	5	4	9	7	2
Atrazine ^a + oil	8	9	9	9	9	9	9	9	9	8	8+	9	9	8	9	1
Buctril	7	9	9	8+	9	8	9	6	8+	8	4	8+	9	8	6	2
Buctril + atrazine	8+	9	9	9	9	9	9	9	9	9	8	9	9	8+	9	2
Laddok S-12	6	9	9	8	8+	8	8	8+	9	8+	8	9	9	9	8+	1
Liberty ^c	7	9	9	8+	8	8	8+	8	8+	8	8	8+	9	8	8	1
Resource	5	7	7	4	7	5	4	7	7	6	7	5	4	9	7	1+
Plant-growth regulator (PGR)^d																
2,4-D	N	9	7	7	9	9	7	9	9	8+	8	6	8	8	8	2+
Banvel or Clarity	7	9	8+	8+	9	9	8	9	9	9	8	9	8+	8	9	1+
Distinct/Status	7	9	8+	8+	9	9	8	9	9	9	8	9	9	8	9	1+
Marksman	8	9	9	8+	9	9	9	9	9	9	9	9	9	8+	9	1
Stinger	N	9	8	N	N	N	7	N	9	9	N	7	9	N	N	0
HPPD inhibitor																
Callisto + atrazine	N	8+	9	6	9	7	9	9	8	8+	6	9	8	9	9	1+
Impact + atrazine	8	8+	9	8	9	6	9	9	9	8+	6	8	8+	8+	9	1
Acetolactate synthase (ALS)^b																
Accent	7+	6	8	7	5	7	N	8+	4	N	N	8	4	5	N	1+
Basis	N	7	4	7	8	5	N	8+	5	N	N	8	8	8	N	2
Beacon	8+	8	8	8	6	6	8	8+	9	9	7	8	8+	7+	N	2
Equip	8	9	8+	8	8+	6	9	9	8+	8	7	8	9	8	N	2
Lightning ^c	6	9	8+	8	8+	8	9	9	7	7	8	8+	9	8+	N	1+
Option	7	6	8	N	7	6	9	8+	7	6	N	N	8	8	N	2
Permit	5	9	7	7	4	6	4	9	8+	8	7	7+	9	8+	N	1
Spirit	8+	8+	8+	8	7	6	8	8+	9	9	7	8+	9	8	N	1+
Steadfast	5	6	7	6	6	6	N	8+	5	N	N	8	7	7	N	2
Steadfast ATZ	6	8	8	7	9	7	7+	9	8+	7+	6	9	8	8	7	2

Table 14. Corn herbicides: Broadleaf weed–control ratings (cont.)

Herbicide	Burcucumber	Cocklebur	Jimsonweed	Kochia	Lambsquarters	Morningglories, annual	Nightshade, eastern black	Pigweeds	Ragweed, common	Ragweed, giant	Sida, prickly	Smartweeds	Sunflower, wild	Velvetleaf	Waterhemp	Corn response
ALS + PGR																
Celebrity Plus	8	8+	8+	8+	8+	8+	8	9	8+	8	7	9	8	7	9	1+
Hornet	5	9	8	7	7	7	7	8	9	8+	7	8+	9	8+	N	1
NorthStar	8+	9	8+	8+	8+	8	8+	9	9	9	7	9	9	8+	8	1+
Yukon	6	9	8	8	8+	8	7+	9	9	8	7	8	9	8+	8	1+
EPSP																
glyphosate ^{f,g}	7+	9	9	8+	8+	6	8	9	8	8	7	8	9	8	9	1

9 = excellent, 8 = good, 7 = fair, 6 = poor, 5 or 4 = unsatisfactory, N = no control or not labeled. Boldface indicates acceptable control.

Corn response: 0 = minimal, 1 = possible, 2 = probable, 3 = serious.

^aWill not control triazine-resistant weed biotypes.

^bWill not control ALS-resistant weed biotypes.

^cUse only with Liberty Link (glufosinate-resistant) corn hybrids.

^dCrop response ratings increase if an NIS or a COC is added.

^eUse only with Clearfield (CL) corn hybrids.

^fUse only with glyphosate-resistant corn hybrids.

^gSee Table 8 for a listing of glyphosate formulations registered for use on glyphosate-resistant corn hybrids.

For herbicide ratings for tank mixes or premixes, see the component parts:

Premix	Grass	Broadleaf
Bicep II Magnum	Dual II Magnum	atrazine
Bicep Lite II Magnum	Dual II Magnum	atrazine
Bullet	Micro-Tech	atrazine
Degree Xtra	Degree	atrazine
Expert	Dual II Magnum	atrazine + glyphosate
FulTime	TopNotch	atrazine
G-Max Lite	Outlook	atrazine
Guardsman Max	Outlook	atrazine
Halex GT	Dual II Magnum	glyphosate + Callisto
Harness Xtra	Harness	atrazine
Keystone, Breakfree ATZ	Surpass	atrazine
Keystone LA, Breakfree ATZ Lite	Surpass	atrazine
Lexar	Dual II Magnum	atrazine + Callisto
Lumax	Dual II Magnum	atrazine + Callisto
Radius	Define	Balance PRO
SureStart	Surpass	Hornet

Table 15. Corn “post-broadleaf” herbicides: Maximum broadleaf weed sizes

Herbicide (rate)	Burcucumber	Cocklebur, common	Jimsonweed	Kochia	Lambsquarters	Morningglories, annual	Nightshade, eastern black	Pigweeds	Ragweed, common	Ragweed, giant	Smartweeds	Sunflower, wild	Velvetleaf	Waterhemp
<i>Translocated herbicides</i>														
	<i>Maximum size (height) in inches or leaf number (L)</i>													
2,4-D amine ^a (1 pt)	—	6	3*	2*	4	6	2*	4	6	6	2*	2	2	4
Accent (0.67 oz)	3	—	3	—	—	3	—	4	—	—	4	—	—	—
Banvel or Clarity ^a (16 oz)	4	4	4	4	4	4	4	4	4	4	6	2	2	4
Basis (0.33 oz)	—	—	—	—	3	—	—	3	—	—	3	3	3	—
Beacon (0.38 oz)	—	4	4	—	—	—	4	3	6	6	2	6	—	—
Beacon (0.76 oz)	4	4	4	4	1.5*	1.5*	4	4	9	9	4	9	4	—
Callisto (3 fl oz)	—	5	5	5	5	5	5	5	5	5	5	5	5	5
Celebrity Plus (4.7 oz)	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Distinct ^a (4–6 oz)	4	4	4	4	4	4	4	4	4	4	6	2	2	4
Equip (1.5 oz)	4	6	4	3	4	2	4	4	4	4	4	6	4	—
Hornet WDG (3 oz)	—	6	6	2*	2*	2*	2*	2*	6	6	6	6	6	—
Hornet WDG (4 oz)	—	8	8	4*	4*	4*	4*	4*	8	8	8	8	8	—
Lightning ^b (1.28 oz)	—	8	3	3	3	3	3	8	3*	3	3	3	3	—
Marksman ^a (3.5 pt)	4	6	6	6	6	6	6	6	6	6	8	6	6	6
NorthStar (5 oz)	4	6	6	4	4	3*	6	5	9	9	4	9	4	4
Option (1.5 oz)	3	2	3	—	2	3*	4	3	2	3*	—	2	3	—
Permit (0.67 oz)	3*	9	—	3	2*	—	—	3	9	3	2	12	9	—
glyphosate ^{c,d} (0.75 lb a.e.)	12	24	12	12	12	3	6	18	12	12	6	18	6	6
glyphosate ^{c,d} (1.13 lb a.e.)	18	36	18	12	20	6	12	24	18	18	9	18	12	12
Resolve (1 oz)	—	3*	—	3	3*	3*	—	3	3*	—	3*	—	3*	—
Spirit (1 oz)	6	8	6	4	3	4*	5	4	9	9	6	12	6	—
Steadfast (0.75 oz)	4	4*	4	—	4*	4	—	4	—	—	4*	4	4*	2*
Steadfast ATZ (14 oz)	4	4	4	—	4	4	4	4	4	4	4	4	2	4*
Stinger (0.5 pt)	—	5L	5L	—	—	—	4L	—	5L	5L	—	5L	—	—
Yukon (4 oz)	12*	14	4	6	6	6	6	12	12	6	3	15	12	6
<i>Contact herbicides</i>														
Aim EW (0.5 fl oz)	—	—	—	—	3	3L	4	4	—	—	—	—	4	2
Atrazine ^a 4L (2 qt)	—	4*	4	—	6	4	4	6	4	4	4	—	2*	4
Basagran 4S (1.5 pt)	—	6	6	—	—	—	—	—	—	—	6	5	2	—
Basagran 4S (2 pt)	—	10	10	—	2*	4*	—	—	3	6	10	8	5	—
Buctril 2E (1 pt)	—	8	4	—	6	3	6	—	4	4	4	6	3	2
Buctril 2E (2 pt)	4	10	6	2	8	4	6	2	6	6	6	8	5	2
Buctril + Atrazine (1.5 pt)	—	8	4	2	6	3	4	2	4	6	4	8	3	2
Buctril + Atrazine (3.0 pt)	4	12	6	4	12	4	6	4	6	8	8	12	6	6
Impact (0.75 fl oz)	6	8	6	6	6	6*	6	6	6	8	3	8	8	6
Laddok S-12 (1.67 pt)	—	8	6	4	5	4	1	6	4	4	10	6	5	2
Laddok S-12 (2.33 pt)	3	8	8	4	8	6	1	6	5	6	12	8	8	4
Liberty ^e (28 fl oz)	3	3	3	2	2	3	3	2	3	3	3	3	3	2
Liberty ^e (34 fl oz)	8	8	8	6	6	7	8	6	8	8	8	8	6	6
Resource ^f (6 fl oz)	—	—	—	—	3L*	—	—	3L	3L	—	—	—	6L	—

Table 15. Corn “post-broadleaf” herbicides: Maximum broadleaf weed sizes (cont.)

— = Maximum size not specified on label.

* Suppression or partial control.

^aNo sizes given on label; weed sizes here are best estimates.

^bUse only with Clearfield (CL) corn hybrids.

^cUse only with glyphosate-resistant corn hybrids.

^dTable 8 lists glyphosate formulations registered for use on glyphosate-resistant corn hybrids. Maximum weed heights listed above are from the Roundup Weathermax label. Check individual glyphosate labels for maximum weed heights.

^eUse only with Liberty Link (glufosinate-resistant) corn hybrids.

^fThe Resource label indicates maximum weed size by leaf number, “L.”

Table 16. Herbicide label statements: Interactions with organophosphate (OP) insecticides

Corn herbicide	Soil-applied OP insecticides						Foliar OP insecticide, ^a applied	
	Counter 20CR		Thimet	Lorsban	Aztec or Fortress		Days before	Days after
	Furrow	T-Band			Furrow	Band		
<i>nicosulfuron and rimsulfuron</i>								
Accent	No	UCI	UCI	UCI	Yes	Yes	7	3
Basis	No	UCI	UCI	UCI	Yes	Yes	7	3
Steadfast, Steadfast ATZ	No	UCI	UCI	UCI	Yes	Yes	7	3
Celebrity Plus	No	TCI	TCI	TCI	Yes	Yes	7	3
Resolve	No	UCI	UCI	UCI	Yes	Yes	7	3
<i>primisulfuron and prosulfuron</i>								
Beacon	No	UCI	TCI	TCI	TCI	TCI	10	7
NorthStar	No	UCI	TCI	TCI	TCI	TCI	10	7
Spirit	No	UCI	TCI	TCI	TCI	TCI	10	7
<i>flumetsulam</i>								
Hornet WDG, preemergence	No	No	No	TCI ^b	No ^b	TCI	10	10
Python	No	No	No	TCI ^b	No ^b	TCI	—	—
Hornet WDG, postemergence	No	No	No	TCI	TCI	TCI	10	10
SureStart	No	No	No	TCI ^b	Yes	Yes	10	10
<i>imazethapyr and imazapyr</i>								
Lightning ^c	Yes	Yes	Yes	TCI	Yes	Yes	—	—
Pursuit ^c	Yes	Yes	Yes	TCI	Yes	Yes	—	—
<i>thifensulfuron</i>								
Harmony GT XP	No	UCI	UCI	UCI	Yes	Yes	7	3
<i>mesotrione</i>								
Callisto ^d	No	No	Yes	No	Yes	Yes	7	7
Halex GT	UCI	UCI	UCI	UCI	Yes	Yes	7	7
Lexar ^d	No	No	Yes	TCI	Yes	Yes	7	7
Lumax ^d	No	No	Yes	TCI	Yes	Yes	7	7
<i>halosulfuron</i>								
Permit	No restrictions on label							
Yukon	No restrictions on label							
<i>foramsulfuron and iodosulfuron</i>								
Equip	No	No	No	TCI	Yes	Yes	7	7
Option	No	No	No	TCI	Yes	Yes	7	7

No = Do not use this herbicide on corn if this insecticide was previously applied in this manner.

Yes = This herbicide can be applied to corn if this insecticide was previously applied in this manner.

UCI = Using this herbicide on corn if this insecticide was previously applied in this manner may result in unacceptable crop injury.

TCI = Using this herbicide on corn if this insecticide was previously applied in this manner may result in temporary corn injury.

— = No information is available at this time.

^aFoliar-applied OPs include Cygon, Diazinon, DiSyston, Imidan, Lorsban, and Malathion.

^bLorsban, Fortress, or Aztec should not be placed in-furrow if a flumetsulam herbicide is to be soil-applied.

^cUse only Clearfield (CL) corn hybrids.

^dPostemergence applications.

Table 17. Corn “post” herbicides: Adjuvant use plus application and use restrictions

Herbicide	Adjuvant and nitrogen	Rain-free period (hr)	Reentry interval (hr)	PHI (days)	Apply broadcast up to	Use drop nozzles
2,4-D amine	None	6–8	48	7	8"	8" to tassel
2,4-D ester	None	1–2	12	7	8"	8" to tassel
Accent	COC or NIS + NH ₄	4	4	30	20"/V6	20" to 36"/V10
Aim EW	NIS or COC ^a	6	12	—	V8	V8 to V14
Atrazine	COC	1–2	12	21	12"	
Banvel	NIS ^a or NH ₄ ^a	4	24	—	24" ^b to 36"	Reduces drift
Basagran	COC + NH ₄	4	12	12	Any size?	
Basis	NIS or COC + NH ₄	4	4	30	6"/V2	
Beacon	COC or NIS + NH ₄	4	12	45	4" to 20"	Splits 20" to tassel
Buctril	COC ^d or NIS ^d	1	12	45	pretassel	
Buctril + atrazine	COC ^d or NIS ^d	1	12	45	12"	
Callisto	COC + NH ₄	1	12	45	30"/8-leaf	
Celebrity Plus	NIS + NH ₄	4	12	72/32	4" to 20"/V6	20" to 24"
Clarity	NH ₄ + COC ^{a, e} or NIS ^a	4	12	—	24" ^b to 36"	Reduces drift
Distinct	NIS + NH ₄	4	12	72/32	4" to 24"	24" to 36"
Equip	MSO + NH ₄	2	12	70/45	V4	V4 to V8
Halex GT	NIS + AMS	1	24	45	30"/V8	
Harmony GT XP	COC or NIS + NH ₄	1	4	30	16"/V5	
Hornet WDG	NIS, MSO, or COC, ± NH ₄ if dry	2	48	85	20"/V6	20" to 36"
Impact	MSO or COC + NH ₄	1	12	45	See PHI.	
Laddok S-12	COC + NH ₄	4 ^c	48	21	12"	
Liberty ^f	AMS only	4	12	70/60	24"/V7	24" to 36"
Lightning ^g	NIS + NH ₄	1	12	45	20"/V6	20" to PHI
Marksman	NIS or NH ₄	4	48	—	5-leaf or 8"	
NorthStar	COC ^h or NIS + NH ₄	4	12	60/45	4" to 20"/V6	20" to 36" ^b
Option	MSO + NH ₄	2	12	70/45	V6	V6 to V8
Permit	COC or NIS + NH ₄	4	12	30	layby (36")	
Pursuit ^g	COC or NIS + NH ₄	1	12	45	See PHI.	
Resource	COC + NH ₄	1	12	28	2- to 10-leaf	
glyphosate ^{i, j}	See label ^k (AMS optional)	1–2	4	7/50	30"/V8	30" to 48" ^l
Resolve	COC or NIS + NH ₄	4	4	30	12"/V6	
Sencor	NIS or NH ₄	—	12	60	pretassel	See tank-mix partner.
Shotgun	None	4	12	21	8"/4-leaf	8" to 12"
Spirit	COC or NIS + NH ₄	4	12	60/40	4" to 20"/V6	20" to 24"/< tassel
Status	COC or NIS + NH ₄	4	24	72/32	36"/V10	
Steadfast	COC or NIS + NH ₄	4	4	30	20"/V6	
Steadfast ATZ	COC or NIS + NH ₄	4	12	60	12"/V6	
Stinger	NIS optional	6	12	40	24"	
Yukon	NIS or COC, ± NH ₄	4	12	30	24" or 36" ^b	Reduces drift
<i>Harvest-aid use</i>						
2,4-D	None	6–8	48	—	After dent	
glyphosate	See label ^k (AMS optional)	1–2	4	7	After black layer	
Gramoxone Inteon	NIS	½	24	7	After black layer	

COC = crop-oil concentrate, NIS = nonionic surfactant, NH₄ = ammonium fertilizer adjuvant (UAN or AMS), UAN = urea-ammonium nitrate (28-0-0), AMS = ammonium sulfate (spray grade 21-0-0), PHI = preharvest interval for grain harvest, shorter for silage, — = no information is available at this time.

Table 17. Corn “post” herbicides: Adjuvant use plus application and use restrictions (cont.)

- ^a Allowed if arid or droughty conditions exist at application.
^b Up to 24 inches if nearby soybeans are more than 10 inches tall or are blooming.
^c Current label indicates rainfall soon after application may decrease the effectiveness.
^d Adjuvants allowed if injury is acceptable.
^e Use of oils (penetrants) may cause injury “if corn is > 5 inches tall.”
^f Use only with Liberty Link (glufosinate-resistant) corn hybrids.
^g Use only with Clearfield (CL) corn hybrids.
^h COC allowed only up to 12-inch-tall corn.
ⁱ Use only with glyphosate-resistant corn hybrids.
^j Table 8 lists glyphosate formulations registered for use on glyphosate-resistant corn hybrids. Consult individual glyphosate labels for information on other glyphosate formulations.
^k Some glyphosate formulations contain surfactants. Consult individual glyphosate labels for adjuvant use.
^l POST-directed applications in glyphosate-resistant hybrids are labeled only for certain hybrids.

Table 18. Soybean herbicides: Preplant or preemergence rates per acre

Herbicide	Unit	1% OM sandy loam ^a	1–2% OM silt loam ^b	3–4% OM silty clay loam ^c	5–6% OM silty clay ^c
Authority First/Sonic 70DF	oz	6.45	6.45	8	8
Authority MTZ	oz	12–14	14–16	16–18	18–20
Boundary 6.5EC	pt	No	1.8–2.1	2.4–2.7	2.4–3.0
Canopy 75DG	oz	2.25–6	2.25–6	2.25–7	2.25–7
Canopy EX 29.5WDG	oz	1.1–3.3	1.1–3.3	1.1–3.3	1.1–3.3
Command 3ME	pt	2.00	2.00	2.67	2.67
Define 4SC	fl oz	8–10	10–12	10–14	10–14
Dual II Magnum 7.64EC	pt	1.0	1.33	1.67	2.0
Extreme 2.17L	pt	3.0	3.0	3.0	3.0
FirstRate 84WDG	oz	0.6	0.6	0.75	0.75
IntRRo 4EC	qt	2.0	2.25	2.75	3.0
Linex 4L	pt	1.0–1.25	1.0–2.0	2.0	2.0
Micro-Tech 4ME	qt	2.0	2.25	2.75	3.0
Outlook 6EC	fl oz	12–14	14–16	18–21	18–21
Partner 65DF	lb	3.0	3.5	4.0	4.5
Pendimax or Prowl 3.3EC	pt	1.5	2.0	3.6	3.6
Prefix 5.3EC	pt	2.0	2.0–2.5	2.5	2.5
Prowl H ₂ O 3.8CS	pt	1.5	2.5	3.0	3.0
Pursuit 2AS	fl oz	4.0	4.0	4.0	4.0
Pursuit 70DG	oz	1.44	1.44	1.44	1.44
Pursuit Plus 2.9EC	pt	2.5	2.5	2.5	2.5
Python 80WDG	oz	0.80	1.00	1.25	1.33
Scepter 70DG	oz	2.8	2.8	2.8 ^{e,f}	2.8 ^{e,f}
Sencor 75DF	lb	No ^d	0.50	0.75	1.00
Sequence 5.25L	pt	2.5–3.5	3.5–4.0	4	4
Treflan 4EC	pt	1.0	1.5	2.0	2.0
Valor SX 51WDG	oz	2.0–2.5	2.0–2.5	2.5	3.0

OM = percent organic matter in the soil.

^aCharacteristic of most sandy soils in Illinois.

^bCharacteristic of many Illinois soils south of Interstate 70.

^cCharacteristic of “prairie soils” in northern Illinois.

^dMay cause excess crop injury on these soils.

^eCarryover injury to corn may occur on these soils unless Clearfield (CL) corn hybrids are planted.

^fMay not be suitable on these soils.

Table 19. Soybean herbicides (soil- or foliar-applied): Grass and nutsedge control ratings

Herbicide	Annuals								Perennials				Volunteer crops		Soybean response
	Barnyardgrass	Crabgrass	Cupgrass, woolly	Foxtail, giant	Foxtail, yellow	Panicum, fall	Sandbur	Shattercane	Johnsongrass	Muhly, wirestem	Nutsedge, yellow	Quackgrass	Cereals, volunteer (wheat, oats, rye)	Corn, volunteer	
<i>Soil-applied</i>															
Define*	8+	8	6	8	8	8	5	4	N	N	4	N	N	N	1
Dual II Magnum	9	9	7	9	9	9	6	5	N	N	8	N	N	N	1
Outlook	9	9	7	9	9	8+	6	5	N	N	7+	N	N	N	1
IntRRo	9	9	7	9	9	9	6	5	N	N	7+	N	N	N	1
Command 3ME	9	8+	7	9	8+	9	7	7	N	N	N	N	9	5	1
Pendimax/ Prowl	9	9	8+	9	9	9	8	7+	N	N	N	N	6	5	1+
Trifluralin	9	9	8+	9	9	9	8+	8	N	N	N	N	6	6	1+
..... See Table 20 for maximum grass sizes.....															
<i>Postemergence</i>															
Assure II	8+	8+	8	9	7	9	9	9	9	7	N	8+	9	9	0
Extreme ^a	9	9	9	9	9	9	9	9	9	8+	7	8+	9	9	1+
FirstRate	N	N	N	N	N	N	N	N	N	N	7	N	N	N	1
Fusilade DX	8+	8	8	8+	8	8+	8+	9	9	8+	N	8+	9	9	0
Fusion	9	8+	8	9	9	9	8+	9	9	7	N	7	9	9	0
Poast Plus	9	9	9	9	9	9	9	8+	7+	7	N	7	7	8	0
Select/SelectMax	9	9	9	9	9	9	9	9	9	8	N	8	7	9	0
Pursuit	7	7	5	8	7	7	6	8+	5	N	5	N	5	5	1+
Raptor	7	7	5	8+	8	8	7	9	6	N	5	N	6	7	2
glyphosate ^{a,b}	9	9	9	9	9	9	9	9	9	8+	7	9	9	9	0
Basagran	N	N	N	N	N	N	N	N	N	N	8	N	N	N	1
Classic	N	N	N	N	N	N	N	N	N	N	7+	N	N	6	1+

9 = excellent, 8 = good, 7 = fair, 6 = poor, 5 or 4 = unsatisfactory, N = no control or not labeled. Boldface indicates acceptable control.

Soybean response: 0 = minimal, 1 = possible, 2 = probable, 3 = serious.

*Expect only early-season weed control on medium- and fine-textured soils.

^aUse only with glyphosate-resistant soybean varieties.

^bTable 8 lists glyphosate formulations registered for use on glyphosate-resistant soybean varieties.

Table 20. Soybean “post-grass” herbicides: Maximum grass sizes

Herbicide	fl oz/A	Annuals										Perennials ^a				
		Barnyardgrass	Corn ^d , volunteer	Crabgrass	Cupgrass, woolly	Foxtail, giant	Foxtail, yellow	Panicum, fall	Sandbur	Shattercane	Signalgrass, broadleaf	Wheat, volunteer	Johnsongrass, seedling	Johnsongrass, rhizome	Quackgrass	Muhly, wirestem
<i>Maximum grass size in inches for given rate.</i>																
Assure II	5–8 ^b	6 ^c	30	6 ^c	—	8	4 ^c	6	6	12	—	6	8	—	—	8
	10–12	—	—	—	—	—	—	—	—	—	—	—	—	24	10	8
Fusion	6–8 ^b	—	24	—	—	8	4	—	—	12	—	—	8	—	—	—
	8–10 ^b	4	—	4	4	8	4	6	4	—	4	6	—	12 ²	10 ²	—
	10–12 ^b	—	—	—	—	—	—	—	—	—	—	—	—	18 ¹	10 ¹	12
Fusilade DX	6–8	—	24	—	—	—	—	—	—	12	—	6	8	12 ²	10 ²	—
	10–12 ^b	3	—	2	4	6	4	6	4	—	4	—	—	18 ¹	10 ¹	12
Poast Plus	12	4	12	—	—	4	—	4	—	—	—	—	—	—	—	—
	24–30	8	20	6	8	8	8	8	3	18	8	—	8	12 ²	8 ²	—
	36	12	—	8	—	16	16	12	—	—	12	4	—	25 ¹	8 ¹	6
Pursuit	4	3*	—	3*	3*	6	3	*	—	8*	8*	—	8	12*	—	—
Raptor	5	5*	8	4*	4*	6	6	6	—	8	5	4	8	12*	8*	—
Select	4–5	4	12	4	—	4	4	4	—	10	4	—	6	—	—	—
	6–8	8	24	6	8	12	8	8	6	18	6	6	10	18 ²	—	—
	8–16	—	—	—	—	—	—	—	—	—	—	—	—	24	12	8
Herbicides requiring glyphosate-resistant soybean varieties																
<i>Maximum grass size in inches for given rate.</i>																
glyphosate ^e	0.56 lb a.e.	3	12	6	6	12	12	4	12	12	3	6	12	12	8	> 8
	0.75 lb a.e.	6	20	12	12	20	20	12	12	20	6	12	18	12	8	> 8
	1.13 lb a.e.	9	20	12	12	20	20	12	12	20	9	18	24	12	8	> 8
Extreme	3.0 pt	6	—	12	12	18	18	12	—	18	8	18	12	12	—	—

— = Maximum size not specified on label.

*Suppression or partial control.

^aPerennials usually require sequential applications for satisfactory control. See the label for more information.

^bUse higher rate if tank-mixed with broadleaf herbicide, if the weather is dry, or if weeds have reached maximum size.

^cFor best results on these grasses, do not tank-mix with a broadleaf herbicide.

^dVolunteer corn that is not resistant to the herbicide.

^eTable 8 lists glyphosate formulations registered for use in glyphosate-resistant soybeans. Maximum weed heights listed above are from the Roundup Weathermax label. Check individual glyphosate labels for maximum weed heights.

¹Only one application is required.

²Two applications are required.

Table 21. Soil-applied soybean herbicides: Broadleaf weed–control ratings

Herbicide	Burcucumber	Cocklebur, common	Jimsonweed	Kochia	Lambsquarters	Morningglories, annual	Nightshade, eastern black	Pigweeds	Ragweed, common	Ragweed, giant	Sida, prickly	Smartweeds	Sunflower, wild	Velvetleaf	Waterhemp	Soybean response
<i>Soil-applied "grass"</i>																
Define*	N	N	4	N	5	N	5	6	4	N	N	N	N	N	6	1
Dual II Magnum	N	N	4	N	6	N	8	8	5	N	N	N	N	N	7+	1
Outlook	N	N	4	N	6	N	8	8	5	N	N	N	N	N	7+	1
IntRRo	N	N	4	N	6	N	8	8+	5	N	N	N	N	N	7+	1
Pendimax/Prowl	N	N	N	7+	8	N	N	8+	N	N	N	4	N	6	8	1+
Trifluralin	N	N	N	7+	8+	N	N	8+	N	N	N	4	N	N	8	1+
<i>Soil-applied "broadleaf"</i>																
Command 3ME	N	6	8	9	8+	N	5	5	8	5	8+	8	4	9	5	1
Sencor ^a	N	6	7+	8	9	N	N	9	8+	5	8	9	6	8	8	2
Canopy	7	8+	7+	7+	9	7+	N	9	8+	7+	7	9	8	8+	5	2
Canopy EX ^b	7	8+	7+	7	9	7+	N	9	8+	7+	7	9	7+	8	N	1
Python ^b	N	7	8	8+	8+	6	7+	9	7+	5	8	8	7	8	N	1
FirstRate ^b	—	8+	8+	8	8+	8	4	8+	9	8	7	8	9	8	N	1
Linex ^a	N	6	5	6	8+	4	6	9	8	5	7	7	N	6	7	2
Pursuit ^b	5	7	7	8	8	7+	9	9	7	6	8	8+	8	8	N	1
Scepter ^b	7	9	8	5	9	7	8	8+	8+	8	8+	8+	9	7	N	1
Valor SX	N	4	7+	7+	8+	7	8+	8+	8	4	8	7	N	7+	8+	1+

9 = excellent, 8 = good, 7 = fair, 6 = poor, 5 or 4 = unsatisfactory, N = no control or not labeled, — = no information is available at this time. Boldface indicates acceptable control.

Soybean response: 0 = minimal, 1 = possible, 2 = probable, 3 = serious.

*Expect only early-season weed control on medium- and fine-textured soils.

^aWill not control triazine-resistant weed biotypes.

^bWill not control ALS-resistant weed biotypes.

For herbicide ratings for tank mixes or premixes, see the component parts:

<u>Premix</u>	<u>Grass</u>	<u>Broadleaf</u>
Authority First/Sonic	—	Authority + FirstRate
Authority MTZ	—	Authority + Sencor
Boundary	Dual Magnum	Sencor
Extreme	glyphosate	Pursuit
Gangster	—	Valor + FirstRate
Prefix	Dual Magnum	Reflex
Pursuit Plus	Prowl	Pursuit
Sequence	Dual Magnum	glyphosate
Valor XLT	—	Valor + Classic

Table 22. "Post-broadleaf" soybean herbicides: Weed-control ratings

Herbicide	Burcucumber	Cocklebur, common	Jimsonweed	Kochia	Lambsquarters	Morningglories, annual	Nightshade, eastern black	Pigweeds	Ragweed, common	Ragweed, giant	Sida, prickly	Smartweeds	Sunflower, wild	Velvetleaf	Waterhemp	Soybean response
<i>Contact-postemergence</i> See Table 23 for maximum weed sizes.....																
Basagran	N	9	9	7	7	5	N	N	7	7	8	9	8+	8+	N	1
Storm	6	8+	9	6	6	7+	7	9	8+	7+	7	9	7	7+	8+	2
Ultra Blazer	7	7	9	6	5	8	8+	9	8+	8	N	8+	6	6	8	2
Cobra	7	8+	9	7	6	7+	8+	9	9	8+	6	5	8	7	8+	2+
Phoenix	6	8	8+	6	5	6	8	8+	8+	8	5	5	7	6	8	1+
Reflex	6	7	8+	5	5	8	8	9	8	8	N	7+	7	6	7+	1+
Flexstar	7	8	9	6	6	8	8	9	8+	8+	N	8	7	8	8	2
Resource	5	7	7	4	7	5	4	7	7	6	7	5	4	9	7	1+
<i>Systemic-postemergence</i> See Table 23 for maximum weed sizes.....																
Acetolactate synthase (ALS)^a																
Classic	8	9	8+	4	4	7	N	8+	8	7	N	8	9	8	N	1+
Harmony GT XP	N	6	6	5	8+	4	N	9	5	4	N	8+	6	8	N	2+
Synchrony XP ^b	8	9	8+	6	8+	7+	N	9	8	7+	N	9	9	8+	N	1
FirstRate	6	9	9	5	N	8	N	5	9	9	4	8+	9	8+	N	1
Pursuit	5	8+	8	7	6	7	8+	9	7	7	6	8+	8	8+	N	1+
Raptor	6	8+	8	7+	8	7+	9	9	7	8	6	8+	9	8+	N	2
Scepter	N	9	4	4	N	N	5	9	5	N	N	6	8	N	N	1
EPSP																
glyphosate ^{c,d}	8	9	9	8+	8+	7	8	9	8	8+	7	8	9	8	9	0
ALS + EPSP																
Extreme ^c	8	9	9	8+	8+	7	9	9	8	8+	7	8+	9	8+	8+	1+

9 = excellent, 8 = good, 7 = fair, 6 = poor, 5 or 4 = unsatisfactory, N = no control or not labeled. Boldface indicates acceptable control.

Soybean response: 0 = minimal, 1 = possible, 2 = probable, 3 = serious.

^aWill not control ALS-resistant weed biotypes.

^bUse only with STS-designated soybean varieties or at 0.375 oz/A on non-STS soybeans.

^cUse only with glyphosate-resistant soybean varieties.

^dSee Table 8 for a listing of glyphosate formulations registered for use on glyphosate-resistant soybean varieties.

Table 23. Soybean “post-broadleaf” herbicides: Maximum weed sizes and application rates

Herbicide	Rate	Burcucumber	Cocklebur, common	Jimsonweed	Kochia	Lambsquarters ^a	Morningglories, annual	Nightshade, eastern black	Pigweeds	Ragweed, common	Ragweed, giant	Sida, prickly	Smartweeds	Sunflower, wild	Velvetleaf	Waterhemp
<i>ALS translocated^b</i>	oz/A Label weed height in inches														
Classic 25DF	0.50	—	6	4	—	—	2 ^c	—	2	—	—	—	2	5	—	—
Classic 25DF	0.75	6 ^c	12	6	—	—	4 ^c	—	4	4	6	—	4	8	6	—
FirstRate 84WDG	0.30	6 ^c	10	4	—	—	4	—	—	8	10	—	6	12	6	—
Harmony GT XP 75DF	0.083	—	6 ^c	4 ^c	—	4	—	—	8	—	—	—	6	6 ^c	6	—
Pursuit 70DG	1.44	—	8	3	3	2 ^c	2	3	8	3 ^c	3 ^c	—	3	3	3	—
Raptor 1S	4-5	—	8	6	4	5	4	5	8	5 ^c	5 ^c	4 ^c	5	8	8	—
Scepter 70DF	1.40	—	8	—	—	—	—	—	4	—	—	—	—	4	—	—
Synchrony XP	0.75	6 ^c	8	5	3 ^c	4	3	—	8	4	4	—	8	8	8	—
<i>Other translocated</i>																
Extreme (RR)	3.0 pt	12	18	6	12	8	4	12	18	9	9	—	6	18	5	12
glyphosate ^d (RR)	0.75 lb a.e.	12	24	12	12	12	3	6	18	12	4	—	6	18	6	6
glyphosate ^d (RR)	1.13 lb a.e.	18	36	18	12	20	6	12	24	18	6	—	9	18	12	12
<i>Contact</i>	pt/A Label weed height in inches														
Basagran	1.0	—	4	4	—	1 ^c	—	—	—	—	—	—	4	3	2	—
Basagran	2.0	—	10	10	—	2 ^c	4 ^c	—	—	3	6	4	10	8	6	—
Ultra Blazer	1.0	—	—	4	—	—	2	<2	<4	2	<2	—	4	—	—	<4
Ultra Blazer	1.5	—	2 ^c	6	—	2 ^c	4	2	4	3	3	—	6	—	—	4
Storm	1.5	—	6	6	—	2 ^c	2	2	3	3	6	2	6	—	2	3
Cobra	0.5	—	4L	4L	—	—	—	4L	6L	6L	4L	—	—	—	—	6L
Cobra	0.78	4L	6L	4L	8L	—	2-4L ^e	6L	6L	8L	6L	4L	4L ^c	2L	4L ^c	6L
Phoenix	0.5	—	—	2	—	—	—	2	3	4	3	—	—	—	—	4
Phoenix	0.78	4	4	4	2	—	4	4	5	6	4	2	—	2	—	6
Flexstar	1.25	—	6L	8L	—	2L ^c	3-4L ^e	6L	6L	6L	6L	2L	6L	2L	4L	4L
Reflex	1.25	—	2L	6L	—	2L ^c	2-4L ^e	4L	4L	4L	4L	—	4L	—	2L	2L
Resource	0.38	—	—	—	—	3L ^c	—	—	3L	4L	—	3L	—	—	8L	—
Resource	0.50	—	3L ^c	4L	—	3L ^c	—	—	4L	6L	—	4L	—	—	10L	—

— = No information is available at this time.

^aLambsquarters control is erratic with many herbicides.

^bALS-resistant biotypes are not controlled by ALS herbicides.

^cSuppression or partial control only; may need supplemental control, as with split applications.

^dTable 8 lists glyphosate formulations registered for use on glyphosate-resistant soybean varieties. Maximum weed heights listed above are from the Roundup Weathermax label. Check individual labels for maximum weed heights.

^eSize varies with morningglory species.

Table 24. Soybean “post” herbicides: Adjuvant use plus application and use restrictions

Herbicide	Adjuvants and nitrogen	Rain-free period (hr)	Reentry interval (hr)	Preharvest interval (days)	Feed/graze forage
<i>No-till burndown</i>					
2,4-D amine	None	6–8	48	NA	No
2,4-D ester	None	1–2	12	NA	No
Gramoxone Max	COC or NIS	0.5	12	NA	NA
glyphosate	AMS optional	0–2	4–12	NA	NA
<i>Postemergence grass only^b</i>					
Assure II	COC or NIS; NH ₄ optional	1	12	80	No
Fusilade DX	COC or NIS; NH ₄ optional	1	12	Prebloom	No
Fusion	COC or NIS; NH ₄ optional	1	24	Prebloom	No
Poast Plus	COC; NH ₄ optional	1	12	75	Hay?
Select	COC or NIS; NH ₄ optional	1	24	60	No
Select Max	COC or NIS + AMS	1	24	60	No
<i>Postemergence broadleaf, contact</i>					
Basagran	COC; NH ₄ optional	4	48	30	Yes/30 days
Cobra	COC or NIS; check humidity	0.5	12	45	No
Phoenix	NIS or COC	2	12	45	No
Flexstar	MSO or COC + NH ₄	1	24	Prebloom	No
Resource	MSO or COC; NH ₄ optional	1	12	60	No
Storm	COC or NIS or NH ₄	4	48	50	No
Ultra Blazer	COC, NIS, or NH ₄	4	48	50	No
<i>Postemergence broadleaf, systemic^b</i>					
Classic	NIS, COC, or MSO ^a + NH ₄	1	12	60	No
FirstRate	NIS, COC, or MSO + NH ₄	2	12	65	Yes/14 days
Harmony GT XP	NIS or COC ^a + NH ₄	1	4	60	No
Pursuit	MSO, COC, or NIS + NH ₄	1	12	85	No
Raptor	MSO, COC, or NIS + NH ₄	1	4	Prebloom	No
Synchrony XP	NIS or COC + NH ₄	1	12	60	No
glyphosate ^{c, d}	See label ^e (AMS optional)	1–2	4	14	Yes/PHI
Extreme ^c	NIS + NH ₄ ^f	1	48	85	No
<i>Harvest-aid use</i>					
Clarity	NH ₄ + COC or NIS	4	12	14	No
Gramoxone Inteon	NIS or COC	0.5	24	15	No
glyphosate ^d	See label ^e (AMS optional) ^e	1–2	12	7	> 25 days

COC = crop-oil concentrate, MSO = methylated seed oil (specialized VOC), NIS = nonionic surfactant, NH₄ = ammonium fertilizer adjuvant = UAN or AMS; UAN = urea-ammonium nitrate (28-0-0), AMS = ammonium sulfate (spray grade 21-0-0); PHI = preharvest interval.

^aPenetrant adjuvant allowed but reduces crop tolerance.

^bSome tank mixes allow NIS or COC; see the tank-mix partner's label.

^cUse only with glyphosate-resistant soybean varieties.

^dTable 8 lists glyphosate formulations registered for use on glyphosate-resistant soybean varieties. Consult individual glyphosate labels for information on other glyphosate formulations.

^eSome glyphosate formulations contain surfactants. Consult individual glyphosate labels for adjuvant use.

^fSpray-grade AMS is the preferred nitrogen source.

Table 25. Corn “post” herbicides: Perennial broadleaf weed–control ratings

Herbicide	Corn stage	Rate per acre	Artichoke, Jerusalem	Bindweed, field or hedge	Dogbane, hemp	Horsenettle	Milkweed, common	Milkweed, honeyvine (climbing)	Morningglory, bigroot (wild sweet potato)	Pokeweed	Smartweed, swamp (devil’s shoestring)	Thistle, Canada
2,4-D amine	8 in. to tassel ^a	1 pt	7	7	6	6	5	6	6	7	N	6
2,4-D ester	Preharvest	2 pt	8	8	6	7	7	7	7	8	6	7
Banvel, Clarity	8–36 in. ^a	0.5 pt	8	8	5	7	6	6	5	7	7	8
Distinct	10–24 in.	4 oz	9	9	6	7	7	7	6	8	8	8
Stinger	≤ 24 in.	0.5–0.67 pt	9	4	4	5	5	6	4	4	5	9
Hornet WDG	<V6/20 in.	3.0 to 5.0 oz	8	4	4	5	4	5	3	4	4	8
Accent + Banvel ^b	8–24 in. ^a	0.67 oz + 0.5 pt	7	7	7	7	7	8	5	6	6	8
Beacon	Pretassel ^c	0.76 oz	8	5	6	8	6	6	5	7	5	7
Beacon + Banvel ^b	4–24 in. ^d	0.38 oz + 0.5 pt	8	7	7	7	6	6	5	7	7	8
NorthStar	4–36 in. ^c	5 oz	8	6	7	8	6	6	5	8	7	6
Spirit	4–24 in. ^c	1.0 oz	8	5	6	7	6	6	5	7	5	7
Spirit + Banvel ^b	4–24 in. ^d	1.0 oz + 0.5 pt	8	7	7	8	7	6	5	8	7	8
Status	4–36 in.	5–10 oz.	9	9	6	7	7	7	6	8	8	8
Lightning ^e	≤ 20 in. ^c	1.28 oz	8	6	4	5	5	6	4	6	6	6
Permit + Banvel ^b	8–36 in. ^a	0.67 oz + 0.5 pt	7	6	7	8	8	6	5	8	7	8
glyphosate ^f	Pretassel	1–2% solution	8	8	8	8	8	7	6	8	8	9
glyphosate ^{g,h}	≤ 30 in.	0.75 lb a.e.	8	7	7	7	7	7	5	6	7	8
Liberty	≤ 24 in.	1.75 pt	7	6	6	6	6	5	N	6	N	5

9 = excellent, 8 = good, 7 = fair, 6 = poor, 5 or less = unsatisfactory, N = no control or not labeled. Boldface indicates acceptable control.

^aUse drop nozzles; do not spray over whorl of corn.

^bUse only NIS as adjuvant.

^cUse drop nozzles with Beacon, NorthStar, Lightning, or Spirit in corn more than 20 inches tall.

^dUse drop nozzles if corn is more than 12 inches tall.

^eUse only with Clearfield (CL) corn hybrids.

^fGlyphosate used as a spot treatment in corn.

^gSee Table 8 for a listing of glyphosate formulations registered for use in glyphosate-resistant corn hybrids.

^hUse only with glyphosate-resistant corn hybrids.

Table 26. Soybean “post” herbicides for partial control or suppression of perennial weeds

Herbicide	Artichoke, Jerusalem	Bindweed, field or hedge	Dock, curly	Dogbane, hemp	Horsenettle	Milkweed, common	Milkweed, honeyvine (climbing)	Morningglory, bigroot	Nutsedge, yellow	Pokeweed	Smartweed, swamp	Thistle, Canada
glyphosate ^{a,c} 0.56 lb a.e.	8	7	6	7	7	7	7	5	6	8	7	8
glyphosate ^{b,c} 1–2%	8	8	7	8	8	8	7	6	7	9	8	9
Classic ^d	7	7	6	N	5	6	7	N	7+	6	N	7
Synchrony XP ^e	7	7	6	N	5	7	7	N	7+	6	N	7
Pursuit	8	N	6	N	7	N	N	N	6	N	N	6
Extreme ^a	8	7	6	7	7	7	7	5	6	8	7	8
Raptor	8	6	N	N	N	N	N	N	6	N	N	7
Basagran ^d	7	5	N	N	5	N	N	N	8	N	N	8
Ultra Blazer ^f	6	6	N	N	6	6	N	5	N	N	N	6
Cobra ^g	6	6	N	N	6	6	N	6	N	N	6	6
Flexstar	6	6	N	N	6	N	6	N	5	N	N	6
FirstRate	N	N	N	N	N	N	N	N	7	N	N	7

9 = excellent, 8 = good, 7 = fair, 6 = poor, 5 or less = unsatisfactory, N = no control or not labeled. Boldface indicates acceptable control.

^aUse only with glyphosate-resistant soybean varieties.

^bSpot treatment with glyphosate solutions on a spray-to-wet basis before bloom stage.

^cSee Table 8 for a listing of glyphosate formulations.

^dUse either the high rate or a split application for this degree of control.

^eUse only with STS (sulfonylurea-tolerant) soybean varieties at rates greater than 0.375 oz/A.

^fLabel specifies high rate and favorable environmental conditions required for suppression.

^gLabel specifies the use of COC and a maximum of 6-leaf stage for suppression.