

Soybean

Preplant Foliar and Preplant Incorporated

Preplant Vegetative Burndown

If planting is delayed after seedbed preparation or in no-till plantings, you may need to apply a “burndown” herbicide to kill emerged weeds before planting or soybean emergence. This procedure helps when you want to plant on time and do not want to rework a seedbed to conserve moisture.

You can remove vegetation before planting in several ways. Regardless of the method you select, it is important to kill existing vegetation before soybean emergence. Total kill is extremely important, especially if cultivation will not be a part of the weed control program.

Some of the more common ways to kill existing vegetation include the following:

1. Disk, chisel, or use a field cultivator before planting.
2. Apply a preplant foliar herbicide before planting or before crop emergence.
3. Apply a residual herbicide that also has postemergence activity.
4. Use combinations of preplant foliar herbicides plus a residual herbicide (a combination of items 2 and 3).

Currently, there are several preplant foliar herbicides. It is important to select a herbicide treatment for the existing weed problems. Use a herbicide rate and adequate spray coverage to provide control.

Sometimes it is beneficial to combine two or more herbicides to control a variety of emerged weeds and provide preemergence control of weeds that may emerge later.

Carefully select rates of herbicide combinations. In some cases, you can slightly reduce rates of Gramoxone Max or Boa, when used in combinations, and still provide adequate control. Preemergence herbicides often antagonize grass control from glyphosate, and you must increase rates in tank mixes; this is especially true if difficult-to-

control species are present. Large weeds and heavy weed pressure may make it necessary to apply two treatments. In some cases, you can do this by applying glyphosate, Gramoxone Max, or Boa before planting and follow at or after planting with a second preemergence/postemergence herbicide. The objective is to achieve 100% weed control before crop emergence. Spray coverage problems may occur when using flood-jet-type nozzles. Herbicide labels provide additional information. You should consult the labels for nozzle recommendations and for tank mixing herbicides.

Preemergence/postemergence herbicides. Several of the herbicides used to provide preemergence control of annual weeds also have postemergence activity; some of these include Canopy XL, Sencor, and Scepter. Squadron contains the active ingredient in Scepter and also provides postemergence activity on a few weeds.

The weed response table provides estimated activity ratings. The use of 0.25 percent surfactant in the spray solution is recommended. You may mix these herbicides with Gramoxone Max or Boa for improved postemergence control. If mixed with glyphosate, expect some reduced activity on grassy weeds.

Preplant Incorporated Herbicides

These herbicides are suggested for control of most seedling grasses, including johnsongrass, as well as a variety of broadleaf weeds. Check rating charts and labels for estimated levels of control that a herbicide provides for a given weed problem.

A range of rates is given, with the low rate intended for the coarse-textured, sandy soils and the highest rate for the fine-textured clays. The volume of applications should be from 10 to 20 gallons per acre. Always consult the label for details on soil types, appropriate rates, and restrictions.

Crop, weed, or situation and active chemical per treated land acre

Formulation needed to treat 1 acre broadcast

Time of application

Weeds controlled

Special instructions and remarks

Preplant — Foliar (PPF)

Fallow cultivation

Use several fallow cultivations over a 4- to 6-week period.

Preplant.

Johnsongrass and emerged annual weeds.

Disk-harrow appears more effective than field cultivator when used alone for johnsongrass control. Alternate use of the two implements is equally effective as disking alone and will be more economical. More effective in dry weather than during wet periods. For annual weeds, less frequent and shallow cultivations should be made to conserve fuel and soil moisture.

2,4-D acid equivalent at 0.47 to 0.95 lb

2,4-D—See table below. Apply in 10 to 20 gal water by ground equipment.

7 to 30 days before planting. **See table below.**

Several winter and summer annual, biennial, and perennial broadleaf weeds.

Ester formulations are usually more effective than the amine formulation in controlling dock and wild garlic. Apply the esters when air temperatures are 60 to 80 degrees. Make only one application prior to planting soybeans per growing season. Avoid drift to nontarget species. Adhere to Bureau of Plant Industry regulations for phenoxy herbicides.

Product	Formulation	Use rate (oz)	Preplant interval (days)	
Weedar 64	dimethylamine	16	15	
		32	30	
Weedone LV4	butoxyethyl ester	16	7	
		32	30	
Weedone 638	acid and butoxy ethyl ester	21	7	
		43	30	
Weedone LV6	butoxyethyl ester	11	7	
		21	30	

glyphosate at 0.50 to 2.0 lb

glyphosate 4/5 lb/gal —16 to 64 oz/12.8 to 51.2 oz in 5 to 10 gal water by ground or in 3 to 5 gal water by air. **See table below.**

3 to 7 days before planting.

See below and label for complete list of weeds controlled.

Use of flood-jet nozzles is not suggested. If tillage is intended after treatment, wait at least 3 days (7 days for rhizome johnsongrass) after application. Cultivation before johnsongrass emergence will result in better control after glyphosate application. **Apply a preplant or preemergence herbicide to control late emerging johnsongrass from seed. See label for tank mixes with soil active herbicides.** Rainfall within 6 hours after application may reduce control. Heavy rainfall within 2 hours after application may require repeat treatment to obtain control. **Avoid drift to nontarget species or areas. Do not** use with galvanized (zinc-coated) spray equipment.

Weed and height	4 lb/gal (oz)	5 lb/gal (oz)
Barnyardgrass up to 4 in; morningglory sp. and sicklepod up to 2 in; annual bluegrass, chickweed, corn, horseweed, London rocket, and shepherdspurse up to 6 in; barley, buttercup, cocklebur, crabgrass, Carolina foxtail, seedling johnsongrass, fall panicum, redroot and smooth pigweed, rye, and grain sorghum up to 12 in; and wheat up to 18 in.	16	12.8
Same as above plus sicklepod and broadleaf signalgrass up to 4 in; barnyardgrass up to 6 in; and horseweed up to 12 in.	24	19.2
Same as above plus prickly sida up to 4 in; red rice up to 6 in; goosegrass and Carolina geranium up to 12 in; sowthistle (wild lettuce), common and giant ragweed, P. smartweed, <i>Bromus</i> sp., <i>Panicum</i> sp., sunflower up to 6 in; and rhizome johnsongrass in the boot-to-head stage.	32	25.6
Same as above plus sowthistle (wild lettuce), common and giant ragweed, P. smartweed, <i>Bromus</i> sp., <i>Panicum</i> sp., and sunflower more than 6 in.	48	38.4
Same as above plus ryegrass.	64	51.2

Crop, weed, or situation and active chemical per treated land acre	Formulation needed to treat 1 acre broadcast	Time of application	Weeds controlled	Special instructions and remarks
flumioxazin at 0.032 to 0.08	Valor — 1 to 2.5 oz in 15 gal of water by ground. Always add crop oil concentrate or methylated seed oil at 1qt/A or an 80% active nonionic surfactant at 0.25% (v/v). Additional adjuvant may not be required when tank mixing with products that have been formulated with a suitable adjuvant.	Before, during, or after planting, but before crop emerges.	Several summer and winter annual weeds. Improved control of cutleaf eveningprimrose when tank mixed with glyphosate.	Use with herbicides like glyphosate, paraquat, or 2,4-D to broaden weed control spectrum. Do not apply more than 3 oz of Valor per season. Do not use Valor in soybeans in the same field flufenacet (Axiom/Domain), alachlor (Lasso/Micro-tech), metolachlor (Dual/ Dual Magnum) or dimethenamid (Frontier/Outlook) will be used as injury may occur. Valor at 2 oz/A or more will provide residual control of several weeds.
imazaquin + glyphosate at 0.56 to 0.75 lb	Backdraft — 1.5 to 2 qt with 0.125% v/v nonionic surfactant AND 2.5 lb/A spray grade ammonium sulfate or a nitrogen-based liquid fertilizer at a rate of 1 to 2 qt/A in 10 or more gallons of water by ground and 5 or more gallons by air.	Within 30 days before planting.	Several summer and winter annual weeds.	Must include recommended surfactants. Do not apply by ground when wind speeds are above 10 mph. Read label for special instructions for aerial applications.
oxyfluorfen at 0.1 to 0.5	Delta Goal/Goal 2XL — 0.5 to 2 pt/A in a minimum of 20 gal/A by ground or 5 to 10 gal/A by air. Always include 0.25 to 0.5 % v/v 80% active nonionic surfactant.	See special instructions.	Several winter annual and summer annual weeds including henbit.	Use with herbicides like glyphosate, paraquat, or 2,4-D to broaden weed control spectrum. Do not apply Delta Goal within 7 days prior to planting. Must be incorporated into soil to a depth of at least 2 inches prior to planting unless applied 30 days or more prior to planting and at least three significant (0.25 inches or more) rainfall events have occurred following application. At least 12.8 oz/A are generally needed to achieve residual control. Lower rates will improve the post-emergence control of some weeds but will not offer significant residual weed control.
paraquat at 0.28 to 1.01 lb	Gramoxone Max 3.0E — 0.75 to 2.7 pt in 5 to 10 gal water by air or 20 to 40 gal water by ground. Add 1 to 2 pt/100 gal spray nonionic surfactant.	Before soybeans emerge.	Most small emerged annual weeds.	Apply as broadcast spray to wet weed growth. Use 1.5 pt when applying to 1-3-in. weeds or with Sencor/Lexone, 2 pt to 3-6-in. weeds and 3.0 pt to 6-in. or larger weeds. May be tank mixed with most preemergence herbicides. Do not (1) apply under windy conditions; or (2) graze or feed treated forage to livestock.
sulfentrazone + chlorimuron at 0.113 to 0.14 lb	Canopy XL — 3.2 to 4 oz with 0.25% nonionic surfactant or 1 % v/v crop oil concentrate. Higher rates can be used to control larger weeds or to provide extended residual control.	Within 30 days prior to planting.	Several summer and winter annual weeds. Improved control of cutleaf eveningprimrose and curly dock when mixed with glyphosate.	Use with herbicides like glyphosate, paraquat, or 2,4-D to broaden weed control spectrum. Do not incorporate to a depth deeper than 1 to 2 inches. Do not apply to Black Belt soil with pH >7 or history of nutrient deficiency.

Crop, weed, or situation and active chemical per treated land acre	Formulation needed to treat 1 acre broadcast	Time of application	Weeds controlled	Special instructions and remarks
thifensulfuron at 0.23 to 0.42 oz	Harmony GT — 0.3 to 0.6 oz with 0.25 to 0.5% v/v 80% nonionic surfactant in at least 5 gallons of water by ground or 2 to 5 gallons by air.	Preplant.	Several winter and summer weeds including curly dock and smartweeds.	Use with herbicides like glyphosate, paraquat, or 2,4-D to broaden weed control spectrum.
thifensulfuron + tribenuron at 0.375 to 0.45 oz	Harmony Extra 75DF — 0.5 to 0.6 oz in 10 to 20 gal water by ground or in 3 gal water by aerial equipment. Always add 1% (v/v) petroleum-based crop oil concentrate or 0.25% (v/v) 80% active nonionic surfactant.	Late fall through early spring, but at least 45 days prior to planting.	Several winter and some summer annual broadleaf weeds past the cotyledon stage, but less than 4 in. tall or across. Wild garlic; curly dock.	Use the 0.6-oz rate when weed numbers are high. Thorough coverage of target weeds is essential. Warm temperatures and good soil moisture before, during, and after application are needed for optimum control. Visible symptoms of dying weeds may not appear for 1 to 5 weeks. Do not apply more than 1 oz/A during the fallow cropland season.

Preplant — Incorporated

dimethenamid-P at 0.47 to 0.98 lb	Outlook — 10 to 21 oz in 2 or more gallons of water to obtain ground coverage.	Up to 2 weeks before planting.	Most annual grasses including broadleaf signalgrass and red rice, and small seeded broadleaf weeds.	Uniformly incorporate to a depth of 1 to 2 inches. Poor control of most large-seeded broadleaf weeds. See label for tank mixtures. May cause temporary growth suppression of soybeans with high rainfall and water-saturated soil. Do not use more than 21 oz of Outlook per season.
flumetsulam at 0.80 to 1.06 oz	Python 80WDG — 1.0 to 1.33 oz in 10 to 40 gal water by ground equipment.	From 0 to 30 days before planting.	Broadleaf weeds.	Uniformly incorporate herbicide in top 2-3 inches of soil. Do not (1) apply more than 1.4 oz Python WDG in a year; (2) exceed 0.07 lb flumetsulam per year; (3) apply to soils with a pH of 7.8 or higher; (4) aerially apply.
imazaquin at 0.125 lb	Scepter 70DG — 2.86 oz in 10 to 20 gal water by ground equipment. For cocklebur and pigweed control only on sands or loamy sands, apply 2.14 oz.	Within 45 days of planting during seedbed preparation. If planting on beds, apply and incorporate after bed formation (See label).	Cocklebur, pitted, palmleaf and small-flower morningglory, pigweeds, prickly sida, smartweed, and common ragweed.	Set implements (see label) to incorporate Scepter into the top 1 to 2 inches of soil. If sufficient rainfall is not received within 7 days after application, use a rotary hoe to control emerged weeds. Susceptible weeds will emerge , stop growing, and either die or remain stunted. Internode shortening of soybean plants may occur. Do not (1) apply more than 0.25 lb ai/A Scepter per growing season, (2) graze or feed treated soybean forage, hay, or straw to livestock. Only rotational crops harvested at maturity may be used for feed or food. Avoid drift to non-target species or areas.
imazaquin + pendimethalin at 0.87 lb	Squadron 2.33 EC (0.33 lb ai imazaquin + 2.0 lb ai pendimethalin) — 3.0 pt in 10 or more gal water or 20 or more gal fertilizer by ground equipment or 5 or more gal by aerial equipment.	Within 30 days before planting or after bed formation.	Annual grasses and seedling johnsongrass, cocklebur, annual morningglories, pigweeds, and prickly sida.	Incorporate in the top 2 inches of soil. Do not graze or feed treated soybean hay, forage, or straw to livestock. Allow 90 days between application and harvest.

Crop, weed, or situation and active chemical per treated land acre

Formulation needed to treat 1 acre broadcast

Time of application

Weeds controlled

Special instructions and remarks

pendimethalin or trifluralin at 0.5 to 0.75 to 1.0 lb

Prowl 3.3EC/Pendimax 3.3 — 1.2 to 1.8 to 2.4 pt or **Trifluralin 4L** — 1 to 1.5 to 2 pt or **Treflan 5** — 0.8 to 1.2 to 1.6 pt in 10 to 20 gal water.

Prowl - 60 days; Treflan - several weeks to immediately before planting in spring.

Most annual grasses and some small-seeded annual broadleaf weeds such as pigweeds and purslane.

Incorporate 1 to 2 inches deep. Immediate incorporation is strongly recommended. The following losses can occur if incorporation is delayed 24 hours: Prowl - 15% and Treflan - 30%. When making band applications, avoid removal of treated soil from the seedbed during planting. If stand failure occurs, replant soybeans, but do not re-treat. Prowl – increase rate by 0.5 pt on medium-textured soils and 1 pt on fine-textured soils if heavy weed populations are anticipated.

pendimethalin or trifluralin tank mix with metribuzin at 0.5 + 0.25 to 0.75 + 0.37 to 1.0 + 0.5 lb

Prowl 3.3EC/Pendimax 3.3 — 1.2 to 1.8 to 2.4 pt or **Trifluralin 4L** — 1 to 1.5 to 2 pt or **Treflan 5** — 0.8 to 1.2 to 1.6 pt plus **Sencor 4L** — 0.5 to 0.75 to 1 pt or 75% DF — 0.33 to 0.5 to 0.67 lb in 10 to 20 gal water. For improved sicklepod control — Apply to the above, an additional 0.25 pt 4L or 0.17 lb 75% **Sencor DF surface preemergence**.

Treflan mixture — within 14 days of planting.
Prowl mixture — within 7 days of planting.

Most grasses from seed, pigweeds, purslane, hemp sesbania, prickly sida, smartweed, and sicklepod.

Do not use Sencor on coarse soils with less than 1% OM, on soils with a **calcareous surface area or pH 7.5 or higher**. Sencor/Lexone are not suggested for use on fields subject to water standing following heavy rainfall, or on fields planted to sensitive varieties. Incorporate the mix within 24 hours of application. Immediate incorporation is suggested. Losses of 15 and 30% of Prowl and Treflan, respectively, can occur if incorporation is delayed 24 hours. Set incorporation equipment to mix the herbicides into the top 2 to 3 inches of soil. Plant soybeans 1.5 to 2 inches deep. If stand failure occurs, replant but **do not** re-treat.

sulfentrazone + chlorimuron at 0.18 to 0.22 to 0.24 lb

Canopy XL — 5.1 to 6.4 to 6.8 oz.

Within 30 days before planting.

Cocklebur, morning-glories, nutsedges, pigweeds, common ragweed, velvetleaf.

Do not incorporate deeper than 1-2 inches. Incorporate with equipment designed for uniform incorporation to this depth. **Do not** apply to Black Belt soils with a soil pH greater than 7.0 or history of nutrient deficiency.

S-metolachlor + metribuzin at 0.98 to 2.4 lb

Boundary — 1 to 2.5 pt in a minimum of 10 gal water by ground and 2 gal water by air.

From 0 to 30 days before planting.

Annual grasses, pigweeds, prickly sida, hemp sesbania, sicklepod, smartweed, spurge, velvetleaf.

Injury may occur (1) on soils with calcareous surface or pH 7.5 or above; (2) to certain soybean varieties, see label for list; (3) on soil with less than 0.5% organic matter; (4) when soybeans are planted less than 1.5 inches deep; (5) when heavy rains follow application, especially in poorly drained areas where water may stand several days. Do not use Boundary rates above 1.25 pt/A on soils above pH 7.0. Don't use on sands with less than 0.5% organic matter. Treated forage and vines may be fed to livestock 40 days after application.

Red rice control

alachlor 3 qt

Lasso Micro-tech — 3 qt

From 7 days to immediately before planting as final seedbed preparation.

Red rice, annual grasses, and pigweeds.

Use no more than 3 qt. Make two passes to incorporate into upper 1 to 2 inches of soil with equipment set to work the soil **no deeper than 4 inches**. Make second pass at an angle to the first. See label for restrictions and user precautions.

Soybeans, Continued

Crop, weed, or situation and active chemical per treated land acre

Formulation needed to treat 1 acre broadcast

Time of application

Weeds controlled

Special instructions and remarks

dimethenamid-P at 0.47 to 0.98 lb	Outlook — 10 to 21 oz in 2 or more gallons of water to obtain ground coverage.	Up to 2 weeks before planting.	Most annual grasses including broadleaf signalgrass and red rice, and small seeded broadleaf weeds.	Poor control of most large-seeded broadleaf weeds. See label for tank mixtures. May cause temporary growth suppression of soybeans with high rainfall and water-saturated soil. Do not use more than 21 oz of Outlook per season.
metolachlor at 1.5 to 2.5 lb/0.95 to 1.90 lb.	Dual 8E/Dual Magnum — 1.5 to 2.5 pt/1.0 to 2.0 pt in 10 to 20 gal water.	Within 14 days of planting.	Red rice, annual grasses, and pigweeds.	Incorporate into the top 2 inches of the soil using a finishing (pulverizing) disk harrow, or rolling cultivator. If soybeans are planted on a bed, apply and incorporate after bed formation. If stand failure occurs, do not retreat unless replanting is in the middles following band application.
S-metolachlor + metribuzin at 0.98 to 2.4 lb	Boundary — 1 to 2.5 pt in a minimum of 10 gal water by ground and 2 gal water by air.	From 0 to 30 days before planting.	Annual grasses, pigweeds, prickly sida, hemp sesbania, sicklepod, smartweed, spurge, velvetleaf.	Injury may occur (1) on soils with calcareous surface or pH 7.5 or above; (2) to certain soybean varieties, see label for list; (3) on soil with less than 0.5% organic matter; (4) when soybeans are planted less than 1.5 inches deep; (5) when heavy rains follow application, especially in poorly drained areas where water may stand several days. Do not use Boundary rates above 1.25 pt/A on soils above pH 7.0. Don't use on sands with less than 0.5% organic matter. Treated forage and vines may be fed to livestock 40 days after application.
pendimethalin or trifluralin at 1.0 to 1.5 to 2.0 lb	Prowl 3.3EC/Pendimax — 2.4 to 3.6 to 4.8 pt or Trifluralin 4L – 1st year 2 to 3 to 4 pt or Treflan 5 – 1.6 to 2.4 to 3.2 pt 2nd year Trifluralin 4L 1 to 1.5 to 2 pt or Treflan 5 – 0.8 to 1.2 to 1.6 pt	Prowl/Pendimax — up to 60 days to immediately before planting. Treflan — in spring before planting soybeans.	Red rice.	Thoroughly incorporate 2 to 3 inches deep. Rice may be planted the third year. Prowl — do not use on soils with more than 3% O.M. 3 pt/A may be used on coarse-textured soils if heavy red rice populations are anticipated. Treflan — treatment may cause injury on soils with less than 2% organic matter. Do not plant winter wheat behind soybeans the same year.

Consult labels for approved adjuvants.

Weed resistance to recommended use-rates of certain herbicides has been documented in Mississippi.

Herbicide recommendations in this publication were approved by the Mississippi Weed Science Committee.

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