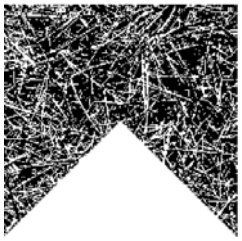
IPM Peanut



Insect, Disease, Nematode, and Weed Control Recommendations for 2008

INSECT CONTROL

When preparing soil before planting peanuts, check for soil insects. If white grubs, wireworms, whitefringed beetle larvae, or bahiagrass borer larvae are going to be a problem, they may be present before planting. These insects are much more likely to cause problems where peanuts follow sod crops.

If adult whitefringed beetles were found feeding on the crop grown in a field the previous year, check soil closely for larvae. This is because eggs are laid when adults feed, and the small larvae will be present when land is prepared. Control measures for these soil pests must be applied and incorporated into the soil before the crop is planted.

Good thrips control requires preventive treatment. You can use either (1) an in-furrow systemic insecticide; (2) foliar applications of acephate (Orthene), gamma-cyhalothrin (Prolex), or lambda-cyhalothrin (Karate); or (3) a hopper-box seed treatment with acephate. If foliar sprays are used, make the first application when the first true leaf is formed and a second application 7 to 10 days later.

Using an in-furrow systemic insecticide at planting is usually the most effective method for thrips control that has minimal effect on beneficials. If thrips damage is severe, a foliar spray may be needed to extend control with the hopper-box treatment.

Several species of thrips found in Alabama peanuts can infect plants with tomato spotted wilt (TSW). Additional applications of insecticides for thrips control will not significantly reduce TSW levels and can destroy beneficial populations. For growers with fields that have high levels of TSW, variety selection and combinations of other cultural practices are the only recommended management measures.

Georgia Green peanut cultivar is moderately susceptible to TSW compared to the older varieties like Florunner. Recently released cultivars offer significant improvements for TSW management. These include AP-3, Ga03L, and Ga02C. Selection of a TSW-resistant cultivar should be a major component of a management program. Avoid especially early planting (mid-April) when peanut seed emerge slowly and erratic stands may result. Planting in a 2- to 3-week window, starting after the tenth of May, will usually provide reduced TSW levels. Plant normal to high seeding rates (five to six seed per foot) where TSW is a problem in order to obtain a good uniform peanut stand. Twin-row planting and strip-tilled planting are production practices that have also been shown to reduce incidence of TSW.

After peanuts are up, fields should be checked at least once a week for pest and beneficial insects in order to make treatment decisions. To check a field, walk diagonally across it and around at least half of the borders. Look for any abnormal plants or plant parts and, if any are found, try to determine the cause. Look for any discolored leaves and examine the undersides closely to determine if spider mites are present.

At ten locations in each field, examine 3 feet of row carefully. In each 3-foot section, shake the vines thoroughly and fold them back to count any foliage-feeding pests on the surface of the soil. Identify and record numbers of each kind of insect found. Carefully examine the undersides of the plants for signs of lesser cornstalk borer damage.

As the vines are folded back, some pods and pegs will be pulled out of the soil. Examine these for damage. It may be necessary to remove a few plants from the soil in order to thoroughly check for southern corn rootworms and lesser cornstalk borers and their damage. If you find larvae or fresh damage from either of these soil insects *at three or more of the ten locations,* a recommended insecticidal treatment should be made.

Spider mites should be controlled as soon as they are found. If they are confined to small areas of a field, acceptable control can be obtained by treating only the infested areas. Then, 3 to 4 days following the first treatment, carefully examine the infested areas for the presence of live mites. If any are found, make a second application of a recommended miticide. Let no more than 5 days elapse between the two treatments.

Foliage-feeding caterpillars should be controlled when an average of four or more per foot of row are found in a field. Insecticides used in early or mid season may cause larger populations of foliage-feeding caterpillars later in the season because of the destruction of beneficial insects which help control these caterpillars.

Rednecked peanut worms are small, cream colored, grub-like worms with a black head and a distinctive, red collar between the head and body. They feed by boring into the new growth or terminal bud of the peanut plant. Most severe infestations usually occur in hot, dry weather and damage to the growth of the plant can occur if damage persists for more than one generation. Symptoms of damage are noted as a browning-out of the new growth tissue in the main stem terminal. In high infestations lateral terminal buds can also

be damaged by the rednecked peanut worm. If terminal damage is excessive and causing stunting of peanuts, a foliar insecticide should be applied.

Leafhoppers are small insects which suck plant juices by feeding on the mid vein of the peanut leaflet. Their feeding produces a toxic reaction in the leaflet, causing it to turn yellow. This damage is referred to as "hopper burn." Leafhoppers often move into peanut fields from grassy or weedy field borders. If more than 20 percent of foliage in a field has hopper burn and adults or nymphs are found when scouting, a recommended insecticide should be applied.

Three-cornered alfalfa hoppers are small, green triangular insects that girdle the main stem, lateral stems, and even the leaf stems. Their damage is most obvious when the foliage above the girdled stem turns yellow and the stem turns a purplish color. The girdled area is usually a thickened calloused ring around the damaged area.

In recent years, the damage to Alabama peanuts caused by the three-cornered alfalfa hopper has increased considerably. Multiple girdle damage has been evident on many plants. The girdling injury, when excessive, has been shown to reduce yields. Unusually high populations of three-cornered alfalfa hoppers or early detection of girdling damage might warrant an insecticide treatment.

Burrower bugs are small (1/3 to 1/4 inch) black, oval-shaped insects that feed on pods. They are closely related to stink bugs and have the same musky smell when mashed as stink bugs. They feed underground when peanut seed begin to form in the pod. Excessive pod damage is usually associated with strip-till planted peanuts or soils with high organic residue.

See Circular ANR-598, "Peanut Pest Management Scout Manual," for specific recommendations and techniques for scouting peanuts. Circulars ANR-990, "Sucking Pests of Peanuts," and ANR-752, "Foliage Feeders on Alabama Peanuts," provide additional information to aid in identifying peanut insect pests. You can get these Alabama Cooperative Extension System publications from your county Extension office.

Table 1. Peanut Insect Control

Insect	Insecticide and Formulation	Amount of Formulation per Acre	Lb. Active Ingredient per Acre	Minimum Days/Hours[1] from Last Application to: Harvest	Reentry	Comments
Beet Armyworms						
General Comments: *Apply as a foliar spray when infestations of four or more caterpillars per foot of row are present.*						
	diflubenzuron DIMILIN 2L	4-8 fl.oz.	0.25-0.50	28	12	**DO NOT** make more than three applications per season. Do not exceed 24 fluid ounces per acre per season. The minimum application interval is 14 days. Apply when larvae are small. Since Dimilin is an insect growth regulator, larvae must ingest treated peanut foliage. Control of larvae may not be seen for 5 to 7 days after application.
	indoxacarb STEWARD 1.25SC	9.2-11.3 oz.	0.09-0.11	14	12	**DO NOT** apply more than 45 fluid ounces per acre per season.
	methomyl LANNATE 2.4LV	1.5-3 pt.	0.45-0.9	21	48	**DO NOT** make more than eight applications per crop per season or exceed 12 pints per acre per season. **DO NOT** feed treated vines.
	spinosad TRACER 4SC	2-3 oz.	0.062-0.094	3	4	***Grazing Restrictions:*** **DO NOT** feed hay until 14 days after last application. **DO NOT** make more than three applications per season. **DO NOT** apply more than a total of 9 fluid ounces per season.

[1] Days refers to minimum time from last application to harvest; hours refers to minimum time from last application to reentry.

[2] See Table 2 for a list of other trade names.

Insect	Insecticide and Formulation	Amount of Formulation per Acre	Lb. Active Ingredient per Acre	Minimum Days/Hours[1] from Last Application to: Harvest	Reentry	Comments
Burrower Bugs						
	chlorpyrifos					Band over the row when more than two bugs per 3 row feet are found on or in the soil during early pod fill. **DO NOT** feed peanut forage or hay to meat or dairy animals. **Do not** exceed 4 pounds active ingredient per acre of clorpyrifos per season. **Do not** apply by air.
	LORSBAN 15G	13.3 lb.	2	21	24	
	Other trade names [2]	See label	See label	See label	See label	
Corn Earworms, Tobacco Budworms						
	General Comments: *Apply as a foliar spray when infestations of four or more caterpillars per foot of row are present.*					
	acephate					**DO NOT** feed forage or hay treated with acephate to livestock or graze treated areas.
	ORTHENE 75S	1-1.33 lb.	0.75-1	14	24	
	ORTHENE 97 AG	12-16 oz.	0.75-1	14	24	
	Other trade names [2]	See label	See label	See label	See label	
	carbaryl					**DO NOT** apply more than 8 quarts or pounds of carbaryl per acre per season.
	SEVIN 4F, XLR	3 pt.	1.5	14	12	
	SEVIN 80S	1.88 lb.	1.5	14	12	
	Other trade names [2]	See label	See label	See label	See label	
	cyfluthrin					**DO NOT** make more than three applications of cyfluthrin and/or beta-cyfluthrin per season.
	BAYTHROID 2	1.8-2.4 fl. oz.	0.028-0.038	14	12	
	Other trade names [2]	See label	See label	See label	See label	
	beta-cyfluthrin					
	BAYTHROID XL	1.8-2.4 fl. oz.	0.014-0.019	14	12	
	esfenvalerate					**DO NOT** feed or graze livestock on vines treated with enfenvalerate. **DO NOT** exceed 0.15 pound active ingredient of esfenvalerate per season.
	ASANA XL	2.9-5.8 oz.	0.01-0.03	21	12	
	fenpropathrin					
	DANITOL 2.4 EC	10.66-16 fl.oz.	0.2-0.3	14	24	
	gamma-cyhalothrin					**DO NOT** apply more than 0.06 pound active ingredient of gamma-cyhalothrin per acre per season.
	PROLEX 1.25	1-1.5 fl.oz.	0.01-0.015	14	24	
	Other trade names [2]	See label	See label	See label	See label	
	lambda-cyhalothrin					**DO NOT** apply more than 0.12 pound active ingredient of lambda-cyhalothrin per acre per season.
	KARATE Z	1.28-1.92 oz.	0.02-0.03	14	24	
	Other trade names [2]	See label	See label	See label	See label	
	methomyl					**DO NOT** feed vines treated with methomyl. **DO NOT** make more than eight applications of methomyl per season or exceed 12 pints per acre.
	LANNATE 2.4LV	0.75-1.5 pt.	0.23-0.45	21	48	
	spinosad					**DO NOT** feed hay until 14 days after last application. **DO NOT** make more than three applications or apply more than a total of 9 fluid ounces per season.
	TRACER 4SC	1.5-3 fl.oz.	0.047-0.094	3	4	

[1] Days refers to minimum time from last application to harvest; hours refers to minimum time from last application to reentry.

[2] See Table 2 for a list of other trade names.

Insect	Insecticide and Formulation	Amount of Formulation per Acre	Lb. Active Ingredient per Acre	Minimum Days/Hours[1] from Last Application to: Harvest	Reentry	Comments
Cutworms						
	General Comments: *Apply insecticides as a foliar spray when infestations of four or more caterpillars per foot of row are present.*					
	indoxacarb					
	STEWARD 1.25 SC	9.2-11.3 oz.	0.09-0.11	14	12	**DO NOT** apply more than 45 fluid ounces per acre per season.
	cyfluthrin					
	BAYTHROID 2	1-1.8 fl.oz.	0.016-0.028	14	12	**DO NOT** make more than three applications of cyfluthrin or beta-byfluthrin per season.
	Other trade names [2]	See label	See label	See label	See label	
	beta-cyfluthrin					
	BAYTHROID XL	1.0-1.8 fl.oz.	0.008-0.014	14	12	
	gamma-cyhalothrin					
	PROLEX 1.25	0.75-1.25 fl.oz.	0.0075-0.0125	14	24	**DO NOT** apply more than 0.06 pounds active ingredient of gamma-cyhalothrin per acre per season.
	Other trade names [2]	See label	See label	See label	See label	
	lambda-cyhalothrin					
	KARATE Z 2.08	1.28-1.92 fl.oz.	0.015-0.025	14	24	**DO NOT** apply more than 0.12 pounds active ingredient of lambda-cyhalothrin per acre per season.
	Other trade names [2]	See label	See label	See label	See label	
	methomyl					
	LANNATE 2.4 LV	1.5-3 pt.	0.45-0.9	21	48	**DO NOT** feed vines treated with methomyl. **DO NOT** make more than eight applications per crop per season or exceed 12 pints per acre per season.
Fall Armyworms						
	General Comments: *Apply as a foliar spray when infestations of four or more caterpillars per foot of row are present. Karate, Prolex, and Baythroid are effective on first and second instar larvae only.*					
	acephate					
	ORTHENE 75S	1-1.3 lb.	0.75-1	14	24	**DO NOT** graze or feed vines treated with acephate.
	ORTHENE 97AG	12-16 oz.	0.75-1	14	24	
	Other trade names [2]	See label	See label	See label	See label	
	cyfluthrin					
	BAYTHROID 2	2.4-2.8 fl.oz.	0.038-0.44	14	12	**DO NOT** make more than three applications of cyfluthrin and/or beta-cyfluthrin per season.
	Other trade names [2]	See label	See label	See label	See label	
	beta-cyfluthrin					
	BAYTHROID XL	2.4-2.8 fl.oz.	0.019-0.022 fl.oz.	14	12	
	diflubenzuron					
	DIMILIN 2L	4-8 fl.oz.	0.25-0.50	28	12	**DO NOT** make more than three applications per season. Do not exceed 24 fluid ounces per acre per season. The minimum application interval is 14 days. Apply when larvae are small. Since Dimilin is an insect growth regulator, larvae must ingest treated peanut foliage. Control of larvae may not be seen for 5 to 7 days after application.
	fenpropathrin					
	DANITOL 2.4 EC	10.66-16 oz.	0.2-0.3	14	24	

[1]Days refers to minimum time from last application to harvest; hours refers to minimum time from last application to reentry.

[2] See Table 2 for a list of other trade names.

Insect	Insecticide and Formulation	Amount of Formulation per Acre	Lb. Active Ingredient per Acre	Minimum Days/Hours[1] from Last Application to: Harvest	Reentry	Comments
Fall Armyworms (cont.)						
	gamma-cyhalothrin					**DO NOT** apply more than 0.06 pound active ingredient of gamma-cyhalothrin per acre per season.
	PROLEX 1.25	1-1.5 fl.oz.	0.01-0.015	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	indoxacarb					**DO NOT** apply more than 45 fluid ounces of indoxacarb per acre per season.
	STEWARD 1.25 SC	9.2-11.3 fl.oz.	0.09-0.11	14	12	
	lambda-cyhalothrin					**DO NOT** apply more than 0.12 pound active ingredient of lambda-cyhalothrin per acre per season.
	KARATE Z	1.28-1.96 oz.	0.02-0.03	14	12	
	Other trade names[2]	See label	See label	See label	See label	
	methomyl					**DO NOT** feed vines treated with methomyl. **DO NOT** make more than eight applications of methomyl per season or exceed 12 pints per acre per season.
	LANNATE 2.4LV	0.75-1.5 pt.	0.23-0.45	21	48	
	spinosad					**DO NOT** feed hay until 14 days after last application of spinosad. **DO NOT** make more than three applications nor apply more than 9 fluid ounces of spinosad per season.
	TRACER 4 SC	2-3 fl.oz.	0.062-0.094	3	4	
Grasshoppers						
	General Comments: *Apply as a foliar spray when defoliation exceeds 25 percent.*					
	acephate					**DO NOT** feed forage or hay treated with acephate to livestock or graze treated areas.
	ORTHENE 75 S	0.33-0.67 lb.	0.25-0.5	14	24	
	ORTHENE 97	0.25-0.5 lb.	0.24-0.49	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	cyfluthrin					**DO NOT** make more than three applications of cyfluthrin and/or beta-cyfluthrin per season.
	BAYTHROID 2	1.8-2.4 fl.oz.	0.028-0.38	14	12	
	Other trade names[2]	See label	See label	See label	See label	
	beta-cyfluthrin					
	BAYTHROID XL	1.8-2.4 fl.oz.	0.014-0.019	14	12	
	gamma-cyhalothrin					**DO NOT** apply more than 0.06 pound active ingredient of gamma-cyhalothrin per acre per season.
	PROLEX 1.25	1-1.5 fl.oz	0.01-0.015	14	24	
	Other trade names[2]	See label.	See label	See label	See label	
	lambda-cyhalothrin					**DO NOT** apply more than 0.12 pound active ingredient of lambda-cyhalothrin per acre per season.
	KARATE Z	1.28-1.92 fl.oz.	0.02-0.03	14	24	
	Other trade names[2]	See label	See label	See label	See label	

[1] Days refers to minimum time from last application to harvest; hours refers to minimum time from last application to reentry

[2] See Table 2 for a list of other trade names.

Insect	Insecticide and Formulation	Amount of Formulation per Acre	Lb. Active Ingredient per Acre	Minimum Days/Hours[1] from Last Application to: Harvest	Reentry	Comments
Leafhoppers						
General Comments: *Apply as a foliar spray when damage (hopper burn) is evident on 20 percent of more of plants and insects are present.*						
	acephate					**DO NOT** graze or feed vines treated with acephate.
	ORTHENE 75S	1-1.3 lb.	0.75-1	14	24	
	ORTHENE 97 AG	12-16 oz.	0.75-1	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	carbaryl					**DO NOT** apply more than 8 quarts or pounds of cabaryl per acre per season.
	SEVIN 4F, XLR	1 qt.	1	14	12	
	SEVIN 80S	1.25 lb.	1	14	12	
	Other trade names[2]	See label	See label	See label	See label	
	cyfluthrin					**DO NOT** make more than three applications of cyfluthrin and/or beta-cyfluthrin per season.
	BAYTHROID 2	1-1.8 fl.oz.	0.016-0.028	14	12	
	Other trade names[2]	See label	See label	See label	See label	
	beta-cyfluthrin					
	BAYTHROID XL	1-1.8 fl.oz.	0.008-0.014	14	12	
	gamma-cyhalothrin					**DO NOT** apply more than 0.06 pound active ingredient of gamma-cyhalothrin per acre per season.
	PROLEX 1.25	0.75-1.25 fl.oz.	0.0075-0.0125	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	lambda-cyhalothrin					**DO NOT** apply more than 0.12 pound active ingredient of lambda-cyhalothrin per acre per season.
	KARATE Z	0.96-1.6 fl.oz.	0.015-0.025	14	24	
	Other trade names[2]	See label	See label	See label	See label	
Lesser Cornstalk Borers						
General Comments: *Control when fresh damage or borers are found at 30 percent of sites scouted in a field.*						
	chlorpyrifos					Apply granules in a band over the row and pegging zone. **DO NOT** feed forage or hay to meat or dairy animals.
	LORSBAN 15G	13.3 lb.	2	21	12	
	Other trade names[2]	See label	See label	See label	See label	
Loopers						
General Comments: *Apply insecticides as a foliar spray when infestations of four or more caterpillars per foot of row are present.*						
	indoxacarb					**DO NOT** apply more than 45 fluid ounces per acre per season.
	STEWARD 1.25 SC	9.2-11.3 fl.oz.	0.09-0.11	14	12	
	methomyl					**DO NOT** make more than eight applications per crop per season or exceed 12 pints per acre per season. **DO NOT** feed treated vines.
	LANNATE LV	1.5-3 pt.	0.45-0.9	21	48	
	spinosad					**DO NOT** feed hay nor graze for 14 days after application. **DO NOT** make more than three applications nor apply more than 9 fluid ounces total per season.
	TRACER 4SC	1.5-3 oz.	0.047-0.094	3	4	

[1] Days refers to minimum time from last application to harvest; hours refers to minimum time from last application to reentry

[2] See Table 2 for a list of other trade names.

Insect	Insecticide and Formulation	Amount of Formulation per Acre	Lb. Active Ingredient per Acre	Minimum Days/Hours[1] from Last Application to: Harvest	Reentry	Comments
Rednecked Peanut Worm						
	General Comments: *Apply as a foliar spray when terminal damage is excessive.*					
	cyfluthrin					**DO NOT** make more than three applications of cyfluthrin and/or beta-cyfluthrin per season.
	BAYTHROID 2	1-1.8 fl. oz.	0.016-0.028	14	12	
	Other trade names[2]	See label	See label	See label	See label	
	beta-cyfluthrin					
	BAYTHROID XL	1.8-2.4 fl.oz.	0.008-0.014	14	12	
	esfenvalerate					**DO NOT** feed or graze livestock on vines treated with enfenvalerate. **DO NOT** exceed 0.15 pound active ingredient of esfenvalerate per season.
	ASANA XL	2.9-5.8 oz.	0.015-0.03	21	12	
	gamma-cyhalothrin					**DO NOT** apply more than 0.06 pound active ingredient of gamma-cyhalothrin per acre per season.
	PROLEX 1.25	0.75-1.25 fl.oz.	0.0075-0.0125	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	lambda-cyhalothrin					**DO NOT** apply more than 0.12 pound active ingredient of lambda-cyhalothrin per acre per season.
	KARATE Z	0.96-1.6 oz.	0.015-0.025	14	24	
	Other trade names[2]	See label	See label	See label	See label	
Southern Corn Rootworms						
	General Comments: *Control when fresh damage or borers are found at 30 percent of sites scouted in a field.*					
	chlorpyrifos					Apply as a banded application over the row at early pegging through pod fill. **DO NOT** feed forage or hay to beef or dairy animals.
	LORSBAN 15G	13.3 lb.	2	21	12	
	Other trade names[2]	See label	See label	See label	See label	
Spider Mites						
	fenpropathrin					**DO NOT** apply more than 2.67 pints per season. **DO NOT** graze or feed treated peanut forage or hay within 14 days of last application.
	DANITOL 2.4 EC	10.67-16 oz.	0.2-0.3	14	24	
	propargite					**DO NOT** apply more than twice per season. **DO NOT** graze or feed livestock on treated areas or cut treated forage for hay. May cause foliar burn, especially if temperature is greater than 90°F.
	COMITE 6.55	2 pt.	1.64	14	7 days 48 hr., if protective equipment is used	

[1]Days refers to minimum time from last application to harvest; hours refers to minimum time from last application to reentry.

[2] See Table 2 for a list of other trade names.

Insect	Insecticide and Formulation	Amount of Formulation per Acre	Lb. Active Ingredient per Acre	Minimum Days/Hours[1] from Last Application to: Harvest	Reentry	Comments
Spider Mites (cont.)						
	COMITE II	2.25 pt.	1.6	14	7 days 48 hr., if protective equipment is used	**DO NOT** apply more than once per season. May cause foliar burn, especially if air temperature is greater than 90ºF. **DO NOT** graze or feed livestock on treated areas or cut treated forage for hay.
	OMITE 30W	3-5 lb.	0.9-1.5	14	7 days	**DO NOT** apply more than twice per season. **DO NOT** graze or feed livestock on treated areas or cut treated forage for hay. **DO NOT** plant unregistered crops within 6 months of last application.
	OMITE 30WS	3-5 lb.	0.9-1.5	14	48 hr., if protective equipment is used	
Three-Cornered Alfalfa Hopper						
	carbaryl					**DO NOT** apply more than 8 quarts or pounds of carbaryl per acre per season.
	SEVIN 4F, XLR	1 qt.	1	14	12	
	SEVIN 80S	1.25 lb.	1	14	12	
	Other trade names [2]	See label	See label	See label	See label	
	cyfluthrin					**DO NOT** make more than three applications of cyfluthrin and/or beta-cyfluthrin per season.
	BAYTHROID 2	1.8-2.4 fl.oz.	0.028-0.38	14	12	
	Other trade names [2]	See label	See label	See label	See label	
	beta-cyfluthrin					
	BAYTHROID XL	1.8-2.4 fl.oz.	0.014-0.019	14	12	
	gamma-cyhalothrin					**DO NOT** apply more than 0.06 pound active ingredient of gamma-cyhalothrin per acre per season.
	PROLEX 1.25	0.75-1.25 fl.oz.	0.075-0.0125	14	24	
	Other trade names [2]	See label	See label	See label	See label	
	lambda-cyhalothrin					**DO NOT** apply more than 0.12 pound active ingredient of lambda-cyhalothrin per acre per season.
	KARATE Z	0.96-1.6 fl.oz.	0.015-0.025	14	12	
	Other trade names [2]	See label	See label	See label	See label	

[1]Days refers to minimum time from last application to harvest; hours refers to minimum time from last application to reentry.

[2] See Table 2 for a list of other trade names.

Insect	Insecticide and Formulation	Amount of Formulation per Acre	Lb. Active Ingredient per Acre	Minimum Days/Hours[1] from Last Application to: Harvest	Reentry	Comments
Thrips						
	acephate					***Apply as a foliar spray in seedling stage.*** **DO NOT** feed forage or hay to livestock or graze treated areas.
	ORTHENE 75S	0.5-1 lb.	0.38-0.75	14	24	
	ORTHENE 97 AG	0.4-0.75 lb.	0.38-0.75	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	ORTHENE 75S	4 oz./100 lb. seed	0.19/100 lb. seed	14	---	***Apply seed treatment*** as a dry powder to peanut seed in the planter box. Layer in powder in thirds as seed hopper box is filled. **NOTE:** Germination of treated seed that become wet or moist due to rain or heavy dew may decrease.
	Other trade names[2]	See label	See label	See label	See label	
	aldicarb					***Apply in seed furrow and cover.*** **DO NOT** feed hay or vines from treated fields to livestock or hogs.
	TEMIK 15G	6.7 lb.	1	---	48	
	gamma-cyhalothrin					***Apply as a foliar spray in seedling stage.*** **DO NOT** apply more than 0.06 pound active ingredient of gamma-cyhalothrin per acre per season.
	PROLEX 1.25	1-1.5 fl.oz.	0.01-0.015	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	lambda-cyhalothrin					***Apply as a foliar spray in seedling stage.*** **DO NOT** apply more than 0.12 pound active ingredient of lambda-cyhalothrin per acre per season.
	KARATE Z	1.28-1.96 fl.oz.	0.02-0.03	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	phorate					***Apply granules in seed furrow at planting.*** **DO NOT** graze or feed treated hay or forage to livestock. Available only in closed handling systems (lock ‘n load). Do not apply more than 5.8 total pounds per acre on twin rows.
	THIMET 20G	3.85 lb. (36-in. rows)	0.77	90	48	
	Other trade names[2]	See label	See label	See label	See label	
Velvetbean Caterpillars, Green Cloverworms						
	General Comments: *Apply as a foliar spray when worms exceed four or more per row foot.*					
	Bacillus thuringiensis					A delay in larval mortality may occur. Use on small to medium-size larvae. At high population levels, a contact insecticide should be added or used instead.
	AGREE WG	1.2 lb.	---	---	4	
	BIOBIT HP	0.5-1 lb.	---	---	4	
	DIPEL DF	0.5-1 lb.	---	---	4	
	JAVELIN WG	0.25-0.5 lb.	---	---	4	
	XENTARI DF	0.5-1.5 lb.	---	---	4	
	carbaryl					**DO NOT** apply more than 8 quarts or pounds of carbaryl per acre per season.
	SEVIN 4F, XLR	2 pt.	1	14	12	
	SEVIN 80S	1.25 lb.	1	14	12	
	Other trade names[2]	See label	See label	See label	See label	

[1]Days refers to minimum time from last application to harvest; hours refers to minimum time from last application to reentry.

[2] See Table 2 for a list of other trade names.

Insect	Insecticide and Formulation	Amount of Formulation per Acre	Lb. Active Ingredient per Acre	Minimum Days/Hours[1] from Last Application to: Harvest	Reentry	Comments
Velvetbean Caterpillars, Green Cloverworms (cont.)						
	cyfluthrin					**DO NOT** make more than three applications of cyfluthrin and/or beta-cyfluthrin per season.
	BAYTHROID 2	1-1.8 fl.oz.	0.016-0.028	14	12	
	Other trade names[2]	See label	See label	See label	See label	
	beta-cyfluthrin					
	BAYTHROID XL	1-1.8 fl.oz.	0.008-0.014	14	12	
	diflubenzuron					**DO NOT** make more than three applications per season. Do not exceed 24 fluid ounces per acre per season. The minimum application interval is 14 days. Apply when larvae are small. Since Dimilin is an insect growth regulator, larvae must ingest treated peanut foliage. Control of larvae may not be seen for 5 to 7 days after application.
	DIMILIN 2L	2-4 fl.oz.	0.125-0.250	28	12	
	esfenvalerate					**DO NOT** exceed 0.15 pound active ingredient of Asana per season. **DO NOT** graze livestock in treated areas or use treated vines or hay for animal feed.
	ASANA XL	2.9-5.8 oz.	0.015-0.03	21	12	
	gamma-cyhalothrin					**DO NOT** apply more than 0.06 pound active ingredient of gamma-cyhalothrin per acre per season.
	PROLEX 1.25	0.75-1.25 fl.oz.	0.075-0.0125	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	lambda-cyhalothrin					**DO NOT** apply more than 0.12 pound active ingredient of lambda-cyhalothrin per acre per season.
	KARATE Z	0.96-1.6 fl.oz.	0.015-0.025	14	24	
	Other trade names[2]	See label	See label	See label	See label	
	methomyl					**DO NOT** feed vines treated with methomyl. **DO NOT** make more than eight applications per crop per season or exceed 12 pints per acre per season
	LANNATE 2.4LV	1.5 pt.	0.45	21	48	
Wireworms						
	chlorpyrifos					***Apply as a preplant broadcast spray to soil surface. Incorporate immediately*** to a depth of 3 to 4 inches. **DO NOT** make more than one application per season. **DO NOT** feed treated forage or hay to meat or dairy animals. The total amount of chlorpyrifos applied per season must not exceed 4 pounds active ingredient per acre.
	LORSBAN 4E	4 pt.	2	21	24	
	LORSBAN 75WG	2.67 lb.	2	21	24	
	Other trade names[2]	See label	See label	See label	See label	
	chlorpyrifos					**FOR SUPPRESSION ONLY.** Apply as a banded application over the row when scouting reveals greater than 30 percent pod damage.
	LORSBAN 15G	13.3 lb.	2	21	24	
	Other trade names[2]	See label	See label	See label	See label	

[1]Days refers to minimum time from last application to harvest; hours refers to minimum time from last application to reentry.

[2]See Table 2 for a list of other trade names.

Table 2. Peanut Insecticide Common Chemical Names, Trade Names, and Formulations

Insecticide Common Name	Trade Name and Formulation
acephate	Orthene 75S, Orthene 97AG, Spitfire, Acephate 75S, Acephate 90 S
aldicarb	Temik 15G
Bacillus thuringiensis (Bt)	Agree WG, BioBit HP, Dipel DF, Javelin WG, Xentari DF
carbaryl	Sevin XLR, Sevin 80W, Carbaryl 4L, Carbaryl 80W
chlorpyrifos	Lorsban 4E, Lorsban 15G, Lorsban 75WG,Nufos 15G, Nufos 4E, Chlorpyrifos 15G, Chlorpyrifos 4E
cyfluthrin	Baythroid 2, Renounce 2, Tombstone 2
beta-cyfluthrin	Baythroid XL
diflubenzuron	Dimilin 2L
esfenvalerate	Asana XL
fenpropathrin	Danitol 2.4 EC
gamma-cyhalothrin	Prolex 1.25, Proaxis
indoxacarb	Steward SC, Steward EC
lambda-cyhalothrin	Karate with Zeon Technology, Warrior with Zeon Technology, Lambda, Lambda T, Silencer
methomyl	Lannate LV
phorate	Thimet 20G, Phorate 20G
propargite	Omite 30W, 30WS, Comite 6.55, Comite II
spinosad	Tracer 4SC

Insect Control section prepared by J. Ronald Weeks, former *Extension Entomologist*, Associate Professor Emeritus and Visiting Professor, Entomology and Plant Pathology, Auburn University.

DISEASE AND NEMATODE CONTROL

Peanut diseases significantly reduce yield and nut quality. Poor peanut stands are often the result of seed rot or seedling disease. Control of early and late leaf spot requires a program of regular fungicide sprays to avoid defoliation of peanuts before harvest. Several soilborne fungi and nematodes damage stems, crowns, roots, and pods of peanut plants. A combination of chemical and management practices is usually necessary to control diseases and nematodes on peanuts.

Management Practices for Disease Control

Management practices are an important part of a peanut disease control program. Such practices alone cannot prevent outbreaks of disease or nematodes on peanuts. However, they are a good method of reducing losses and, thus, reducing the need for expensive chemical treatments.

Rotating peanuts with pasture grasses, cotton, grain sorghum, and corn for two to three growing seasons can reduce the incidence of leaf spot diseases and white mold as well as root-knot nematodes. Avoid *peanut-soybean rotations* because both crops are susceptible to white mold and peanut root-knot.

See Extension Circulars ANR-368, "Soilborne Diseases of Peanuts," ANR-393, "Nematode Pests of Peanuts," and ANR-856, "Nematode Suppressive Crops," for more information on using crop rotation to control diseases and nematode pests on peanuts.

Deep plowing of the previous season's peanut crop residue can be an effective method of reducing leaf spot and white mold pressure. Turning crop residues 6 inches below the soil surface should slow the movement of pathogenic fungi onto young peanut plants. Planting into corn or cotton crop debris using reduced tillage practices will not increase the risk of leaf spot diseases, white mold, or Cylandrocladium black root rot (CBR).

Using recommended herbicides minimizes the need for cultivation which can encourage disease. Mechanical cultivation between rows for weed control may move soil over the runners or main stem, making the plants more susceptible to white mold. If cultivation is needed, use flat sweeps or other equipment designed to minimize soil movement.

Table 3. Peanut Disease Control

Disease	Fungicide and Formulation	Amount of Formulation Per 100 Lb. Of Seed	Comments
Seed Rot and Seedling Diseases			
	azoxystrobin + fludioxonil + mefenoxam DYNASTY PD	3.4 oz.	Combining products is **NOT RECOMMENDED.** Follow manufacturer's directions for treating seed. **DO NOT** use treated seed for food, feed, or oil. Vitavax controls only seed rots and seedling disease caused by *Rhizoctonia solani, Rhizopus,* and *Aspergillus*. Dynasty PD is active against fungi such as *Rhizoctonia solani* and Cylandrocladium and will suppress seed rot and seedling disease caused by *Aspergillus niger.*
	captan + trifloxystrobin + metalaxyl TRILEX OPTIMUM	4.5 oz.	
	captan + trifloxystrobin + thiophonate-methyl + metalaxyl TRILEX STAR	4.5 oz.	
	carboxin + PCNB + captan VITAVAX PC	4-6 oz.	
Seed and Root Rot			
	Bacillus subtilis KODIAK	0.125 oz.	HOPPER BOX TREATMENT: Use is recommended for peanuts planted before April 25 to suppress seed rot and seedling disease caused by *Rhizoctonia, Fusarium,* and *Aspergillus,* and to improve *Rhizobium* nodulation.

Disease	Fungicide and Formulation	Amount of Formulation Per 100 Lb. of Seed	Comments
***Aspergillus* and *Pythium* Seed Rot and Damping-Off**			
	azoxystrobin		IN-FURROW SPRAY: Mount the nozzle so that the spray mixture is applied into the open seed furrow just in front of the press wheel. Use higher rate when weather is cool and wet. Use for the control of *Aspergillus-, Pythium-,* and *Rhizoctonia*-incited seed rots and seedling damping-off, as well as suppression of white mold. See label for additional information.
	ABOUND 2SC	0.4-0.8 fl.oz./ 1000 row ft.	
	A. flavais and aflatoxin		Apply over the row approximately 60 days after planting when there is enough soil moisture for plant growth.
	AFLA-GUARD	20 lb.	
***Rhizoctonia* Seed Rot and Damping-Off**			
	flutolamil		In-Furrow Spray: Apply as a directed spray on a 4- to 8-inch band into the seed furrow over the seed and then cover. Apply in a minimum of 3 gallons of spray volume per acre. See label for additional application information.
	MONCUT 70DF	1.1 lb.	
Early and Late Leaf Spot			
	propiconazole		Begin sprays 35 to 40 days after planting. Under heavy pressure of early leaf spot, use higher rate. For control of both early and late leaf spot, apply propiconazole at a rate of 4 ounces per acre. Apply a propiconazole + chlorothalonil fungicide tank mixture in any field that will be treated later in the season with Folicur. All applications of propiconazole made after July 15 *must* be tank mixed with chlorothalonil. Propiconazole does not control peanut rust, white mold, or *Rhizoctonia* limb rot. Tilt, Bumper, and Propimax are triazole fungicides. See Extension Circular ANR-369, "Foliar Disease of Peanut," for additional information on triazole-resistance management strategies. Apply no more than 1.5 pounds per acre per year of T-Methyl 70WSB.
	BUMPER 41EC	2.5-4 fl.oz.	
	TILT 3.6E	2.5-4 fl.oz.	
	PROPIMAX	2.5-4 fl.oz.	
	propiconazole		
	TILT 3.6E	2 fl.oz.	
	or		
	BUMPER 41EC	2 fl.oz.	
	or		
	PROPIMAX	2 fl.oz.	
	+		
	chlorothalonil		
	BRAVO WEATHER STIK	1 pt.	
	or		
	ECHO 720 6F	1 pt.	
	propiconazole/chlorothalonil		
	TILT BRAVO SE	1.5-2.25 pt.	
	ECHO PROPIMAX CO- PACK		
	thiophanate-methyl		
	T-METHYL 70WSB	0.5 lb.	
	or		
	TOPSIN 4.5FL	10 fl.oz.	
	+		
	chlorothalonil		
	BRAVO WEATHER STIK	1 pt.	
	or		
	ECHO 720 6F	1 pt.	
	or		
	CHLOROTHALONIL 720F	1 pt.	
Early and Late Leaf Spot, Peanut Rust			
	azoxystrobin		For control of foliar diseases only. Make no more than two applications 10 to 14 days apart as part of a recommended seven-application calendar disease control program.
	ABOUND 2SC	6.0-18.5 fl.oz.	

Disease	Fungicide and Formulation	Amount of Formulation Per 100 Lb. of Seed	Comments
Early and Late Leaf Spot, Peanut Rust, Web Blotch			
	chlorothalonil		**General Leaf Spot Spray Program Guidelines.**
	BRAVO ULTREX	0.9-1.36 lb.	Begin sprays no later than 40 days after planting or by June 1.
	BRAVO WEATHER STIK	1-1.5 pt.	Using the AU-Pnut* leaf spot advisory, start sprays after the
	CHLORONIL 720	1-1.5 pt.	fifth shower of more than 0.1 inch but no later than 40 days
	CHLOROTHALONIL 720	1-1.5 pt.	after planting. Start sprays within 30 days of planting on late
	ECHO 90DF	1-1.25 lb.	May- and June-planted peanuts. If needed, chlorothalonil
	ECHO 720 6F	1-1.5 pt.	fungicides may be tank mixed with cracking or early
	EQUIS 720 SST	1-1.5 pt.	postemergence herbicide sprays. Repeat sprays every 10 to 14
	EQUUS DF	0.9-1.36 lb.	days up to 2 weeks before harvest. During periods of frequent rain showers, shorten spray intervals to 7 to 10 days. Adjust spray intervals to account for changes in weather conditions and
	copper hydroxide		rotation practices. For peanut rust and web blotch control, apply
	KOCIDE 4.5F	1 lb.	high rate at 7- to 10-day intervals. Scout fields weekly for both
	+	+	diseases, starting in early August. Rust can cause significant
	chlorothalonil		damage in Baldwin, Escambia, and Mobile Counties. The first
	BRAVO ULTREX	1 lb.	and possibly the second leaf spot sprays of the year can be
	BRAVO WEATHER STIK	1 pt.	banded over the row middle, particularly in a well-rotated field or when May and June weather is relatively dry.
	tebuconozole + trifloxystrobihn		
	ABSOLUTE 500SC	3.5 fl.oz.	

* See 2008 AU-Pnut Rules for Peanut Leaf Spot Control, page 22.

Disease	Fungicide and Formulation	Amount of Formulation Per 100 Lb. of Seed	Comments
Early and Late Leaf Spot, Rhizoctonia Limb Rot, Suppression of CBR, White Mold			
	azoxystrobin		Make broadcast foliar applications approximately 60 and 90 days after planting. Use higher rate in fields where heavy soilborne disease pressure is expected and serious disease-related losses have occurred in past years. Applications may be made earlier if weather conditions favor disease development. For season-long control of early and late leaf spot, apply the recommended rate of a recommended fungicide at 10- to 14-day intervals, before and after applying Abound, for a total of approximately seven fungicide applications per year. Abound will give 10 to 14 days of protection from early and late leaf spot. Under heavy disease pressure or fields with a history of peanut production, use at least 18.5 fluid ounces per acre. Rates below 18.5 fluid ounces per acre may be used under dry environmental conditions. Use 18.5 to 24.5 fluid ounces for CBR suppression. Apply Abound only with ground equipment. **DO NOT** apply Abound within 45 days of digging and **DO NOT** make more than two applications per year. Abound may be applied with ground equipment or by air. **Strobilurin Fungicide Resistance Management:** Continued use of strobilurin fungicides in the same field year after year may eventually result in leaf spot control failures due to increasing tolerance. Abound 2SC and Headline 2.09E are strobilurin fungicides that have a similar mode of action against target fungi. One of the components of Absolute is also a strobilurin fungicide. Avoid applying Abound, Headline, and/or Stratego to the same peanuts in the same growing season. FRAC guidelines specify that no more than two applications of any strobilurin fungicide may be made per year to the same field of peanuts without a broad-spectrum fungicide tank-mix partner. If more than two strobilurin fungicide applications are planned, add a recommended rate of Bravo Ultrex/Echo/Terranil to all tank-mix strobilurin combinations. See Triazole Fungicide Resistance Management.
	ABOUND 2SC	12.0-24.5 fl.oz.	
	propiconazole + flutolanil		**Four-Application Block Application Program:** Tank mix with 1 pint per acre of a chlorothalonil fungicide. Make first application approximately 60 days after planting and repeat at 10- to 14-day intervals until four consectutive applications of Artisan 3.6E are made. Apply a recommended fungicide(s) before and after the four applications of Artisan. See guidelines for Triazole Resistance Management under tebuconazole.
	ARTISAN 3.6E	13-21 fl.oz.	
	+		
	chlorothalonil		
	BRAVO WEATHER STIK	1 pt.	
	ECHO 720 6F	1 pt.	
	EQUUS 720	1 pt.	
	ARTISAN 3.6.E	26-32 fl.oz.	Use higher rate in fields with history of severe white mold. Apply two to three times. Make first spray 45 to 60 days after planting, depending on weather patterns and disease pressure or at first sign of disease. Apply the second spray approximately 21 to 30 days later. When using the low rate (26 fluid ounces) of Artisan, a third spray may be made as needed. Make scheduled leaf spot sprays in between each application of Artisan 3.6E. In areas where late leaf spot or peanut rust is common, tank mix Artisan 3.6E with a chlorothalonil fungicide.

Disease	Fungicide and Formulation	Amount of Formulation Per 100 Lb. of Seed	Comments
Early and Late Leaf Spot, Peanut Rust, Rhizoctonia Limb Rot, Web Blotch, White Mold			
	pyraclostrobin		Make no more than two applications of Headline as part of a
	HEADLINE 2.09E	6-15 fl.oz.	standard calendar spray program. Applications may be made at 14- to 21-day intervals. Do not make more than two consecutive applications of Headline. At application intervals longer than 14 days, apply 9 to 15 fluid ounces per acre. Shorten intervals and increase rates when weather patterns favor rapid disease spread or when heavy leaf shed and spotting have been seen. Also use the 9-to-15-fluid-ounces-per-acre rule for while mold control. Headline may be included in a fungicide program with Bravo Ultrex/ Echo/Equus, Tilt, Propimax, Artisan, and Moncut. To enhance activity against leaf spot diseases at extended treatment intervals, add a low rate of a non-ionic surfactant such as Induce to Headline tank mixtures.
		12-15 fl.oz.	**FOR CBR SUPPRESSION.** See above paragraph for application direction and intervals.
Early and Late Leaf Spot, Peanut Rust, Rhizoctonia Limb Rot, White Mold			
	fluoxastrobin		Make no more than two consecutive applications of Evito at 14-
	EVITO	5.7 fl.oz.	day intervals in a seven-application fungicide treatment program. For season-long leaf spot and rust control, apply the recommended rate of a non-strobilurin fungicide before and after applications of Evito for a total of approximately seven fungicide applications a year. Make no more than three applications of Evito per year. Evito is a strobilurin fungicide. See guidelines for Strobilurin Fungicide Resistance Management under azoxystrobin.

Disease	Fungicide and Formulation	Amount of Formulation Per 100 Lb. of Seed	Comments
Early and Late Leaf Spot, Peanut Rust, Rhizoctonia Limb Rot, Suppression of CBR, White Mold			
	tebuconazole		Make four consecutive sprays (block) at 12- to 14-day intervals, beginning no earlier than 45 days and preferably about 60 days after planting or no later than early July. Apply a recommended rate of a chlorothalonil fungicide before and, if needed, after the block of four Folicur sprays. **For optimum leaf spot control,** tank mix with a chlorothalonil fungicide, particularly in Baldwin and Mobile Counties. ***Tank mix*** with a chlorothalonil fungicide at a rate listed under Triazole Fungicide Resistance Management (see below) in any field that has been sprayed earlier that year with Tilt, Bumper, or Propimax + chlorothalonil only. When applied alone, add the lowest recommended rate of a ***non-ionic surfactant*** to tebuconazole fungicides. ***No surfactant*** is needed when a tebuconazole fungicide is tank mixed with a chlorothalonil fungicide. During periods of frequent rain showers, however, tank mixing a tebuconazole fungicide with a chlorothalonil fungicide is strongly recommended. **Never** apply reduced rates of a triazole fungicide. **NOTE:** Overuse of stickers and other spray adjuvants may reduce fungicide effectiveness against white mold, particularly on dryland peanuts. In irrigated fields, water peanuts 24 to 48 hours after fungicide application. If rain occurs within 24 hours of an application, apply a chlorothalonil fungicide within 7 days. During drought conditions, try to apply tebuconazole fungicides to dryland peanuts a day or two before rain is forecast. See Extension Circular ANR-368, "Soilborne Diseases of Peanuts," for additional information on resistance management strategies. **Triazole Fungicide Resistance Management.** Continued use of triazole fungicides (Artisan, Bumper, Orius, Propimax, Tebustar, Trisum, Tebuzol, and Tilt 3.6E) in the same field year after year may eventually cause leaf spot or white mold control failures due to fungicide resistance. If more than ***four*** applications of one or more triazole fungicides are planned, tank mix Bravo or Echo at specified rates with ***all*** triazole fungicide sprays applied in the field in the current year.
	ORIUS 3.6F	7.2 fl.oz.	
	TRISUM 3.6 F	7.2 fl.oz	
	TEBUSTAR 3.6 L	7.2 fl.oz	
	TEBUZOL 3.6F	7.2 fl.oz	
	tebuconazole		
	ORIUS 3.6F	7.2 fl.oz	
	+		
	chlorothalonil		
	BRAVO WEATHER STIK	0.75-1 pt.	
	or		
	BRAVO ULTREX	0.7-0.9 lb.	
	or		
	ECHO 6F	0.5-1 pt.	
	tebuconazole + chlorothalonil		
	ECHO MUSCLE FUNGICIDE TWIN PACK	1 pt. + 7.2 fl.oz.	

Disease	Fungicide and Formulation	Amount of Formulation Per 100 Lb. of Seed	Comments
Early and Late Leaf Spot, Peanut Rust, Rhizoctonia Limb Rot, Suppression of CBR, White Mold (cont.)			
			NOTE: Under drought conditions, tank mixing chlorothalonil with tebuconazole may decrease this fungicide's effectiveness against white mold and limb rot on dryland peanuts but not on irrigated peanuts. If tebuconazole has been applied to peanuts in the same field for 3 consecutive years, consider applying Abound 2SC, Moncut + Bravo, Headline, or Artisan instead of tebuconazole for control of soilborne and foliar diseases of peanuts. **COMMENTS:** Tebustar, Trisum, Tebuzole, Orius, Propimax, and Tilt have both protective and curative activity against leaf spot fungi while chlorothalonil fungicides are only protective. If sprays are delayed by rain, use Tebustar, Trisum, Tebuzole,, Orius, Propimax, or Tilt to knock out new leaf spot infections. When using ground equipment, apply in 10 to 20 gallons of spray mixture per acre at 60 to 80 psi and a minimum of 5 gallons of spray mixture per acre by air. Replace worn nozzles and recalibrate spray equipment. **DO NOT** feed peanut hay treated with any of the above fungicides to livestock.
Leaf Spot Advisory: *Bravo Weather Stik, Bravo Ultrex, Orius, Propimax, and Tilt may be applied according to the rules of a leaf spot forecasting advisory such as AU-Pnut*. Refer to the product label for specific guidelines concerning the use of any of the above fungicides in a disease forecasting or advisory program.* ***If white mold and limb rot control is desired, do not use a leaf spot advisory to schedule tebuconozole applications.***			
Early and Late Leaf Spot, Peanut Rust, Web Blotch, White Mold, CBR, Rhizoctonia Limb Rot			
	prothioconazole + tebuconazole PROVOST 433SC	7-8 fl.oz.	**For control of leaf spot diseases, rust, web blotch, white mold, Rhizoctonia limb rot.** Make four consecutive sprays (block) beginning about 60 days after planting or starting no later than mid-July and repeat at approximately 14-day intervals. Apply a recommended rate of a chlorothalonil fungicide before and as needed after the four-spray Provost block. Prothioconazole and tebuconazole are both triazole (sterol) fungicides. See comments under Triazole Fungicide Resistance Management.
		10.7 fl.oz.	**For CRB Suppression.** See above application guidelines for CBR suppression.
Rhizoctonia Limb Rot			
	tebuconazole + trifloxystrobin ABSOLUTE 500SC	7 fl.oz.	Apply 90 and 104 days after planting for Rhizoctonia limb rot control.

Disease	Fungicide and Formulation	Amount of Formulation Per 100 Lb. of Seed	Comments
Rhizoctonia Limb Rot, White Mold			
	flutolanil MONCUT 70DF	1.4-2.9 lb.	For a single-application program, apply about 50 to 70 days after planting or at first sign of disease. Use higher rate in fields known to have a high incidence of disease. ***Moncut will not control early or late leaf spot, peanut rust, or web blotch.*** Apply a recommended leaf spot fungicide to control the above diseases. See chlorothalonil for leaf spot control guidelines.
		0.7-1.4 lb.	For a two-application program, apply first spray 50 to 70 days after planting or at first sign of disease and follow with a second spray about 30 days later. Use higher rate in fields with high incidence of disease. See chlorothalonil for leaf spot control guidelines.
		0.4-0.7 lb.	For a four-application program, tank mix Moncut 50W with scheduled leaf spot fungicide beginning about 50 to 70 days after planting or at first sign of disease in late June to mid July. Repeat sprays of Moncut plus a chlorothalonil fungicide at 10- to 14-day intervals for a total of four sprays. See chlorothalonil for leaf spot control guidelines.
	pyraclostrobin HEADLINE 2.09E	9-15 fl.oz.	Make two or three applications approximately 60 to 100 days after planting. At treatment intervals longer than 14 days, apply Headline at 15 fluid ounces per acre. Where severe yield losses to white mold have previously occurred, Headline may be alternated with Artisen 3.6F, or Moncut DF + Bravo Ultrex/Echo/Equus. See label for more information on application guidelines.

* See 2008 AU-Pnut Rules for Peanut Leaf Spot Control, page 22.

Disease	Fungicide and Formulation	Amount of Formulation Per 100 Lb. of Seed	Comments
Nematodes (Peanut Root-Knot, Ring, Lesion)			
	General Comments on Nematode Control: *In root-knot infested fields, consider planting an early-maturing runner-peanut cultivar, such as Andru II, on recommended planting dates in combination with a recommended nematicide to reduce the impact of nematodes on peanut yield and grade. To avoid some nematode damage, plant heavily root-knot infested fields in mid to late April. Avoid planting the Southern Runner peanut cultivar in root-knot infested fields. See Extension Circular ANR-393, "Nematode Pests of Peanuts," for more information on nematode control.*		
Preplant			
	1-3D TELONE II	4.5-6 gal. (row) 6-9 gal. (broadcast)	Apply as a broadcast plow sole treatment in fall or early spring for suppression of light to moderate nematode infestations. Treat 7 to 10 days before planting peanuts or a cover crop. For best results, apply with mold board plow to a depth of 10 inches below final planting surface. Seal furrow or drag immediately after application. Soil should remain undisturbed for at least 1 week prior to planting. Rates up to 9 gallons per acre may be required to control heavy root-knot nematode infestations. Refer to product label for additional application information. Under heavy nematode pressure, a supplemental application of Temik 15G at-plant or early postplant is suggested.
At-Plant			
	aldicarb TEMIK 15G	14-20 lb.	Apply Temik on a 6- to 12-inch band centered over the row. Lightly incorporate to a depth of 1 to 2 inches. **DO NOT** apply a full nematicidal rate of a granular nematicide as a seed furrow treatment. **DO NOT** use treated peanut hulls and hay as livestock feed.
At-Plant + Postplant			
	aldicarb TEMIK 15G	10 lb. at-plant + 10 lb. post-plant	Apply at-plant on a 6- to 12-inch band and cover with soil. Make postplant application on a 12- to 18-inch band over the row center ***no later*** than 40 days after seedling emergence and before last cultivation. Immediately incorporate and water irrigated fields. **DO NOT** use on Spanish peanuts.

Table 4. Properties of Fungicides and Nematicides Used on Peanuts That May Affect Water Quality

Common Name	Trade Name	Surface-Loss Potential[1]	Leaching Potential[2]
Aldicarb	Temik	Small	Large
Chlorothalonil	Bravo, Echo	Medium	Small
Ethoprop	Mocap	Medium	Large
Propiconazole	Propimax, Tilt	Medium	Medium
Tebuconazole	Folicur, Orius	NA	NA

[1] The surface-loss potential indicates the tendency of the pesticide to move with sediment in runoff.
[2] The leaching potential indicates the tendency of the pesticide to move in solution with water and to leach below the root zone.
NA = Information not available.

SCOUTING TIPS

Leaf Spot. The effectiveness of your peanut leaf spot spray program should be periodically evaluated. If disease control is not adequate, adjustments can be made to prevent serious yield losses. If leaf spot control is fair to poor, shorten the interval between fungicide applications or increase the application rate to the highest amount on the label. Disease development will continue 14 days or more before any improvement in leaf spot control will be seen following this change in your spray program. See ANR-598, "Peanut Pest Management Scout Manual," for a complete description of peanut scouting procedures. Disease management programs are described in detail in ANR-369, "Foliar Diseases of Peanut."

White Mold. Unlike scouting for leaf spot and insects, fields should be checked once a year for white mold just before or after digging. Simply count the number of white mold hits in 100 feet of row. Sample plants at several locations in a field. A hit is considered a dead plant or group of plants no more than 1 row foot in length. As a rule of thumb, an average of three to four hits per 100 row feet indicates that a fungicide treatment would be justified in the following season. If the hit count is extremely high, rotation to a non-host crop is recommended. White mold control procedures are described in detail in ANR-368, "Soilborne Diseases of Peanut."

Cylandiocladium Black Root Rot (CBR). Check peanuts for CBR just before harvest. Symptoms can be confused with those of TSWV (tomato spotted wilt virus), white mold, or peanut root-knot nematode. Typically, the tap root of CBR-damaged peanuts appears shredded. The brick-red fruiting bodies of the causal fungus usually appear on the rotted crown or pegs. Use the same scouting procedures that are described for white mold. See ANR-368, "Soilborne Diseases of Peanut," for more information on CBR.

Tomato Spotted Wilt Virus (TSWV) can have a sizable impact on the yield of susceptible peanut cultivars. Fields should be checked for TSWV levels in August or September when moisture levels are good for plant growth. A rough estimate of the incidence of this disease can be made by counting the number of TSWV hits of diseased plants in 1 foot of row down 100 feet of row. Yield loss to TSWV really becomes noticeable when hit counts over four or five locations in a field exceed 20 percent.

Nematodes. Collection of soil samples for nematode assay is recommended in every field going into peanuts no matter what its previous crop history. Particular attention should be paid to fields in continuous peanuts, summer fallow behind peanuts, soybeans, or soybean-peanut rotations due to the high risk of nematode problems associated with poor rotation practices. See ANR-393, "Nematode Pests of Peanuts," for more information on nematode control procedures.

Samples for nematode assay must be collected in late summer through fall when nematode populations in the soil are greatest. Do not sample for nematodes in the spring. Nematode populations are usually so low at this time of the year that it is impossible to make accurate control recommendations. See ANR-114, "Collecting Soil and Root Samples for Nematode Analysis," for additional information on collecting and handling soil samples.

2008 AU-PNUT RULES FOR PEANUT LEAF SPOT CONTROL

In order to use this method for controlling leaf spot on peanuts, you need to know the following.

1. A "rain event" is any day (a 24-hour period) with more than 0.1 inch of rain and/or irrigation or it is fog that begins before 8:00 p.m.

2. The AU-Pnut Weather Forecast provides you:
a) the 5-day average forecast for rain;
b) the rain forecast (percent chance of rain) for each day within that 5-day average.

You will use the 5-day average forecast until you plan to irrigate. Then, you will use the forecast for each day.

3. The day you irrigate, the forecast automatically becomes 100 percent, and it becomes your fifth day. So, to figure your 5-day forecast, substitute 100 percent for the forecast on the planned irrigation day. Then, add the forecasts for each day and divide by five.

Timing for the First Spray of The Season

From true cracking, count the number of rain events.
Spray if:
• You have counted four rain events since cracking and the 5-day forecast calls for a 50-percent or greater chance of rain.
Or,
• You have counted five rain events since cracking and the 5-day forecast calls for a 40-percent or greater chance of rain.
Or,
• There have been six rain events; *spray immediately.*

If leaf spot is seen (two or more spots per plant) in the lower leaves of the plant, *spray immediately.*

Timing for All Other Sprays

Ten days after your last leaf-spot spray, begin counting rain events and check the 5-day average forecast daily. To accurately determine days since application, count the day you sprayed as Day 0; the day after will be Day 1, and so on. When you reach Day 10, start counting rain events again and checking the 5-day average forecast.
Spray if:
• No rain event has been recorded and the average chance of rain for the next 5 days is 50 percent or greater. *Or,*
• One rain event has been recorded and the average chance of rain for the next 5 days is 40 percent or greater. *Or,*
• Two rain events have been recorded and the average chance of rain for the next 5 days is 20 percent or greater. *Or,*
• There have been three rain events; *spray immediately.*

If you are within 14 days of harvest, stop fungicide applications.

Weather Forecast

The AU weather forecast for each day is available on the Internet 24 hours a day at the Agricultural Weather Information Service Web page: www.awis.com. To access this information, click on peanut weather, then Alabama, and finally AU-Pnut Leaf Spot. On-line information includes both the precipitation forecasts for each of the next 5 days and also the 5-day average precipitation forecast. Check the forecast each morning as you plan that day's activities.

On-line Registration

To get the on-line rain events needed to run AU-Pnut in each of your peanut fields, you must register each of them with AWIS, using the on-line registration form found on the AWIS Peanut Weather Web site. To locate your field(s) within the Doppler Radar output grid, the longitude and latitude for each peanut field must be provided to AWIS. A hand-held GPS unit can be used to generate the necessary coordinates. To get the full benefit from AU-Pnut, be sure to register your field(s) with AWIS before true ground cracking occurs. Beginning on that day, start totaling up the number of rain events needed to trigger the first fungicide application.

You may also use the AU-Pnut advisory without the Doppler Radar-generated precipitation data. Place a tapered rain guage, which should read to 0.10 inch, in the middle or end of a minimum of one field within a continuous 640-acre block of land. Since true ground cracking is used to start the AU-Pnut advisory, you will have to separately monitor rainfall totals where peanuts have been planted on different days within each 640-acre block. This situation is most likely to occur where peanut planting is delayed or separated by four or more days.

If numerous showers occur after true ground cracking, the AU-Pnut advisory may trigger the first fungicide spray earlier than the standard 14-day calendar program. If the peanuts are relatively young, the first and, sometimes, the second fungicide application may be banded directly over the middle of the peanut canopy.

See the Web site www.aces edu/dept/IPM/ for internet access to peanut IPM publications and www.awis.com for access to the AU-PNUT Leaf Spot Advisory.

All peanut disease and nematode management circulars are distributed by Alabama Cooperative Extension System.

Disease and Nematode Control section prepared by Austin K. Hagan, *Extension Plant Pathologist,* Alumni Professor, Entomology and Plant Pathology, Auburn University; and J. Ronald Weeks, former *Extension Entomologist*, Associate Professor Emeritus and Visiting Professor, Entomology and Plant Pathology, Auburn University.

The recommendations in this section are based primarily on the research of Rodrigo Rodriguez-Kabana and Kira Bowen, Professors, Department of Plant Pathology, Auburn University.

WEED CONTROL

Herbicides used for weed control in peanuts can generally be classified according to method of application.

Preplant. Applied and incorporated before planting. These are generally effective on grasses and small-seeded broadleaf weeds.

Preemergence. Applied on soil surface either broadcast or banded at or shortly after planting.

Postemergence. Applied after peanuts have emerged as an over-the-top application.

In this section, herbicides are grouped under these three headings. Rates are given in the amount per acre of material in the can or bag on a broadcast basis. The second column gives the pounds of active ingredient applied per acre on a broadcast basis. For band application, reduce the amount by using the following formula: Band width ÷ row width x broadcast rate per acre = rate per acre for band application.

Table 5. Peanut Weed Control

Herbicide Trade Name (Rate/Acre Broadcast)	Herbicide Common Name (Active Herbicide/Acre)	Comments
	Preplant Incorporated	
DUAL II MAGNUM 7.64SC DUAL MAGNUM 7.62EC CINCH 7.64 EC (1-1.33 pt.)	s-metolachlor (0.96-1.27 lb.)	Apply at planting and shallowly incorporate into soil (no more than 2 inches). For better yellow nutsedge control on coarse-textured soils, apply 2 pints per acre and incorporate. Non-uniform incorporation may result in crop injury expressed as reduced crop emergence and stunted growth of emerged plants. Generic formulations are available but may require a higher application rate to give comparable control. Read the label carefully and use the appropriate rate.
OUTLOOK 6.0 (16-21 fl.oz.)	dimethenamid (0.75-0.98 lb.)	Outlook may be applied preplant incorporated, preemergence, or postemergence. **DO NOT** preplant incorporate Outlook on coarse-textured soils containing less than 1.5 percent organic matter. **DO NOT** apply within 80 days of harvest. A single or split application may be used. Provides control of hophornbean copperleaf and eclipta and suppresses Florida beggarweed, yellow nutsedge, and sicklepod. **DO NOT** apply more than 21 fluid ounces of Outlook per acre per year. Rainfall, irrigation, or soil incorporation into the top 2 inches of soil is needed for consistent control.
PENDIMAX 3.3 PROWL 3.3 (1.8-2.4 pt.) or PROWL H_2O (2 pt.)	pendimethalin (0.75-1 lb.) (0.95 lb.)	Apply before planting and incorporate thoroughly into the top 2 inches of soil within 7 days of application. Provides good control of Texas panicum, pigweeds, and Florida pusley. May be applied with liquid fertilizer for simultaneous application. May be tank mixed with Dual, Outlook, or Pursuit.
PURSUIT 70DG (1.44 oz.)	imazethapyr (0.063 lb.)	Pursuit may be applied preplant incorporated, preemergence, or early postemergence. **DO NOT** apply more than 1.4 ounces total per acre per growing season. When applied as a preplant incorporated treatment, it should be shallowly and uniformly incorporated into soil. **DO NOT** apply to dry soil, especially if significant rain is expected after planting. It may be tank mixed with Prowl/Pendimax or Sonalan. See label for recropping restrictions.
SONALAN HFP (1.5-2.5 pt.)	ethalfluralin (0.6-0.94 lb.)	Apply just before planting and thoroughly incorporate into the top 2 to 3 inches of soil within 2 days of application. May be applied simultaneously with liquid fertilizer. May be tank mixed with Dual, Outlook, or Pursuit.

Herbicide Trade Name (Rate/Acre Broadcast)	Herbicide Common Name (Active Herbicide/Acre)	Comments
	Preplant Incorporated (cont.)	
STRONGARM 84WDG (0.45 oz.)	diclosulam (0.024 lb.)	Strongarm may be applied preplant incorporated or preemergence to the soil surface. Incorporation through tillage, irrigation, or timely rainfall is needed to provide optimal weed control. Can be tank mixed with grass herbicide such as Prowl/Pendimax, Sonalan, Dual, or Outlook. Timely application of postemergence herbicides timed 14 to 17 days after peanut emergence can improve overall control, especially on escaped weeds such as sicklepod, Florida beggarweed, and Texas panicum. See label for recropping restrictions.
	Preemergence	
DUAL II MAGNUM DUAL MAGNUM CINCH 7.64 EC (1.33-2 pt.)	s-metolachlor (1.27-1.9 lb.)	Apply as a band or broadcast treatment to the soil surface during or after planting but before crop or weeds emerge. Use 2 pints per acre for partial control of Florida beggarweed. Failure to calibrate properly may result in excessive herbicide rate. See label for correct calibration procedure. **DO NOT** use Dual/Cinch as a preemergence treatment following the use of Dual/Cinch as a preplant soil incorporated treatment.
VALOR 51WDG (3 oz.)	flumioxazin (0.094 lb.)	Apply only as a preemergence surface application. Apply to peanuts planted at least 1.5 inches deep. Application must be made within 2 days after planting and before peanut emergence. Applications made later or when peanuts have begun to crack or are emerged will result in severe crop injury. May be tank mixed with Dual or Outlook. Timely application of postemergence herbicides after peanut emergence can improve overall control, especially on escaped weeds such as sicklepod, yellow nutsedge, and cocklebur. **DO NOT** apply more than 3 ounces of Valor per acre per year. Completely clean spray equipment **THE SAME DAY OF USE** as directed by herbicide label.
	Postemergence	
BASAGRAN 4 (1.5-2 pt.)	bentazon (0.75-1 lb.)	Apply over-the-top of peanuts for control of bristly starbur and common cocklebur. Use 1.5 pints per acre when bristly starbur has up to four leaves and is no taller than 6 inches. Use 2 pints per acre when bristly starbur is no taller than 3 inches and common cocklebur is no taller than 10 inches. Good spray coverage is essential for effective weed control. Use no more than 4 pints per acre per season. Will not control Florida beggarweed or sicklepod. Peanuts often exhibit chlorotic mottling after application but recover in 7 to 10 days. The addition of a crop oil concentrate at the rate of 1 quart per acre will improve the control of yellow nutsedge. Early season application of bentazon at high rates following in-furrow application of Di-Syston may infrequently result in **SEVERE** peanut injury. Rain-free period is 4 hours.

Herbicide Trade Name (Rate/Acre Broadcast)	Herbicide Common Name (Active Herbicide/Acre)	Comments
	Postemergence (cont.)	
BUTOXONE 175 (1-1.75 pt.) or BUTOXONE 200 (0.9-1.6 pt.) or BUTOXONE 7500 (0.3-0.5 lb.) or BUTYRAC 175 (0.9-1.1 pt.) or BUTYRAC 200 (0.8-1 pt.)	2,4-DB (0.22-0.38 lb.) (0.22-0.4 lb.) (0.22-0.38 lb.) (0.22-0.275 lb.) (0.2-0.25 lb.)	Apply over-the-top of peanuts 2 to 12 weeks after planting to control common cocklebur, morningglory, and other broadleaf weeds. A second application may be made 3 weeks after the first, if needed. Gives poor control of Florida beggarweed and large sicklepod. **DO NOT** apply more than twice per season. Rain-free period is 1 hour. **DO NOT** tank mix with postemergence grass herbicides.
CADRE 70DG (1.44 oz.) or IMPOSE (4 oz.) + Non-ionic Surfactant (1 qt./100 gal. spray mix) or Crop Oil Concentrate (1 qt.)	imazapic (0.063 lb.) + non-ionic surfactant or crop oil concentrate	Apply over-the-top of peanuts when problem broadleaf weeds are less than 2 inches tall and nutsedges are less than 4 inches tall. This usually occurs about 10 to 14 days after peanut emergence. Controls problem weeds such as bristly starbur, wild poinsettia, morningglory, and Florida beggarweed. If Florida beggarweed is taller than 2 inches at time of treatment, weed regrowth will occur. If conditions remain dry after application, a shallow cultivation 14 days after treatment will enhance control. See label for recropping restrictions. Under adverse application conditions (dry weather, large weeds), the use of a crop oil concentrate and fertilizer (spray grade ammonium sulfate at 2.5 pounds per acre or liquid fertilizer at 1 to 2 quarts per acre) is recommended. **DO NOT** apply within 90 days of harvest. Rain-free period is 3 hours.
COBRA 2EC (12.5.oz.) + Non-ionic Surfactant (1 qt./100 gal. spray mix) or Crop Oil Concentrate (1-2 pt.)	lactofen (0.2 lb.) + non-ionic surfactant or crop oil concentrate	Apply over-the-top of peanuts when peanuts have at least six true leaves to control small, actively growing weeds. Treated peanuts will exhibit leaf crinkling, brown leaf speckling, and bronzing. Applications made earlier will result in growth suppression, which may be prolonged by poor growing conditions. Add a non-ionic surfactant to spray mix when weeds are small and growing. Add a crop oil concentrate to spray mix when weeds approach maximum label size. **DO NOT** make more than two applications of Cobra per season. **DO NOT** apply within 90 days of harvest. Rain-free period is 1 hour.

Herbicide Trade Name (Rate/Acre Broadcast)	Herbicide Common Name (Active Herbicide/Acre)	Comments
	Postemergence (cont.)	
GRAMOXONE INTEON 2 (8 fl.oz.) or FIRESTORM 3 (5.5 fl.oz.) + Non-ionic Surfactant	paraquat (0.125 lb.) or (0.125 lb.) + non-ionic surfactant	Apply postemergence to peanuts when weeds are small, using ground equipment. Apply in 20 or more gallons of water per acre and add 1 pint of a non-ionic surfactant per 100 gallons of spray mix. A second application can be made but not later than 28 days after ground cracking. **DO NOT** make a second application if peanuts show injury from previous treatment. May be tank mixed with Storm, Pursuit, Basagran, or 2,4-DB to improve control of some weeds. See label for appropriate use rates. The addition of Basagran to the spray mix reduces peanut injury compared to other paraquat treatments. Basagran at 0.5 pint per acre is usually sufficient to reduce foliar burn and to provide control of small-flower morningglory. However, Basagran at 1 pint per acre is needed to control weeds such as small bristly starbur and prickly sida. Gramoxone and Firestorm are **RESTRICTED USE** pesticides. Rain-free period is 1 hour.
POAST PLUS 1E (1.5 pt.) or POAST 1.5 (1 pt.) + Crop Oil Concentrate (2 pt.)	sethoxydim (0.188 lb.) + crop oil concentrate	Apply over-the-top of actively growing peanuts to control small annual grasses, including Texas panicum. A crop oil concentrate must be added to the spray mix for good grass control. **DO NOT** mix Poast with any other pesticide, additive, or fertilizer. Poast does not control broadleaf weeds or sedges (nutgrass). Apply in a final spray volume of 20 gallons per acre. **DO NOT** apply more than 0.47 pound active ingredient per acre per year. Higher use rate needed to control perennial grasses such as bermudagrass and Johnsongrass. **DO NOT** apply within 40 days of harvest. Rain-free period is 1 hour.
PURSUIT 70DG (1.44 oz.) or PURSUIT 2L (4 fl.oz.) + Non-ionic Surfactant	imazethapyr (0.063 lb.) + non-ionic surfactant	Apply over-the-top of peanuts for control of problem weeds such as nutsedge, morningglory, and wild poinsettia. Application should be made to small, actively growing weeds. This usually corresponds to the time interval from 7 to 14 days after planting (at cracking) until 14 days after crop emergence. The most consistent control has occurred when application is made during the at-cracking stage of growth. Use a non-ionic surfactant at the rate of 1 quart per 100 gallons of spray mix. Pursuit can be tank mixed with Starfire, Basagran, or 2,4-DB. **DO NOT** apply more than 1.44 ounces total per acre per growing season. **DO NOT** apply within 85 days of harvest. See label for recropping restrictions. Rain-free period is 1 hour.
SELECT 2EC ARROW 2EC (6-8 fl.oz.) + Crop Oil Concentrate (1 qt.)	clethodim (0.09-0.125 lb.) + crop oil concentrate	Apply over-the-top of actively growing peanuts to control small annual grasses. Use low rate on small grasses and high rate on weeds of maximum label size and under conditions of heavy annual grass pressure. Select/Arrow does not control broadleaf weeds or sedges (nutgrass). **DO NOT** apply within 40 days of peanut harvest. See label for higher use rates for perennial grass control. **DO NOT** tank mix with chlorothalonil products because reduced grass control will result. Rain-free period is 1 hour.

Herbicide Trade Name (Rate/Acre Broadcast)	Herbicide Common Name (Active Herbicide/Acre)	Comments
	Postemergence (cont.)	
STORM 4L (1.5 pt.) + Crop Oil Concentrate (2 pt.) or Non-ionic Surfactant (2 pt./100 gal. spray mix)	bentazon (0.5 lb.) + aciflurofen (0.25 lb.) + crop oil concentrate non-ionic surfactant	Apply over-the-top of peanuts from ground cracking through the full expansion of the second compound leaf. Timing is critical to control small weeds such as morningglory, cocklebur, pigweed, prickly sida, and ragweed. Add a non-ionic surfactant or crop oil concentrate to the spray mix. May be mixed with 2,4-DB to control larger weeds, including sicklepod. **DO NOT** apply within 75 days of harvest. Rain-free period is 4 hours.
ULTRA BLAZER 2L (1.5 pt.) + Non-ionic Surfactant	aciflurofen (0.38 lb.) + non-ionic surfactant	Apply over-the-top of actively growing peanuts not under stress. For best results, apply when weeds are in the two- to four-leaf stage and actively growing. Controls a number of broadleaf weeds, including morningglory and wild citron. Apply with flat fan nozzles calibrated to deliver at least 20 gallons of spray mix per acre at 40 to 60 psi. Use 80-percent active non-ionic surfactant at the rate of 1 pint per 100 gallons of spray mix. Additional surfactant is required for maximum control of certain weeds. Refer to label for specific directions. Peanuts may exhibit leaf burning, crinkling, or bronzing. Under adequate growing conditions, they will outgrow this condition and continue to develop normally. **DO NOT** apply more than 2 pints Ultra Blazer per acre per growing season. **DO NOT** apply within 75 days of harvest. Rain-free period is 4 hours. Reduced rates will control showy crotolaria and hemp sesbania.
	Layby	
CLASSIC 25DF (0.5 oz.) + Non-ionic Surfactant (2 pt./100 gal. spray mix)	chlorimuron (0.125 oz.) + non-ionic surfactant	Apply over-the-top of peanuts from 60 days after crop emergence to within 45 days of harvest. Application should be made to Florida beggarweeds that are less than 10 inches tall and are actively growing. Make **ONLY** one application per season. Classic will not effectively control regrowth of Florida beggarweed following a previous application of Cadre. **DO NOT** use on such sensitive varieties as Early Bunch. Prior to use, consider the rotation instruction on the label. Classic may be mixed with Bravo or 2,4-DB. Combinations of Classic plus 2,4-DB result in significantly more foliar crop injury compared to Classic applied alone. Applications of Classic from 60 days after crop emergence to 45 days before harvest on current tomato spotted wilt-tolerant peanut varieties may result in increased tomato spotted wilt symptoms which may impact peanut yield. Rain-free period is 1 hour.
DUAL MAGNUM (1-1.33 pt.)	s-metolachlor (0.95-1.27 lb.)	Apply to the soil immediately after the last cultivation but not within 90 days of harvest. **DO NOT** apply more than 2.67 pounds active ingredient of Dual during any one year. Use this treatment when late germinating weeds are expected as a problem. Provides partial preemergence control of Florida beggarweed when activated by rain or irrigation.

Table 6. Estimated Effectiveness of Recommended Preplant Incorporated and Preemergence Herbicide Treatments on Important Weeds Infesting Peanuts in Alabama and Properties That May Affect Water Quality

WEEDS	HERBICIDES							
	Cinch/ Dual (PPI)	Outlook (PPI)	Prowl Pendimax (PPI)	Sonalan (PPI)	Strongarm (PPI)	Pursuit (PPI, EPOT)	Cinch /Dual (PRE)	Valor (PRE)
GRASSES								
Bermudagrass	0	0	4	4	0	0	0	0
Broadleaf Signalgrass	7	9	8	8	0	6	8	6
Crabgrass	9	9	9	9	0	6	9	6
Crowfootgrass	9	9	9	9	0	4	9	--
Fall Panicum	7	9	8	8	0	6	8	6
Goosegrass	9	9	9	9	0	6	9	6
Texas Panicum	5	4	7	8	0	4	5	6
SEDGES								
Purple Nutsedge	1	0	0	0	7	8	1	2
Yellow Nutsedge	8	8	0	0	7	8	5	2
BROADLEAVES								
Bristly Starbur	0	0	0	0	9+	6	3	6
Burgherkin	0	0	0	0	--	8	3	8
Carpetweed	8	8	0	0	--	0	6	0
Citronmelon	0	0	0	0	--	--	0	8
Cocklebur	0	0	0	0	9+	7-8	0	3
Common Ragweed	0	7	0	0	8	5	0	7
Cowpea	0	0	0	0	0	0	0	6
Crotolaria	0	0	0	0	--	3	0	7
Eclipta	0	6	0	0	8	0	0	8
Florida Beggarweed	6	6	1	1	7-8	3	6	9
Florida Pusley	9	8	9	9	8	6	8	9
Groundcherry	8	8	0	0	0	0	7-8	0
Horsenettle	0	0	0	0	--	0	0	0
Hophornbean Copperleaf	5	7	0	0	8-9	0	5	8-9
Jimsonweed	0	0	0	0	8	8	0	8
Lambsquarters	6	0	9	9	8	6	6	9
Morningglory	0	0	2	2	8+	7	0	8
Morningglory, small flower	0	0	2	2	8	9	0	9
Pigweed	9	9	8	8	9	8	9	8-9
Prickly Sida	5	8	0	0	8	8	3	8
Purslane	8	7	8-9	8-9	0	0	8	8-9
Redweed	0	0	0	0	--	--	0	8
Sicklepod	4	4	1	1	6	0	6	0
Spurge	4	7	0	0	0	7	4	0
Tropic Croton	0	0	0	0	6	0	0	7
Tropical Spiderwort	8-9	7	0	0	8	0	8-9	6
Wild Poinsettia	0	0	0	0	9	9	0	8
Wild Radish	0	0	0	0	0	9	0	7
Wooly Croton	0	0	0	0	5	0	0	5
Surface-Loss Potential[2]	M	--	M	M	--	--	M	--
Leaching Potential[3]	M	--	S	S	--	--	M	--

[1] Effectiveness ratings are based on observations of research plots and field use under average weather conditions for several years by weed control workers in Alabama. Leaching and surface-loss potential ratings are based in part on herbicide chemical characteristics and pesticide behavior models developed by USDA scientists as well as on field experience.
[2] The surface-loss potential indicates the tendency of the pesticide to move with sediment in runoff.
[3] The leaching potential indicates the tendency of the pesticide to move in solution with water and to leach below the root zone into deep percolation.
KEY TO EFFECTIVENESS RATINGS AND ABBREVIATIONS:
9 = 90% to 100% effective; 0 = Not effective; -- = Information not available. PPI = Preplant Incorporated; EPOT = Early Postemergence; PRE = Preemergence; POST = Postemergence. S = Small; M = Medium; L = Large.

Table 7. Estimated Effectiveness of Recommended Postemergence Herbicide Treatments on Important Weeds Infesting Peanuts in Alabama and Properties That May Affect Water Quality

WEEDS	HERBICIDES									
	Basagran (POST)	Butoxone (POST)	Impose Cadre (POST)	Classic (POST)	Cobra (POST)	Firestorm Gramoxone (POST)	Poast Plus Select (POST)	Storm (POST)	Ultra Blazer (POST)	Dual Magnum (LAYBY)
GRASSES										
Bermudagrass	0	0	0	0	0	0	6-8	0	0	0
Broadleaf Signalgrass	0	1	5	0	1	8	8	0	1	4
Crabgrass	0	1	8	0	2	4	8	0	2	9
Crowfootgrass	0	1	7	0	2	8	8	0	2	9
Fall Panicum	0	1	7	0	1	8	8	0	1	3
Goosegrass	0	1	6	0	2	8	8	0	2	9
Texas Panicum	0	0	5	0	0	8	8	0	0	4
SEDGES										
Purple Nutsedge	0	0	9	4	0	4	0	0	0	0
Yellow Nutsedge	7	2	8	5	2	5	0	4	2	4
BROADLEAVES										
Bristly Starbur	6	6	7	6	4	3	0	8	6	0
Burgherkin	6[2]	6[2]	8	4	7	5	0	6	8[2]	3
Carpetweed	0	0	6	0	8	0	0	8	8-9	0
Citronmelon	0	7	8	0	8	6	0	8	8	0
Cocklebur	9	8	9+	9	9	4	0	9	7	0
Common Ragweed	6	7	5	7	9	6	0	8	8	0
Cowpea	2	6	6	7	3	7	0	0	4	0
Crotolaria	3	6	--	--	9	4	0	9	9	0
Eclipta	4	4	--	4	8	4	0	8	7	0
Florida Beggarweed	0	1	7-8	8	7-8	7-8	0	0	1	6
Florida Pusley	0	3	8	3	8	5	0	9	9	8
Groundcherry	6	0	0	0	8	7	0	8	9	0
Horsenettle	0	0	7	0	5	2	0	0	0	0
Hophornbean Copperleaf	0	0	5	0	8	0	0	7	8-9	0
Jimsonweed	9	3	--	--	9	9	0	9	9	0
Lambsquarters	6	6	--	4	7	3	0	6	6	4
Morningglory	4	8	8	5	8	7	0	8	8	0
Morningglory, small flower	9	7	9	3	8	3	0	7	8	0
Pigweed	4	5	9	4	9	5	0	9	9	9

continued

Table 7. Estimated Effectiveness of Recommended Postemergence Herbicide Treatments on Important Weeds Infesting Peanuts in Alabama and Properties That May Affect Water Quality (cont.)

WEEDS	HERBICIDES									
	Basagran (POST)	Butoxone (POST)	Impose Cadre (POST)	Classic (POST)	Cobra (POST)	Firestorm Gramoxone (POST)	Poast Plus Select (POST)	Storm (POST)	Ultra Blazer (POST)	Dual Magnum (LAYBY)
Prickly Sida	8	2	7-8	5	8	2	0	8	4	0
Purslane	8	3	0	5	8	5	0	8	9	0
Redweed	8	5	8	3	--	7	0	7	5	0
Sicklepod	0	7	8	7	6	7	0	0	3	4
Spurge	0	0	0	5	6-7	4	0	6	6	0
Tropic Croton	7	3	0	4	9	4	0	8	8	0
Tropical Spiderwort	8	0	8	0	--	8	0	6	3	0
Wild Poinsettia	0	3	8-9	4	8	8	0	7	8-9	0
Wild Radish	6	0	9	0	7	6	0	8	9	0
Wooly Croton	4	2	0	0	8	0	0	6	8	0
Surface-Loss Potential[2]	S	M	--	S	--	S	S	M	M	M
Leaching Potential[3]	S	M	--	M	--	S	S	M	M	M

[1] Effectiveness ratings are based on observations of research plots and field use under average weather conditions for several years by weed control workers in Alabama. Leaching and surface-loss potential ratings are based in part on herbicide chemical characteristics and pesticide behavior models developed by USDA scientists as well as on field experience.

[2] The surface-loss potential indicates the tendency of the pesticide to move with sediment in runoff.

[3] The leaching potential indicates the tendency of the pesticide to move in solution with water and to leach below the root zone into deep percolation.

KEY TO EFFECTIVENESS RATINGS AND ABBREVIATIONS:

9 = 90% to 100% effective; 0 = Not effective; -- = Information not available. PPI = Preplant Incorporated; EPOT = Early Postemergence; PRE = Preemergence; POST = Postemergence. S = Small; M = Medium; L = Large.

PEANUT MANAGEMENT CHECKLIST

Each year, the farmers who get maximum returns from the dollars they invest in peanut production are those who carry out certain key management practices. Use this checklist to check up on your peanut management system. If you can't check off each of these points for your own farm, you may be missing out on maximum returns.

☐ **Use a crop rotation system.** For best results, grow a grass crop for at least 2 years before planting peanuts. Rotation helps you cut down on disease and nematode problems and contributes to better weed control. Avoid soybeans in the rotation—both soybeans and peanuts are susceptible to the same major diseases, nematodes, and weeds.

☐ **Soil test every year and follow the recommendations.** Test each field in the fall for fertility level and lime needs. Peanuts respond best to residual fertility, so it is better to build up soil fertility as you grow other crops. But, peanuts will respond to direct fertilization when soil fertility levels are low.

☐ **Plant between April 28 and May 25.** For optimum yield, plant according to the Tomato Spotted Wilt Index.

☐ **Check fields regularly for virus problems.** Send a properly trained person—yourself, a consultant, or a scout—into your fields at least weekly during the growing season. Scouting enables you to identify pest problems and time control measures for best results. It also gives you the records you need for planning peanut production in the same field in future years.

☐ **Irrigate if it is economically feasible.** Timely irrigation will increase yield and quality in most years. It also gives you a measure of insurance against loss during dry years. In the future, irrigation may be a major method of applying agricultural chemicals.

☐ **Use the hull scrape or the shellout method to time your harvest.** You'll get better yields and higher quality using one of these methods.

☐ **Use pesticides only as needed.** Except for leaf spot fungicides, chemicals applied to peanuts automatically or on a fixed schedule are usually a poor investment. For maximum returns, select and apply pesticides based on the specific problem identified in the field.

☐ **Maintain records on white mold.** Control white mold only in fields where this disease has caused major problems before. Three to four dead spots in 100 feet of row is justification for treatment. White mold is more likely to cause losses if you don't follow a 3-year rotation or if you include soybeans in your rotation program. The highest white mold loss is usually seen in fields cropped every second year in peanuts. Two or more years of corn, cotton, or a pasture grass will greatly reduce the risk of serious disease loss.

☐ **Control leaf spot with a regular spray program.** Begin 30 to 40 days after planting or by June 1. Maintain a 10- to 14-day schedule until July 15 and a 7- to 10-day schedule after July 15 during periods of frequent rain showers. Otherwise, continue sprays every 10 to 14 days until 2 weeks before harvest. Use recommended rate and an adequate spray volume for good coverage. Don't allow a canopy of broadleaf weeds to develop and interfere with your coverage. Evaluate your control program in each field every few weeks.

☐ **Use nematicides only when needed.** Take a soil sample for nematode analysis in August or September from all fields you will plant to peanuts the following year. Treat for nematodes only in those fields where you know a problem exists. Apply a recommended nematicide at planting time in those fields. During your weekly inspections, check plants not growing normally for nematode damage. Nematodes are most destructive in fields in continuous peanut production.

☐ **Maintain a field-by-field record or map of weed problems.** Choose the proper herbicides to control the weeds you have. Remember that the first 6 weeks of the growing season is the critical period for weed control. Don't use the "shotgun" approach: using different herbicides at different times without regard to the particular weed problems that are in the field. Most herbicides have some undesirable effects on the peanut plants themselves; the more herbicides you use, the more the peanut plants will be hurt.

☐ **Control early-season sucking insects.** Use one of the insecticides recommended for thrips. If acephate or cyhalothrin is used as a foliar spray, make the first application when the second true leaf develops and make another application 5 to 7 days later.

☐ **Use foliar insect sprays only when needed, based on your weekly inspection program.** Remember that uncontrolled low levels of damaging foliage-feeding insects early in the season will help to build up a beneficial insect population. Beneficials can help keep large infestations of damaging insects in check later in the season. Foliage-feeding caterpillars are more often a major problem in July and August.

☐ **Control important peg- and pod-feeding pests.** The lesser cornstalk borer and southern corn rootworm are primarily peg- and pod-feeding pests. Check carefully for these pests and the feeding damage they cause from the time pegging begins until the crop is mature.

☐ **Choose and use insecticides as recommended.** Apply recommended insecticides at correct rates to control the insect pests that have reached or exceeded the "threshold" level. For example, only granular formulations are recommended for lesser cornstalk borer and southern rootworm control because granules will sift through the vines to the soil surface. No single insecticide will control all peanut insects.

For more information and specific recommendations, ask your county Extension agent for detailed information applicable to conditions in your county. You can also get cost and return budgets and up-to-date publications on peanut production.

Table 8. Herbicide Classification by Mode of Action

Mode of Action	Herbicide
AMINO ACID SYNTHESIS INHIBITORS	Impose/Cadre, Classic, Pursuit, Strongarm
CELL MEMBRANE DISRUPTERS	Basagran, Firestorm, Gramoxone, Storm, Ultra Blazer
GROWTH REGULATORS	Butoxone/Butyrac (2,4-DB)
LIPID SYNTHESIS INHIBITORS	Poast, Poast Plus, Select/Arrow
PHOTOSYNTHETIC INHIBITORS	Basagran, Storm
PIGMENT SYNTHESIS INHIBITOR	Valor
ROOT/SHOOT GROWTH INHIBITORS	Cinch, Dual, Outlook, Pendimax, Prowl, Sonalan

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For more information, call your county Extension office. It is listed in your telephone directory under your county's name.

Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency or the Alabama Department of Agriculture and Industries. If a registration is changed or cancelled, the rate listed here is no longer recommended. Before you apply **any** pesticide, check with your county Extension agent for the latest information.

Trade names are used **only** to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

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