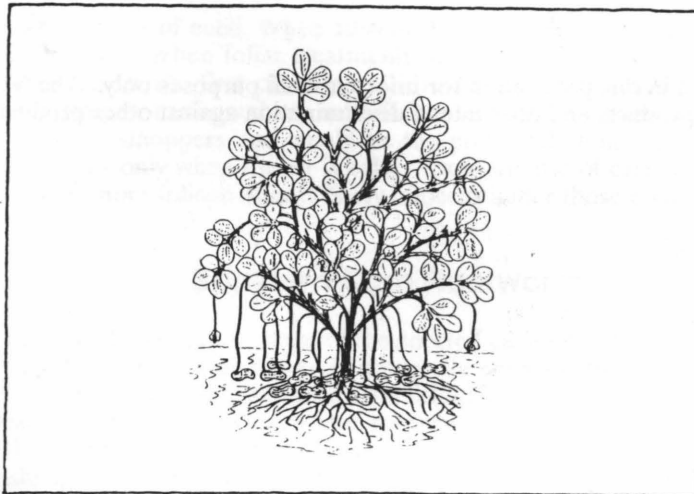


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Virginia Cooperative Extension Service

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1988-89
Pest Management Guide
for
PEANUTS



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Produced by the Department of Entomology and the Department of Plant Pathology, Physiology and Weed Science, VA Tech. Coordinator: J. M. Luna, Department of Entomology

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Keys to the Proper Use of Pesticides

1. Read the label on each pesticide container before each use. Follow the printed instructions to the letter; heed all cautions and warnings; note precautions about residues.
2. Store pesticides in the containers in which you bought them. Put them where children and animals cannot get to them -- preferably locked-up and away from food, feed, seed and other materials that may become harmful if contaminated.
3. Dispose of empty pesticide containers in the manner specified on their labels.

SEE YOUR DOCTOR IF SYMPTOMS OF ILLNESS OCCUR DURING OR AFTER USE OF PESTICIDES

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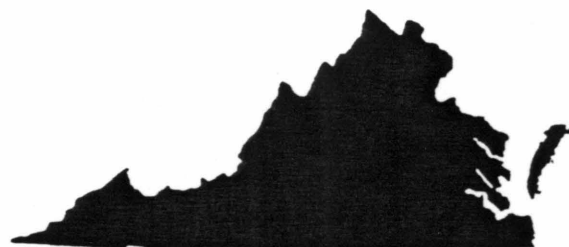
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Virginia Cooperative Extension Service

Publication 456-000

PEST MANAGEMENT GUIDES FOR VIRGINIA -- 1988-89



Contents:

- Introduction, Regulations and Basic Information for the Safe
and Effective Use of Agricultural Pesticides in Virginia -- Publication 456-001
- Pest Management Guide for Home Vegetable Gardens -- Publication 456-002
- Pest Management Guide for Home Fruit Production -- Publication 456-003
- Pest Management Guide for Home Ornamental Plants -- Publication 456-004
- Pest Management Guide for Commercial Small Fruit Production -- Publication 456-005
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Peanut Insect Control Recommendations

John C. Smith, Extension Entomologist

Tobacco Thrips

Seedling peanut plants are usually attacked by thrips which may complete several generations under favorable conditions. These tiny, spindle-shaped insects feed primarily within the developing unfolded leaflets causing crinkling of the leaflets and stunting of the plants. Blackening of the small leaflets occurs with severe infestations and can be mistaken for chemical injury. Plants normally outgrow this injury under favorable conditions, and there is no reduction in yield or grade. However, the delay in vine growth from early thrips injury prevents early ground shading by the peanut vines and herbicides may be less effective in grass and weed control. Thrips control is probably more important from this aspect. During dry seasons or seasons with excessive rains, the systemic insecticides may not give good thrips control due to poor systematic uptake by the plants or leaching of chemicals from the soil. Foliar treatments may be warranted to allow more rapid plant growth to assist in weed control if systemics are ineffective, or if injury appears excessive.

Potato Leafhopper

The potato leafhopper is probably the most serious "above-ground" insect pest of peanuts in Virginia, and its injury has been more prevalent these last few years. This small, wedge-shaped, light green to yellow insect damages the peanut plant by feeding on the underside of leaves in a piercing-sucking manner. Injured leaf tips at first yellow then brown and tend to curve downward at the tip. Such a condition is known as "hopper-burn." If enough injury occurs vine growth will stop and there may be a decrease in yield and grade. Injury may occur at any time from early June until the middle of August or later in some years. Systemic insecticides applied at time of planting will usually control potato leafhoppers that occur early, but if no pegging-time insecticide is applied, it may be necessary to make one or two foliar applications in July or early August. Pegging-time applications of rootworm insecticides will usually control leafhoppers from that time until harvest.

Treatments should be made only on a basis of need. When 10% of the leaves are showing yellowing, and active leafhoppers are seen, treat with an effective chemical. When foliar treatments are required the first application usually is made about the middle of July, and the second about the first of August (if needed). If scheduled treatments are being applied for control of leafspot and carbaryl (Sevin) or methomyl are included, a build-up of spider mites often results. Malathion 4% dust is effective in controlling potato leafhoppers and would be the preferred choice for use if spider mites have been a chronic problem. Apply dust treatments only when the air is calm. Avoid the use of carbaryl (Sevin) when the foliage is wet or during periods of high humidity, as more foliage burn is likely to occur under those conditions.

Southern Corn Rootworm

The southern corn rootworm, which is the immature stage of the spotted cucumber beetle, can cause extensive injury to the peanut crop in Virginia. The injury by the larval stages is not easily seen on the pegs and pods and detection of the rootworms themselves is very difficult. After an infestation is established, control is difficult and often ineffective. Therefore, a preventative treatment is best for control in fields where rootworm injury has been previously noticed. The spotted cucumber beetle (the adult of the rootworm) is more readily detected in the peanut field. If the beetles are detected before rootworm infestation is established, effective treatments can be applied before injury results. Early detection is necessary, and a treatment should be applied soon after detection. When treatment is going to be made on the basis of detection of adults (scouting), newly emerged, pale-colored adult beetles should be seen from mid July to early August. Use the recommended amount of insecticide. Using more than the recommended amount of insecticide provides no further control, but using less than recommended often invites a control failure. Carefully calibrate your application equipment and apply the correct amount of insecticide. The effectiveness of the chemical treatment is increased if the applied insecticide is incorporated into the soil by a shallow cultivation. If vine growth and pegging are in an advanced stage, do not cultivate, as vine "dirting" which leads to disease development and cultivation injury to pegs would offset the increased effectiveness of the chemical.

Corn Earworm

Annual infestations of the corn earworm occur in most peanut fields. However, research indicates that one-third of the foliage can be lost at the time of a normal infestation without a loss in yield or grade (unless normal growth is greatly restricted). Usually there is only a single generation. Four earworms per row foot is considered the point where control is probably needed. If spider mites are already present in a field, carbaryl (Sevin) or methomyl (Lannate or Nudrin) used for corn earworm control can allow rapid build-up of this pest. At present, there is no EPA registration for using monocrotophos (Azodrin) for corn earworm control in peanuts. However, Azodrin has a use pattern for spider mites and lesser cornstalk borer control that is similar in rate and timing to requirements for corn earworm control and could be used without worsening spider mite infestations.

Spider Mites

Mites, which have become more numerous during the past several years, are especially injurious during hot, dry weather. Another possible reason for the increasing spider mite damage, is the indiscriminate use of carbaryl (Sevin), fenvalerate (Pydrin), and methomyl (Lannate or Nudrin) by peanut growers. While these insecticides are very valuable in controlling leafhoppers, thrips and worms, they may be responsible for destroying some of the natural enemies of spider mites thus promoting the build-up of mite populations. Insecticides should be used only when needed for insect control. The use of non-sulfur containing sprays and dusts for *Cercospora* leafspot control may also allow a build-up of spider mites. Tank mixes including fungicides and insecticides are more likely to allow spider mite build-up than when either material is used separately.

Spider mites feed mainly on the undersides of the leaves. They suck the juice from the foliage and cause the leaves to turn brown and eventually drop off. Heavy infestations usually occur first around the borders of peanut fields; then they spread inward throughout the fields. Avoid harvesting spider mite infested cornfields next to peanut fields until peanuts are harvested. Spider mites will readily move into peanuts when corn dries down or is harvested. Be prepared to treat peanuts if adjacent corn is infested.

IMPORTANT: If you are going to treat, calibrate your equipment to deliver the right amount of pesticide per acre. Arrange and adjust the nozzles of spouts in a manner that will direct the chemical into the desired area to be treated. Adequate sprayer pressure (40 to 60 lb. psi) will aid in getting chemicals in contact with the underside of leaves and within denser foliage. Penetration of foliage with 20 to 30 gallons of water per acre is very important for the control of spider mites.

Pests	Insecticide and Formulation	Rate Per Acre and Remarks	Precautions and Days Between Last Application and Harvest
<i>Thrips (foliage treatment)</i>	Carbaryl(Sevin 10% D)	Apply 10 lb. of 10% D. Calibrate duster before starting and apply dust only when air is calm.	Do not apply when foliage is wet or when rain or high humidity is expected during the next 2 days.
	Carbaryl (Sevin) WP OR sprayable OR XLR-plus	Apply 1 lb. of active ingredient of 50% WP or 80% S. or XLR-plus Apply as a spray to cover plants.	
	Malathion 57% EC or 25% WP	Apply 1 1/2 pt. of 57% or Apply 4 lb. of 25% WP	
	Methomyl (Lannate or (see next page)	Apply 1/2 to 1 lb. of Lannate	

Pests	Insecticide and Formulation	Rate Per Acre and Remarks	Precautions and Days Between Last Application and Harvest
<i>Thrips (foliage treatment)</i> (continued)	Nudrin) 90SP or 1.8L	or Nudrin 90SP or 1-2 pts. of Lannate or Nudrin 1.8L per acre.	
	Acephate (Orthene) 25S	Apply 2/3 to 1 lb. of Orthene 75S per acre.	
	Fenvalerate (Pydrin) 2.4 EC	Apply 3-5 oz. of Pydrin 2.4 EC per acre	Do not feed or graze livestock on treated vines.
	Asana 1.9E	Apply 1-3 oz per acre	Do not feed or graze livestock on treated vines.
<i>Thrips (in furrow treatment)</i>	*Disulfoton (Di-Syston) 15% G	Apply 5-7 lb. (NOT IN CONTACT WITH SEED) This will also control early season leafhoppers.	Do not feed treated vines to livestock. Do not allow hogging of treated peanuts.
	*Phorate (Thimet) 20% G	Apply 3.5-5 lb. of Thimet 20G/acre (not in direct contact with the seed). This will also control early-season leafhoppers.	Do not graze or feed treated hay or forage.
	*Aldicarb (Temik) 15% G	Apply 7 lb per acre. This application will give early to mid-season control of spider mites and will give early season control of leafhoppers.	Do not hog off treated fields. Do not feed peanut hay or vines to livestock.
<i>Potato Leafhopper</i>	Carbaryl (Sevin) 10% D Carbaryl (Sevin) WP or Sprayable or XLR-plus	Apply 10 lb. or 10% D. Apply 1 lb. of active ingredient from 50%WP or 80%S or XLR-plus or from 4 lb/gal sprayable.	Do not apply when foliage is wet or when rain or high humidity is expected during the next 2 restrictions on feeding forage to beef or dairy cattle.
	Malathion 4% D or 57% EC	Apply 20-25 lb. of 4% D 1/2 pts. of 57% EC.	
	Methomyl (Lannate or Nudrin) 90SP or 1.8L	Apply 1/2 to 1 lb. of Lannate or Nudrin 90SP or 1-2 pts. of Lannate or Nudrin 1.8L/acre.	Do not apply within 21 days of harvest. Do not feed treated vines to livestock.
	Acephate (Orthene) 75S	Apply 2/3 to 1 lb. of Orthene 75S per acre.	
	Aldicarb 15G (Temik) - at pegging	Apply 7 lb. of Temik 15G in a band over the row at peg initiation. Incorporate with shallow cultivation.	
	Pydrin 2.4E	Apply 2 2/3-5 1/3 Pydrin per acre	Do not feed or graze treated vines to livestock
	Asana 1.9E	Apply 1-2 oz Asana per acre	
<i>Potato leafhopper (in-furrow systemic) early-season control.</i>	Carbofuran (Furadan) 15G	Apply 3.5-7 lb. of 15G. Apply in the seed furrow at time of planting.	Do not feed peanut forage to dairy animals or animals being finished for slaughter.
	Temik 15G (Aldicarb)	Apply 7 lb. of Temik in furrow or at pegging. Will also control spider mites.	
	Phorate 20G (Thimet)	Apply 3.5 - 5 lb. not in contact with seed at planting. Apply 10 lb. at pegging.	

Pests	Insecticide and Formulation	Rate Per Acre and Remarks	Precautions and Days Between Last Application and Harvest
<i>Potato leafhopper</i> (continued)	Disulfoton 15G (Di-Syston)	Apply 6.5 - 13 lb. of Di-Syston 15G at planting or at pegging.	
<i>Southern corn rootworm</i>	*Fonofos (Dyfonate) 10G or 20G	Apply 20 lb. of Dyfonate 10G or 10 lb. of Dyfonate 20G per acre. Apply treatments over the row during first 2 weeks in July at beginning of pegging and before vines close in middle. Effectiveness of rootworm treatment increases if the insecticides are covered by shallow cultivation to avoid exposure to sunlight and lateral movement with heavy rains.	Dyfonate may be used up to 30 days after pegging begins. Labels stipulate that all of these chemicals should be incorporated at time of application.
	Ethoprop 15G (Mocap)	Apply 13-20 lb. of Mocap 15G per acre.	
	*Phorate (Thimet) 15G	Apply 13 lb. of Thimet 15G per acre.	Do not graze or feed treated hay or forage.
	Chlorpyrifos (Lorsban) 15G	Apply 13 lb. of Lorsban 15G per acre.	Do not make more than 1 application per season. Do not apply within 21 days of harvest. Do not feed hay or forage to meat or dairy animals.
	Carbofuran (Furadan) 15G	Apply 13 lb. of 15G at pegging time and incorporate by cultivation. This application will aid in control of potato leafhopper.	Do not apply Furadan at pegging if application was made at planting. Do not feed vines or hay to livestock. Do not apply within 80 days of harvest.
<i>Corn earworm</i>	Carbaryl (Sevin) 10%D	Apply 12 1/2 - 15 lb. of 10% Sevin D per acre. Apply 1 1/2 - 1 3/4 lb. of 80% Sevin SP or 2 1/2 - 3 lb. of 50% Sevin WP. Treat only if foliage loss is heavy (1/3 or more). Earworms are easier to control when they are less than 1/2 inch long. Apply 1 qt XLR-plus / acre	Do not apply when foliage is wet or when high humidity is expected during the next 2 days.
	Carbaryl (Sevin) WP or Sprayable		
	Carbaryl (Sevin) XLR-plus		
	Methomyl (Lannate or Nudrin) 90% SP	Apply 1/2 - 1 lb. of 90% Methomyl SP or 1-2 pints Methomyl 1.8L per acre. Use low rates for young worm and high rates for large worms and more severe infestations.	Do not treat within 14 days of digging. Do not feed treated vines to livestock. Allow crop to dry 7 days between digging and combining. 14 days Nudrin; 21 days Lannate.
	1.8 lb/gal (Lannate L or Nudrin)		

Pests	Insecticide and Formulation	Rate Per Acre and Remarks	Precautions and Days Between Last Application and Harvest
Corn Earworm (continued)	Fenvalerate (Pydrin) 2.4 E	Apply 3-5 oz. per acre. Do not exceed 3 applications per season.	Do not overspray any body of water. Very toxic to fish.
	Acephate (Orthene) 75S	Apply 1 - 1 1/3 lb. of Orthene 75S per acre	
	Monocrotophos (Azodrin) 5 E	Apply 7/8 to 1 5/8 pt. per acre.	Do not apply within 15 days of harvest. Do not graze or feed treated foliage to livestock.
	Asana 1.9E	Apply 1-2 oz per acre	Do not graze or feed treated vines.
Spider mites	Propargite (Comite) 6.5E	Apply 2 pt. Comite 6.5 per acre. A minimum of 20 gal. solution per acre is recommended. A maximum of 2 applications per year.	Do not plant rotational crops within 6 months of last treatment. 14 days.
	Monocrotophos (Azodrin) 5	7/8 - 1 5/8 pt/acre. Use 20-30 gal. of spray solution per acre. These rates will also control corn earworms.	
	Aldicarb (Temik) 15G	Apply 7 lb. of Temik 15G in a band over the row at pegging and incorporate by cultivation.	Do not hog off or feed treated vines or hay.
Lesser cornstalk borer	Monocrotophos (Azodrin) 5 insecticide solution (5 lb. per gal.) (aids in control)	Apply 1 5/8 pt. For control of lesser cornstalk borer, apply the spray in a 10-12 in. band which covers only the soil surface and lowest stems and foliage. Apply with sufficient water to give uniform coverage. Where specified, use higher dosage for heavy infestations. Repeat as necessary to maintain control, applying no more than two applications per season.	Do not treat within 15 days of digging. Do not feed treated vines to livestock. Do not graze livestock on treated fields. Do not make more than 2 applications per season. Workers entering fields within 48 hours after application should wear protective clothing. Azodrin is extremely toxic and should be handled with care.
	Chlorpyrifos (Lorsban 15G)	Apply 13 lbs. of Lorsban 15G as a band over the row.	
	*Fonofos (Dyfonate) 10G and 20G	Apply 20 lbs. per acre of 10G or 10 lb. of 20G in an 18-inch band on 36 inch rows (or 40 lbs. of 10G per acre broadcast by air or ground equipment.) Apply at first sign of borer after pegging begins.	May be used up to 30 days after pegging begins.
	Fenvalerate (Pydrin) 2.4 E (aids in control)	Apply 10-11 oz. of Pydrin 2.4 E per acre to aid in lesser cornstalk borer control.	
	Asana 1.9E	3 oz per acre	Do not graze or feed treated vines.

Pests	Insecticide and Formulation	Rate Per Acre and Remarks	Precautions and Days Between Last Application and Harvest
<i>Fall armyworm</i>	Methomyl (Lannate or Nudrin) 90% SP 1.8 lb/gal (Lannate L or Nudrin)	Apply 1/4 to 1/2 lb. of 90% Lannate or Nudrin SP or 1-2 pints of Lannate or Nudrin L per acre in sufficient water to obtain coverage. Use a minimum of 2 gal. of water per acre for aerial application. Repeat at 5 to 7 day intervals as needed.	Do not treat within 21 days of digging. Do not feed treated vines to livestock. Allow crop to dry 7 days between digging and combining.
	Acephate (Orthene) 75S	Apply 1 - 1 1/3 lb. Orthene 75S per acre.	
	Pydrin 2.4E (fenvalerate)	Apply 5 1/3 - 10 2/3 oz per acre	Do not graze or feed treated vines
	Asana 1.9E	3.0 oz / acre	
<i>Grasshoppers</i>	Carbaryl (Sevin) 50% WP or 80% WP	Apply 2 lbs. of 50% WP or 1 1/2 ls. of 80% WP per acre.	0 days.
	Acephate (Orthene) 75S	Apply 1/3 to 2/3 lb. Orthene 75S per acre	

*Extremely poisonous. Call your doctor immediately if you get sick while using this pesticide.

Pesticide Usage Charts

Many pesticides control more than one pest. The two tables below summarize the effectiveness of some popular granular pesticides used at time of planting and at time of pegging for the control of major insects and nematodes which attack peanuts.

Extent of Insect and Nematode Control by the Application of Certain Major Pesticides at the time of Planting

Pests	Thrips	Leaf Hopper	Root Worm	Nematodes [*2]	Spider Mites
Chemical:					
Temik	Yes	Early	No	Yes	Yes
Furadan	No	Early	Aids	Yes	No
Mocap [*1]	No	No	Peg	Yes	No
Di-Syston	Yes	Early	No	No	No
Thimet	Yes	Early	No	No	No
Nemacur	Yes	Aids	No	Yes	No

Extent of Insect and Nematode Control by the Application of Certain Granular Pesticides at the time of Pegging

Pests	Roots Worm	Leaf Hopper	Spider Mites	Lesser Cornstalk Borer	Corn Earworm
Chemical:					
Thimet	Yes	Yes	No	No	No
Dyfonate	Yes	X Aids	No	Yes-Aids	No
Mocap [*1]	Yes	X Aids	No	No	No
Di-Syston	No	Yes	No	No	No
Furadan	Yes	Yes	No	No	No
Temik	No	Yes	Yes	No	No
Lorsban	Yes	X Aids	No [*3]	Yes-Aids	No [*3]

Footnotes for both charts above:

[*1] = Not systemic. Do not apply in the furrow.

[*2] = Applied as a band treatment and incorporated.

[*3] = Lorsban 15G applied at pegging will not control spider mites or corn earworms. Lorsban 4E is not registered or recommended for rootworm control.

X = Satisfactory control. Not registered for this purpose.

PEG = For use at time of pegging.

Extent of Insect and Spider Mite Control of Insecticides Applied if the Pest is Present When Sprayed*

Insecticide**	Formulation**	Pest Species Controlled					
		Thrips	Leaf Hopper	Southern Corn Rootworms	Corn Earworm	Lesser Cornstalk Borer	Spider Mites
Sevin	10D, 4 Flowable, 80S XLR-plus	Yes	Yes	No	Yes	No	No
Malathion	57 EC, 25 W, 4D	Yes	Yes	No	Aid	No	No
Lannate or Nudrin	90SP, 1.8L	Yes	Yes	No	Yes	No	No
Pydrin	2.4E	Yes*	Yes	No	Yes	Yes-Aids	No
Azodrin	5E	Yes*	Yes*	No	Yes*	Yes-Aids	Yes
Comite	6.5E	No	No	No	No	No	Yes
Asana	1.9E	Yes	Yes	No	Yes	Yes-Aids	No

*Presently there is no registration for control of these pests.

**There are other insecticides and other formulations which have federal registration for use on peanuts, but are not recommended for use in Virginia at this time.

Diseases of Peanuts

P.M. Phipps, Extension Plant Pathologist, Suffolk

Disease control is an essential component of all peanut production programs. Diseases of one type or another are present on all farms and their occurrence on most is both complicated and constantly changing. An integrated approach to control which combines sanitation, cultural factors, resistant or tolerant varieties, and chemical treatments is generally the most effective and economical. Before chemical treatments are executed, growers must accurately determine the nature of the disease problem in a given field. Furthermore, each should be considered as a single unit of the farm which may or may not require treatments used in other fields.

Seed and Seedling Diseases

Disease	Product and Formulation	Rate of Formulation per/A	Method and Timing of Application	Precautions and Remarks
Seed decay and seedling disease	Botec (botran + captan)	4.0-6.0 oz	Apply with any type dust treater which will insure complete coverage of seed.	Do not use treated seed for food, feed or oil purposes. Bags with treated seed should bear a tag or label cautioning against their use for food, feed, or oil purposes as well as re-use for packing feed or food stuffs.
	Gustafson Pro-sized II (42-S thiram + Botran-30C + SP Extender)	15.0 fl oz	Use this product only in Gustafson's Flowable Peanut Seed Treater. Mix components of product in proportions as directed on label prior to application.	Same as above.
	Gustafson Pro-sized III (42-S thiram + Botran-30C + Vitavax-30C + SP Extender)	15.0 fl oz	Same as above.	Same as above.
	Vitavax 300 (carboxin + captan)	4.0-6.0 oz	May be applied as dust, spray, or slurry.	Same as above. Do not graze or feed livestock on hay grown from treated seed.
	Vitavax 75W-Captan-DCNA Blend	4.0-5.0 oz	Apply as dust treatment.	Same as above.
	Vitavax 75W	2.0-3.0 oz	Apply in combination with other seed protectant fungicide, such as captan or thiram.	Same as above.
	Captan + Maneb	4.0-6.0 oz	Apply with dust treater which will insure complete coverage of seed.	Same as above, except no restriction on feeding hay grown from treated seed.
Cercospora leafspot (<i>Cercospora arachidicola</i> and <i>Cercosporidium personatum</i>) (See footnote describing Leafspot Advisory Program)	Benlate 50WP OR Topsin 4.5F OR Topsin 70W + Manzate 200 80W OR Penncozeb 80W OR Dithane M45 80W OR Dithane F45 4.5F	4.0-8.0 oz 5.0-10.0 fl oz 4.0-8.0 oz 1.5 lb 1.5 lb 1.5 lb 1.2 qt	Except where utilizing the leafspot advisory program*, six foliar applications of selected product(s) are recommended. Applications should be started between June 25 and July 1 and repeated thereafter at 14-day intervals. Use 12 to 15 gal water/A with ground sprayers and 3 to 5 gal water/A with aerial sprayers.	Do not feed treated vines, hay, or hulls to livestock. Consult labels for the minimum interval between last treatment and harvest.

Disease	Product and Formulation	Rate of Formulation per/A	Method and Timing of Application	Precautions and Remarks
	Benlate 50WP OR Topsin 4.5 F OR Topsin 70W + Flowable Sulfur (6.0 lb/gal)	8.0 oz 10.0 fl oz 8.0 oz 2.0 qt	Same as above.	Same as above.
	Bravo 720	1.5 pt	Same as above.	Same as above. Bravo should not be used in fields with Sclerotinia blight.
	Bravo S	4.0 pt	Same as above.	Same as above.
	Dithane M45 80W	2.0 lb	Same as above.	Do not feed treated vines, hay, or hulls to livestock. Consult label for the minimum interval between last treatment and harvest.
	Dithane F45 (4.5F)	1.6 qt	Same as above.	
	Penncozeb 80W	2.0 lb	Same as above.	No restriction on feeding vines, hay or hulls to livestock.
	Kocide 101	2.0-3.0 lb	Same as above.	
	Kocide 404S	2.0 qt	Same as above.	Same as above.
	Top Cop	2.0-3.0 qt	Same as above.	
	Sul-Co-Flo	2.0-3.0 qt	Same as above.	Same as above.
	TRI-BASIC Copper sulfate	2.0-3.0 lb	Same as above.	
	Tenn Cop 5E + Bravo 720	1.5 pt 1.0 pt	Same as above.	Do not feed treated vines, hay or hulls to livestock.
Sclerotinia blight (Sclerotinia minor and Sclerotinia sclerotiorum)	Terraclor 10G	50.0 lb	Apply in 12- to 18-inch band centered over row at early pegging (July 10), followed by a second application at same rate 4 to 5 weeks later.	Do not feed or forage treated vines. See product label for other precautions and handling interactions. Minimum interval from treatment to harvest is 45 days.
	Rovral 50W	2.0 lb	Apply with low pressure nozzles producing large droplets. Center nozzles over rows and adjust to provide complete coverage with 40 gal of spray per acre. Make first application when disease first appears. Up to two additional sprays on a 4 wk interval may be required.	Do not apply within 10 days of harvest. No restriction on feeding vines, hay or hulls to livestock.

Disease	Product and Formulation	Rate of Formulation per/A	Method and Timing of Application	Precautions and Remarks
Cylindrocladium black rot (CBR) (<i>Cylindrocladium crotalariae</i>)	Vapam	10.0-20.0 gal	Use 10 gal/A rate on NC-8C or NC-10C and 20 gal/A rate on Florigiant, NC-6 and GK-3. Va-81B or NC-7 should not be planted in fields with CBR history, because of their high level of susceptibility. Apply 14 days pre-plant with two chisels spaced 10 inches apart and 5 inches on each side of row center. Use a bed shaper to mark treated rows and do not mix treated soil with untreated soil by subsequent tillage or disking prior to planting.	Before using Vapam or Busan 1020, read and follow all directions, precautionary statements and other information appearing on the label.
	Busan 1020 (Vapam and Busan 1020 contain the same kind and quantity of active ingredient)	10.0-20.0 gal		
Southern stem rot (<i>Sclerotium rolfsii</i>)	Terraclor 10G	100.0 lb	Apply at early pegging on a 12-inch band over the row in fields with history of this disease. Otherwise, apply when this disease is first observed in a field.	Do not feed treated vines, hay or hulls to livestock. The minimum interval from treatment to harvest is 45 days. Make only one application per year.
	Terraclor 75W	13.0 lb	Same as above, but apply in 12-inch band over row (36 inch spacing) in 30-50 gal water/acre. Use 8008 LP, 8010LP, or TK7.5 spray tips to insure fungicide reaches soil surface.	Same as above.
	Vitavax 3F	3.0 pt	Same as above.	Same as above, but the minimum interval from treatment to harvest is 60 days.
Pod rot (<i>Pythium</i> only)	Ridomil 5G	12.0 lb	Apply in 8-12 inch band over row at early pegging. Do not apply to wet foliage.	See label for specific details on handling. No restriction on feeding hay, vines or hulls to livestock.
	Ridomil 2E	2.0 qt	Apply at early pod set through irrigation water. Apply early in set to insure adequate flushing into soil.	Same as above.
Nematodes (See Footnote on Nematode Advisory Program**)	Furadan 15G	20.0-27.0 lb	Apply at planting in a 12-inch band centered over row (36-inch spacing) and incorporate into top 3 to 4 inches of soil.	Label prohibits the use of hay, vines, or hulls from treated soil as a livestock feed.
	Furadan 15G +	13.0 lb	Same as above in 12 inch band.	Same as above.
	Temik 15G	7.0 lb	Apply in seed furrow at planting.	Same as above.
	Nemacur 15G	13.0-17.0 lb	Same as above in 12-inch band.	Same as above.
	Temik 15G	14.0-20.0 lb	Same as above.	Same as above.

Disease	Product and Formulation	Rate of Formulation per/A	Method and Timing of Application	Precautions and Remarks
	Mocap Plus (10% Mocap and 5% Di-System)	24.0-40.0 lb	Same as above, except incorporate in top 4 to 8 inches of soil.	Same as above. Do not use as a seed furrow treatment.
	Mocap 15G	13.0-26.0 lb	Same as above. (Pegging applications are designed primarily for control of insect pests rather than nematodes.	No limitation of feeding hay, vines or hulls from treated soil to livestock. Never use Mocap as a seed furrow treatment.

***Leafspot Advisory Program:**

Virginia Tech will monitor weather conditions at Suffolk, Capron and Waverly daily to detect when conditions are favorable for leafspot development in peanuts. Daily advisories that report the occurrence of either "favorable" or "unfavorable" conditions at each location will be broadcast by radio and TV stations in the peanut production area. Daily advisories can also be obtained by calling a toll-free number (1-800-582-8172) answered by a code-a-phone at the Tidewater Research Center in Suffolk. Advisories are updated daily at 4 p.m.

Suggested guidelines for using advisories:

1. Utilize advisories for leafspot control on small acreages that can be sprayed within 4 or 5 days of a favorable advisory. Longer delays may result in poor leafspot control.
2. Check spray pressure and nozzles frequently to maintain accurate calibration and maximum efficiency in spray delivery.
3. Select fields with histories of moderate to light leafspot incidence in locations convenient for regular scouting.
4. Advisories should be a more effective tool for leafspot management on moderately resistant varieties (NC 6, NC 7).
5. Although favorable advisories may be broadcast several times in a single week, fungicide sprays need not be applied more frequently than intervals of 10 days.
6. Advisories from the weather station closest to your farm should be utilized. Ignore advisories from the more distant weather stations.

****Nematode Advisory Program:**

Growers participating in this program are provided reports on the numbers and kinds of plant parasitic nematodes in soil and recommendations on needs for nematode control. Soil samples for nematode assay must be collected in the fall and not later than November 20. Growers have remarked favorably on the value of this program and in several cases testified that nematode control costs were reduced by as much as 50% by omitting nematicide treatments where damaging populations were not detected. County extension offices have soil sample bags and information forms as well as literature that describe guidelines for participation in this program.

Weed Control in Peanuts

John W. Wilcut, Extension Weed Scientist

As with most crops, weed control programs in peanuts depend on the performance of herbicides to replace much manual and mechanical effort. Consistency in the performance of herbicides depends on several factors: (1) recognize the weeds expected, (2) choose the herbicides that are registered for use on the crop that have shown activity on the weeds, (3) identify the soil characteristics that are present that will relate to the rate of herbicide that can be used, (4) apply the treatments correctly, this involves equipment and techniques, and (5) watch the fields closely to recognize weed problems that may develop can be controlled with timely supplemental treatments.

With production costs escalating, efficient and effective weed control is very important. Failure to control weeds almost always results in a poor peanut crop. Detailed information on the use of herbicides cannot be included in a guide such as this. Labels on a pesticide should serve as a necessary guide for the best use. Refer to product labels for use suggestions and restrictions. Proper application will assure most success and reduce chances of herbicide residues in crops following in rotation.

Soil incorporation is necessary for some herbicides. It can improve the performance of most herbicides that control weeds by destroying weed seedlings as the seeds germinate. Compliance with the label directions for incorporation is very important to provide the conditions for the best weed control and reduce the chances of herbicide residue to the crop following in rotation. Herbicides differ in their breakdown rate in soils. Of the peanut herbicides, Balan, Enide, and Prowl have the longest soil life. Depth of incorporation differences are also suggested for Prowl, Dual, Lasso and Balan or Vernam and are important for best activity of the herbicides.

With the recent development and registration of postemergence herbicides for broadleaf weeds and the pending registration of herbicides for postemergence grass control, it is important that application directions be followed. Best results are associated with good coverage of the target plants, treatments at the proper stage of weed developments, and use of equipment that delivers relatively small droplets of spray under relatively high pressure to insure good coverage. Knowledge of the weed susceptibility is also important. Refer to MA 197 for more detail.

Effective Weed Management requires an integrated system using several different approaches. Several strategies are necessary for good weed control.

1. *Crop rotation.* Peanuts should be grown in rotation with corn, grain sorghum, or cotton to aid in management of various pests including weeds. Crop rotation allows for the use of different types of herbicides on the same field in different years. A good rotation and weed management system in each crop prevents the buildup of problem weeds in the field. Most annual and perennial broadleaf weeds can be controlled more economically and easier in corn than in peanuts. For example, there are no registered herbicides for use in peanuts that will effectively control perennial broadleaf weeds such as horsenettle, trumpet creeper, and maypop passionflower.
2. *Crop competition.* Peanuts are relatively poor competitors with weeds. Fewer weeds are required to reduced yield and quality of peanuts than for most other crops. Generally, if peanuts are kept weed free for 4-6 weeks after planting, peanut yield will not be reduced by weed competition. However, weeds interfere with digging and combining of peanuts and as a result reduce harvesting efficiency.
3. *Cultivation.* Cultivation is a means to supplement chemical weed control. In addition, banding of herbicide application while cultivating or following cultivation is a means of reducing herbicide costs. However, cultivations must be flat and non-dirting and soil must not be moved up on or around the peanut plant. This soil movement results in physical damage to the peanut plant and often results in increased disease problems.
4. *Weed identification and scouting.* Proper weed identification is essential. Generally, one herbicide will not control every weed that is likely to be present in a typical field. Each and every field should be scouted and mapped for weeds present. Using graph paper, a grower should mark the approximate location of weeds in the fall of each year. Weeds present in the fall will generally have set seed and will be present the following year. Weed seed often will stay viable in the soil for at least several years. As a result they will be a problem for several years. By knowing what weeds to expect, a grower will be able to make more intelligent decisions on herbicide applications and save money and time in the process. Weed mapping will also allow for spot treating of localized problems and aid in keeping those problems small.
5. *Herbicide selection.* In selecting a herbicide program, a grower must know what the weed problems are, soil characteristics of the fields, and something about the herbicide limitations and capabilities. Seldom will one herbicide provide all the control that a grower needs. As a result, several herbicides must be used together for a successful program. By knowing what each herbicide provides to the program, the grower may eliminate expensive duplication or choose the herbicide that provides the best overall balance of weed control capabilities, crop safety, and the best buy. Without this information, the grower is inviting crop injury, yield reduction, poor weed control, and the resulting financial loss.

Problem Weeds

Perennial Broadleaf Weeds

Perennial broadleaf weeds such as horsenettle, alligator-weed, Virginia buttonweed, trumpetcreeper, maypop passionflower, and bigroot morningglory cannot be controlled in peanuts. These weeds must be controlled in corn grown in rotation with peanuts. These weeds should be dealt with also in the fall after corn harvest and prior to frost.

Bermudagrass

In addition to controlling bermudagrass in the field, efforts should also be directed at controlling bermudagrass on edges of field. This prevents growth into the field or from being dragged into the field by tillage equipment.

- A. Ideally control procedures should begin in the fall following corn harvest. This allows the grower several options and reduces the risk of yield reduction. After corn harvest, mow the stalks. If the bermudagrass foliage appears wilted or damaged, set the mower low to remove the old foliage. Do not till, allow the bermudagrass to regrow (8 to 10 inches tall) and be actively growing before applying Roundup at 3 quarts/A in a spray volume of 15 gpa using flat fan nozzles and 30 to 40 psi. Apply at least two weeks before frost and wait 14 days before tillage. Using moldboard or chisel plow followed by several diskings spaced at 4- to 6-week intervals (during the fall and winter if soil conditions allow) is most effective.
- B. Roundup may also be applied in the spring. Remove old thatch by burning or mowing. Allow bermudagrass to regrow before applying 3 quarts of Roundup as described above. Wait 14 days before seedbed preparation.
- C. Two applications of Poast in combination with good crop competition will usually provide adequate to good control of bermudagrass. See Table 3 for application rates and weed size for treatment. Always add a crop oil concentrate.

Nutsedge

Both yellow and purple nutsedge can be found in peanut fields. Know which nutsedge is present, management practices vary for the two species.

Fields infested with yellow nutsedge should receive a preplant-incorporated application of either Vernam or Dual. Also apply Dual as a preemergence or ground cracking application. Basagran may also be applied postemergence when the yellow nutsedge is 6 to 8 inches tall. Application of 1.5 to 2 pints per acre followed by a second application of the same rate 7 to 10 days later is effective. The addition of 1 quart per acre of crop oil concentrate will improve control.

Purple nutsedge is not controlled by Basagran or Dual. If purple nutsedge or a mixture of yellow and purple nutsedge is present, Vernam should be applied preplant-incorporated.

Broadleaf signalgrass and Texas panicum

These two annual grasses are becoming increasingly widespread and are apt to become even more widespread. Because management programs vary for the two species it is important that growers determine which or if both species are present.

A management program for broadleaf signalgrass should begin with a preplant-incorporated treatment of Balan, Prowl, Sonalan, Dual, or Lasso. Vernam will not provide satisfactory control of broadleaf signalgrass. The preplant-incorporated treatment should be followed by a preemergence or ground cracking application of Lasso or Dual. Escapes of broadleaf signalgrass can be controlled by Poast applied postemergence or by cultivation.

Texas panicum is not controlled by Dual, Lasso, or Vernam. Management should begin with a preplant-incorporated application of Balan, Prowl, or Sonalan. Because of its large seed, Texas panicum can emerge from deeper in the soil than other annual grasses. As a result, Balan, Prowl, or Sonalan should be incorporated to a depth of 3 inches (this is deeper than specified on Prowl label). Dual or Lasso applied preemergence or at ground-cracking provides some limited suppression. Escapes of Texas panicum can be controlled with Poast or with cultivation.

Table 1. Recommended Herbicides for Weed Control in Peanuts

Weed problem	Chemical Formulation	Product Per Acre	Lbs Active Ingredient/A	Remarks and Precautions
PREPLANT INCORPORATED				
Crabgrass, goosegrass, fall panicum, seedling johnsongrass, pigweed, lambsquarters, Texas panicum, signalgrass	Benefin Balan 1.5 LC	3.0-4.0 qt	1.12-1.5	Incorporate 3 inches deep for Texas panicum, otherwise 2-3 inches deep within 8 hours after application according to label suggestions. Interpretation of soil texture is important in determining use rate. Use 4 qt rate for areas with heavy fall panicum, broadleaf signalgrass, and Texas panicum pressure. Improper use of drag board or overlapping of spray pattern may result in soil residue.
	Balan 2.5 G, 2.5%	45.0-60.0 lb		
Barnyardgrass, crabgrass, goosegrass seedling, johnsongrass, lambsquarters, pigweed, purslane, velvetleaf, and yellow and purple nutsedge	Vernolate Vernam 7E	2.3-3.0 pt	2.0-2.5	Incorporate immediately after application to a depth of 3 inches in soil dry enough to work well according to label suggestions. During abnormal growing periods, some leaf-seal may occur, but is usually soon outgrown. Can also be applied and incorporated after planting. Will not provide adequate control of broadleaf signalgrass or Texas panicum.
	Vernam 10G, 10%	20.0-25.0 lb		
Species above listed for benefin and vernolate	Benefin + Vernolate Balan 1.5 LC + Vernam 7E	3.0-4.0 qt 2.3-3.0 pt	1.12-1.5 2.0-2.5	Incorporate immediately after application with care. The combination provides good control of annual grasses and nutsedge including Texas panicum and broadleaf signalgrass and yellow and purple nutsedge.
Crabgrass, goosegrass, fall panicum, seedling johnsongrass, signalgrass, Texas panicum, carpetweed lambsquarters, purslane, pigweed	Pendimethalin Prowl 4E	1.5-2.0 pt	0.75-1.0	Can be applied up to 60 days prior to planting. Incorporate into the top 1 or 2 inches within 7 days after application incorporate 3 inches deep for Texas panicum (note this deeper incorporation than what label calls for). Avoid deep incorporation. Over application or poor application techniques could result in soil residues, because of the characteristics of herbicide. Supplemental broadleaf control usually necessary.
Same as for Balan and Prowl	Ethalfuralin Sonalan 3EC	1.5-3.0 pt	0.5-1.1	Incorporate 2-3 inches deep within 2 days of application (incorporation as soon as possible after application is preferred). For Texan panicum incorporate 3 inches deep. Use minimum of 2 pt for fall panicum, Texas panicum, or broadleaf signalgrass. See label for application rates for particular soil.

Weed problem	Chemical Formulation	Product Per Acre	Lbs Active Ingredient/A	Remarks and Precautions
Species listed for Prowl and Vernam	Pendimethalin Vernolate Prowl 4E + Vernam 7E	1.5-2.0 pt 2.3-3.0 pt	0.75-1.0 2.0-2.5	Follow label for application and incorporation. Do not incorporate Prowl too deep or overapply. Has residual potential similar to Balan when improperly applied. Compared to vernam alone, improves control of broadleaf signalgrass and Texas panicum and extends control of other annual grass species.
Species listed for Balan and Vernam	Ethalfluralin Vernolate Sonalan 3EC + Vernam		2.0-2.6 0.5-1.1	Follow label for application and incorporation. See remarks under vernam and sonalan listed separately.
For yellow nutsedge and extended late season grass control	Metolachlor Benefin Dual 8E + Balan 1.5LC	1.5-3.0 pt 3.0-4.0 qt	1.5-3.0 1.12-1.5	Recommended incorporation depths for Dual and Balan are not the same. Incorporation of the tank mix 2-3 inches in depth will usually provide satisfactory results. Additional broadleaf treatments usually needed.
PREPLANT OR PREEMERGENCE				
Barnyardgrass, broadleaf signalgrass, crabgrass fall panicum, goosegrass, foxtail, pigweed, Florida pusley, carpetweed	Alachlor Lasso 4E Lasso II 15G	3.0-4.0 qt 20.0-26.0 lb	3.0-4.0	Incorporate shallow up to 7 days before planting or on soil surface before weeds and crop emerge. Shallow incorporation to a depth of 2 inches can help overcome effects of dry conditions following treatment. Incorporation recommended only where broadleaf signalgrass is a problem. Supplemental broadleaf treatments usually needed. Usually gives 6 to 8 weeks control. Apply before peanuts or weeds emerge. Good on annual grasses except Texas panicum.
Crabgrass, fall panicum goosegrass, broadleaf signalgrass, foxtail, pigweed, carpetweed, Florida pusley, yellow nutsedge	Metolachlor Dual 8E Dual 25G	1.5-3.0 pt 6.0-12.0 lb	1.5-3.0	Adjust rate according to organic matter content of soil. Surface applications is dependent on rain or irrigation. Shallow incorporation to a depth of 2 inches can help overcome effects of dry conditions following treatment. After planting treatments can be made through cracking but before weeds germinate.
GROUND CRACKING				
Residual control of annual grasses and small-seeded broadleaf weeds	Alachlor Lasso 4E	2.0-3.0 qt	2.0-3.0	Usually gives 8 to 10 weeks control. Good annual grass control except Texan panicum, use as a supplement to preplant-incorporated or preemergence treatments to provide additional residual control of annual grasses and small-seeded broadleaf weeds. Will not control emerged weeds.
Residual control of annual grasses and small seeded broadleaf weeds	Metolachlor Dual 8E	1.25-3.0 pt	1.25-3.0	Use as a supplement to preplant-incorporated or preemergence treatments to provide additional residual control of annual grasses and small-seeded broadleaf weeds. Will not control emerged weeds.

Weed problem	Chemical Formulation	Product Per Acre	Lbs Active Ingredient/A	Remarks and Precautions
POSTEMERGENCE				
Mainly cocklebur, annual morningglory except pitted morningglory	2,4-DB Butoxone 1.75 lb/gal	1.0 pt	0.22	Use when weeds are in the seedling stage and actively growing; at least 10-30 gpa at 20 to 40 PSI. May be applied 2 weeks after planting. Cocklebur and morningglory are most susceptible. Ragweed, lambsquarters, jimsonweed, pigweed, and teaweed (prickly sida) are more tolerant and may only be suppressed. Higher rate should be used if the difficult-to-control species are present. Do not graze or feed treated forage to livestock. Do not apply Butoxone within 30 days or Butyrac within 45 days of harvest.
	Butyrac 200 2.0 lb/gal	0.8-1.0 pt	0.2-0.25	
Cocklebur, common ragweed, jimsonweed, smartweed, prickly sida (teaweed), spurred anoda, wild mustard, yellow nutsedge	Bentazon Basagran 4 LS	1.5-2.0 pt	0.75-1.5	Effectiveness is reduced when weeds are larger than label suggestions. Peanuts are tolerant at any growth stage. Use minimum of 20 gpa spray with boom setting to treat entire plant system, pressure at 40 to 50 psi. Split applications 7 to 10 days apart, applying 1-1/2 to 2 pt each application plus crop oil concentrate usually improves nutsedge control. Addition of 2,4-DB improves control of morningglory and spurred anoda. Do not apply more than 4 pt/A per season.
Common ragweed, jimsonweed, morningglory, pigweed, carpetweed, purslane, cocklebur, croton, lambsquarter, black nightshade, smartweed, spotted and prostrate spurge, wild mustard	Acifluorfen Blazer 2L	1.5-2.0 pt	0.36-0.5	Control is best when weeds are small and actively growing. Refer to label for proper growth stage of weed. Good coverage by spray solution is important. Follow label directions as to best application procedures and rates for different weed sizes to be controlled. Use a minimum of 25-40 gpa, pressure of 40 to 60 psi. Do not use flooding tips. Add 1 pt on nonionic surfactant per 100 gal of spray solution. Apply a maximum of 2 pt/A of Blazer postemergence per season. May be applied at 1 pt/A for control of pitted morningglory, jimsonweed, tropic croton and common ragweed 2 inches or less.
Morningglories, except those tolerant to 2,4-DB	Bentazon Basagran 4E +	1.5-2.0 pt	0.75-1.0	Apply in a minimum of 20 gpa total sprayed 40 psi. Apply to actively growing small weeds before vines are a maximum of 10 inches. Avoid drift to other crops. Do not add oil or other additives. Do not apply within 45 days of harvest or make more than two application per year.
	2,4-DB Butyrac 200	8.0 fl oz	0.12	
	Butoxone 175	8.0 fl oz	0.11	
Improved ragweed and morningglory control	Bentazon Basagran 4E	1.5-2.0 pt	0.75-1.0	Activity depends on good foliage coverage. Use pressures of 40 to 60 psi. Do not use large orifice nozzles. Blazer may be included up to 2 pts/A. Crop oil concentrate may be added up to 2 pts/A. Increased leaf burn and weed control is usually observed with C.O.C. Tank mix controls a broader spectrum of weeds than either product alone.
	Acifluorfen Blazer 2L	1.0 pt	0.25	

Weed problem	Chemical Formulation	Product Per Acre	Lbs Active Ingredient/A	Remarks and Precautions
Morningglory, cocklebur, common ragweed bur gherkin, cotron, redroot pigweed	Acifluorfen Blazer 2L	1.5-2.0 pt	0.38-0.5	See comments about Blazer applied alone. Tank mix provides improved control of large morningglory, cocklebur and certain other broadleaves when size exceeds that specified on Blazer label. See label for surfactant use. Apply when peanuts are at least two weeks old and before pod filling begins. Make only one application per year.
	+ 2,4-DB Butyrac 200	1.0 pt	0.25	
	Buxtone 175	1.0 pt	0.2	
Annual Grasses	Sethoxydim Poast 1.5 EC	1.0 pt	0.19	May be applied any time after planting (when grasses have emerged) up to 70 days prior to harvest. Do not tank mix with other pesticides. Apply to actively growing grasses in 5 to 20 gpa at 40 to 60 psi. See label and Table 3 for maximum grass size to treat. In general annual grasses should be 2 to 4 inches for best results. Add 2 pt/A of crop oil concentrate.
Bermudagrass	Sethoxydim Poast 1.5 EC	1.5 pt	0.28	See comments under annual grass control with Poast for application pressure and volume. Apply to actively growing grass before plant diameter exceeds 6 inches or leaf height above ground exceeds 1 inch. A second application of 1 pt is usually necessary for good control. Make the second application when regrowth or new plants are 1 to 4 inches. Add 2 pt/A of crop oil concentrate.
Rhizome Johnsongrass	Sethoxydim Poast 1.5 EC	1.5 pt	0.28	Apply to actively growing grass when 10-15 inches tall. A second application of 1 pt/A may be made when new plants or regrowth are 6-12 inches. Always add 2 pt/A of crop oil concentrate. See comments under annual grass for application pressure and volume.
LAYBY				
Late season annual grasses	Diphenamid Enide 90WP	2.2 lb	2.0	Apply postemergence in a band covering the row middles on grass-free peanuts at time of last cultivation for extending annual grass control problems that may be anticipated following high moisture during early season. Peanuts need to be free of germinated grassy weeds. Do not use if 4 pounds Enide 50W was used at planting or cracking.
	Alachlor Lasso 4E	1.0-2.0 qt	1.0-2.0	Apply over the top to peanuts for control of late grasses in years when excessive rains may have reduced the residual of early-season applications. Will not control emerged weeds.

Table 2. Weed Species Response to Herbicides for Peanuts Herbicide and Application Method

	SONALAN PPI	BALAN PPI	PROWL PPI	VERNAM PPI	LASSO PRE	DUAL PRE	2,4-DB PE	ENIDE LY	BASAGRAN POE	BLAZER POE	STORM POE	POAST POE
Texas panicum	G-E	G-E	G-E	P	P	P	N	F	N	N	N	N
Barnyardgrass	G-E	E	G-E	G	E	G	N	G	N	N	N	N
Crabgrass	E	E	E	E	E	E	P	G	P	P	N	E
Goosegrass	E	E	E	G	E	E	P	G	P	P	N	G
Fall panicum	G-E	G-E	G-E	F-G	G	G	P	G	P	P-F	N	G
Signalgrass	G-E	E	G	P	E	G	P	F	P	P	N	E
Foxtails	E	E	E	G	E	G	P	F	P	P	N	E
Nutsedge	N	P	N	G	F	G	P	P	G	P	N	N
Cocklebur	N	P	P	P	P	P	F	P	E	G	E	N
Jimsonweed	P	P	P	P	P	P	F	P	E	E	E	N
Lambsquarters	P	G	G	P	F	F	G	G	E	F-G	G	N
Morningglory	G	P	P	P-F	P	P	E	G	P-F	P	G	N
Pigweed	G	G	G	G	E	G-E	F	G	P	E	G	N
Prickly sida (teaweed)	P	F	P	P	P	P	F	F	G	F-G	F-G	N
Ragweed	P	P	P	P	P	P	F-G	G	G	G	G	N
Smartweed	P	P	P	P	P	P	F	P	G	G	E	N
Yerba de tago (eclipta)	P	P	P	P	P	P	P	P	P	F	P-F	N
Carpetweed	G	G	G	G	F-G	F-G	F	G	G	F-G	G	N
Spurred anoda	P	P	P	P-F	P	P	P	P	G	F-G	G	N
Velvetleaf	P	P	P	P-F	P	P	P	N	P	E	F-G	N
Tropic croton	P	P	P	P-F	P	P	P-F	P	P	E	E	N

*Response expressed as activity on emerged seedlings in early stages of development at relatively low rates. Control is erratic or poor on weeds if they are larger.

**Response to some weed species is a result of contact action based on Dinitro response. Response highly dependent on environment, application techniques, and stage of weed seedlings.

E = excellent control, 90% or better
 G = good control; 75 to 90%
 F = fair control, 50 to 75%
 P = poor control; 25 to 50%
 N = essentially no control; less than 25%

Stage: PPI = Preplant soil incorporated
 PRE = Preemergence
 AC = At cracking
 POE = Postemergence
 LY = At Layby (approximately 6 weeks)

Apply pesticides only as directed. Apply them only to the crops specified in amounts specified and at times specified in label instruction, or by your agricultural authorities. Keep pesticides in properly labeled containers. There may be additional herbicides labeled or granted Special Use Applications for the 1988 growing season. Please check with your local county extension office for the latest information.

Table 3. Recommended weed sizes for treatment and application rates for control of annual and perennial grasses with Poast.

Species	Weed size	Application rate per acre ^a
Large crabgrass Smooth crabgrass Goosegrass	up to 4 inches	1.0 pt
Broadleaf signalgrass Fall panicum Texas panicum Foxtails Witchgrass Seedling johnsongrass	3 to 8 inches	1.0 pt
Shattercane	6 to 18 inches	1.0 pt
Volunteer corn	6 to 20 inches	1.0 pt
Bermudagrass	1st application: Before weed diameter exceeds 6 inches or leaf height above ground exceeds 1 inch	1.5 pt
	2nd application: When new weeds or regrowth are 1 to 4 inches	1.0 pt
Rhizome johnsongrass	1st application: Weeds 10 to 15 inches	1.5 pt
	2nd application: When new weeds or regrowth are 6 to 12 inches	1.0 pt

^aAlways add 2 pints per acre of crop oil concentrate.

Table 4. Recommended weed sizes for treatment and application rates for control of annual broadleaf weeds with Basagran, Blazer, and Storm.

Species	1.0 pt/A Basagran		1.5 pt/A Basagran		2.0 pt/A Basagran	
	Max. Leaf Number	Max. Height (inches)	Max. Leaf Number	Max. Height (inches)	Max. Leaf Number	Max. Height (inches)
Prickly sida	---	--- ^a	6	3	6-8 ^b	4 ^b
Common ragweed	---	---	---	---	4-6	3 ^b
Cocklebur	2-4	4	2-6	6	6-10	10
Morningglory						
Pitted	SUD ^c	SUD ^c	SUD ^c	SUD ^c	SUD ^c	SUD ^c
Others	SUD ^c	SUD ^c	SUD ^c	SUD ^c	SUD ^c	SUD ^c
Smartweed	4	4	6	6	6-10	10
Jimsonweed	4	4	6	6	6-10	10
Pigweed	---	---	---	---	---	---
Lambsquarters	4 ^d	1 ^d	6 ^d	1.5 ^d	4-8 ^d	2 ^d
Tropic croton	---	---	2	2	2-4	4
Spurred anoda	---	---	6 ^b	3 ^b	6-8 ^b	4 ^b
Velvetleaf	---	---	4 ^b	2 ^b	4-6 ^b	5 ^b
Eclipta	---	---	---	---	---	---

Table 4. Continued.

Species	1.0 pt/A Blazer ^e		1.5 pt/A Blazer ^e		2.0 pt/A Blazer ^e	
	Max. Leaf Number	Max. Height (inches)	Max. Leaf Number	Max. Height (inches)	Max. Leaf Number	Max. Height (inches)
Prickly sida	---	---	---	---	---	---
Common ragweed	2	< 2	4	4	6	3
Cocklebur	---	---	---	---	2-4	2-4
Morningglory						
Pitted	2	< 2	4	2	4	2
Others	---	---	---	---	3	2
Smartweed	---	---	---	---	4	4
Jimsonweed	3	3	6	6	8	8
Pigweed	---	---	4	2	6	3
Lambsquarters	---	---	---	---	3 ^f	1
Tropic croton	2	< 2	2	2	2	2
Spurred anoda	---	---	---	---	---	---
Velvetleaf	---	---	---	---	---	---
Eclipta	--- ^g	--- ^g	--- ^g	--- ^g	--- ^g	--- ^g

Table 4. Continued.

Species	1.5 pt/A Storm	
	Max. Leaf Number	Max. Height (inches)
Prickly sida	---	---
Common ragweed	2	< 2
Cocklebur	---	---
Morningglory		
Pitted	2	2
Others	---	---
Smartweed	---	---
Jimsonweed	3	3
Pigweed	---	---
Lambsquarters	---	---
Tropic croton	2	< 2
Spurred anoda	---	---
Velvetleaf	---	---
Eclipta	---	---

^aControl not claimed on label.

^bAdd crop oil concentrate according to label directions.

^cSee label for Special Use Directions. Label claims control only with two applications.

^dControl of this species not claimed on peanut label but is claimed on soybean label. Add 2 pt of crop oil concentrate per acre.

^eAdd 1 pt of nonionic surfactant per 100 gallons of spray solution.

^fAdd 1 pt of nonionic surfactant per 100 gallons of spray solution.

^gControl not claimed on label. Experience indicates that 2 pt/A plus surfactant will suppress 1- to 2-inch Eclipta.

Table 5. Restrictions on feeding herbicide-treated peanut vines to livestock.

Herbicide	Do not feed treated vines to livestock	No feeding restrictions on label
Balan		X
Prowl		X
Sonalan	X	
Vernam		X
Lasso		X
Dual		X
Basagran		X
Blazer	X	
Storm	X	
2,4-DB	X	
Poast	X	

