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Pest Management Guide for Peanuts

VIRGINIA COOPERATIVE EXTENSION SERVICE
EXTENSION DIVISION
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

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KEYS TO PROPER USE OF PESTICIDES

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

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

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VIRGINIA PEANUT INSECT CONTROL RECOMMENDATIONS

John C. Smith *

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 systemic uptake by the plants or leaching of the 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 Virignia, 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, carbaryl (Sevin) or methomyl often results in a build-up of spider mites. 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 early larval stages is not easily seen on th 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 a 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 (scounting), 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 Earworms

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 of corn earworms in peanuts each year and their foliage feeding will not result in an economic loss. 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 mite and lesser cornstalk borer control that is similar in rate and timing to requirements for corn earworm control and could be used without the worsening spider mite infestations.

*Associate Professor of Entomology

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) 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 cutting border weeds, as spider mites move onto the peanuts when the weeds dry out. Spider mite infestations in field corn will readily move onto peanuts when corn is dried and (or) 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 or 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
Thrips (foliage treatment) 	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	Apply 1 lb. of active ingredient of 50% WP or 80% S. Apply as a spray to cover plants.	
	Malathion 57% EC or 25% WP	Apply 1 1/2 pt. Apply 4 lb.	
	Methomyl (Lannate) 90SP or 1.8L	Apply 1/2 to 1 lb. of Lannate 90SP or 1-2 pts. of Lannate 1.8L per acre.	
Thrips (in furrow treatment)	*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) 15%G	Apply 5 to 6.5 lb. of Thimet 15G/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.
	Carbofuran (Furadan) 10%G As an aid in thrips control**	Apply 5-10 lb. Apply in the seed furrow at planting time. This rate will also aid in control of southern corn rootworm and will aid in control of early-season potato leafhoppers.	

*Extremely poisonous. Call your doctor immediately if you get sick while using this pesticide.
**A lessening in effective thrips control has been generally noted with Furadan use. This lesser degree of thrips control probably will not result in any loss in yield or quality.

Pests	Insecticide and Formulation	Rate Per Acre and Remarks	Precautions and Days Between Last Application and Harvest
Potato Leafhopper (foliage treatment) 	Carbaryl (Sevin) 10%D	Apply 10 lb. of 10%D.	Do not apply when foliage is wet or when rain or high humidity is expected during the next 2 days. There are no restrictions on feeding forage to beef or dairy cattle.
	Carbaryl (Sevin) WP or Sprayable	Apply 1 lb. of active ingredient for 50%WP or 80%S. Apply as a spray to cover plants.	
	Malathion 4%D or 57% EC	Apply 20-25 lb. of 4% D or 1 1/2 pts. of 57%EC.	
	Carbaryl (Sevin) WP or Sprayable	Apply 1 lb. of active ingredient for 50%WP or 80%S. Apply as a spray to cover plants.	
	Malathion 4%D or 57% EC	Apply 20-25 lb. of 4% D or 1 1/2 pts. of 57%EC.	
	Methomyl (Lannate) 90SP or 1.8L	Apply 1/4 to 1 lb. of Lannate 90SP or 1-2 pts. of Lannate 1.8L/acre.	Do not apply within 21 days of harvest. Do not feed treated vines to livestock.
	Temik 15G	Apply 7 lb. of Temik 15G in a band over the row at peg initiation. Incorporate with shallow cultivation.	
Potato leafhopper (In-furrow systemic) early-season control.	Carbofuran (Furadan) 10G	Apply 5-10 lb. Apply in the seed furrow at time of planting.	Do not feed peanut forage to dairy animals or animals being finished for slaughter.
	Phorate 15G (Thimet)	Apply 5 - 6.5 lb. not in contact with seed at planting. Apply 13 lb. at pegging.	
	Disulfoton 15G (Di-Syston)	Apply 6.5 - 13 lb. of Di-Syston 15G at planting or at pegging.	
Southern corn rootworm	*Fonofos (Dytonate) 10G	Apply 15-20 lb. of Dyfonate 10G per acre.	May be used up to 30 days after pegging begins.
	Mocap 10 G	Apply 20-25 lb. of Mocap 10G per acre.	
	*Phorate (Thimet) 15G	Apply 11.4 lb. of Thimet 15G 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 increased if the insecticides are covered by shallow cultivation to avoid exposure to sunlight and lateral movement with heavy rains.	Do not graze or feed treated hay or forage. LABELS STIPULATE THAT ALL OF THESE CHEMICALS SHOULD BE INCORPORATED AT TIME OF APPLICATION.
	Dasanit 15G	Apply 13-26 lb. of Dasanit per acre. Apply all of the above in a 12 to 18 inch band over the row of pegging.	Do not apply a total of more than 46 2/3 lb. in any single crop year. Do not feed vines or hay to livestock. 65 days
	Carboturan (Furadan 10G)	Apply 10-20 lb. 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.
Corn earworm	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.	Do not apply when foliage is wet or when high humidity is expected during the next 2 days.
	Carbaryl (Sevin) WP or Sprayable		
	Methomyl (Lannate or Nudrin) 90% SP OR 1.8 lb/gal (Lannate L or Nudrin)	Apply 1/4 - 1 lb. of 90% methomyl SP or 1-4 pints of methomyl 1.8L per acre. Use low rates for young worms 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

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

Pests	Insecticide and Formulation	Rate Per Acre and Remarks	Precautions and Days Between Last Application and Harvest
Spider mites	Omite 30W	Apply 3-5 lb. 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.
	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.	
	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	Azodrin 5 insecticide solution (5 lb. per gal.)	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.
	*Fonofos (Dyfonate) 10G and 20G	Apply 20 lbs. per acre of 10G or 8 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.
Fall armyworm	Methomyl (Lannate or Nudrin) 90% SP OR 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.
Grasshoppers	Carbaryl (Sevin) 50% WP or 80% WP	Apply 2 lbs. of 50% WP or 1 1/2 lb. of 80% WP per acre.	0 days.

*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 foliar 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 TIME OF PLANTING

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

EXTENT OF INSECT AND NEMATODE CONTROL BY THE APPLICATION OF CERTAIN MAJOR PESTICIDES AT TIME OF PEGGING

Pests	Root Worm	Leaf Hopper	Spider Mites	Corn Earworm
Chemical:				
Thimet	Yes	Yes	No	No
Cygon	Yes	X Aids	No	No
Mocap 1/	Yes	X Aids	No	No
Basamit	Yes	X Aids	No	No
Di-Syston	No	Yes	No	No
Furadan	Yes	Yes	No	No
Temik	No	Yes	Yes	No

FOOTNOTES FOR BOTH CHARTS ABOVE:

1/ = Not systemic. Do not apply in the furrow.
2/ = Applied as a band treatment and incorporated.
X = Satisfactory control. Not registered for this purpose.
XX = Control is usually satisfactory, but not complete.
PEG = For use at time of pegging.

DISEASES OF PEANUTS

P. M. Phipps, Extension Specialist, Plant Pathology

Disease control is an essential component of all peanut production programs. Growers must realize that 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 field should be considered as a single unit of the farm which may or may not require treatments used in other fields.

Disease	Product and Formulation	Rate of Formulation/A	Method and Timing of Application	Precautions and Remarks
Cercospora leafspot	Benlate 50WP + Manzate 200 OR Dithane M45 OR Flowable Sulfur (Super 6 or That 52)	4.0-8.0 oz 1.5 lb 1.5 lb 2.0 qt	Six foliar applications of selected products(s) are recommended. Applications should be started between June 15 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.	Consult label for restrictions on feeding treated vines, hay, or hulls to livestock and the minimum interval between last treatment and harvest.
	Bravo 500	2.0 pt	Same as above.	Same as above. Bravo should not be used in fields with Sclerotinia blight or in fields with a history of this disease.
	Difolatan 4F	3.0 pt	Same as above.	Same as above. Difolatan should not be used in fields with Sclerotinia blight or in fields with a history of this disease.
	Du-Ter 47.5WP	6.0 oz	Same as above.	Maintain spray nozzles at least 18 inches above foliage to prevent leaf burn. Consult label for restrictions on feeding treated vines, hay, or hulls to livestock and the minimum interval between last treatment and harvest.
	Dithane M45	2.0 lb	Same as above.	Consult label for restrictions on feeding treated vines, hay, or hulls to livestock and the minimum interval between last treatment and harvest.
	Super Tin 4L	4.7-7.6 fl oz	Same as above.	Same as above. Maintain spray nozzles at least 18 inches above foliage to prevent leaf burn.
	Kocide 404S	1.0-2.0 qt	Same as above.	Consult label for restrictions on feeding treated vines, hay, or hulls to livestock and the minimum interval between last treatment and harvest.

Disease Peanuts (Cont'd)

Disease	Product and Formulation	Rate of Formulation/A	Method and Timing of Application	Precautions and Remarks
Cercospora leafspot (Cont'd)	Copper (3%) + Sulfur (44-54%) Dust	18.0-24.0 lb	Same as above.	No limitation on feeding treated hay to livestock.
	Copper Count N	2.0-3.0 qt	Same as above.	Same as above.
	Top Cop	2.0-3.0 qt	Same as above.	Same as above.
	Sul-Co-Flo	2.0-3.0 qt	Same as above.	Same as above.
Southern stem rot (Sclerotium rolfsii)	Terraclor 40D	25.0 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.	Consult label for restrictions on feeding treated hay to animals and minimum interval between last treatment and harvest. Make only one application per year.
	Terraclor 10G	100.0 lb	Same as above.	Same as above.
	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.
Pod rot (Pythium spp. and Rhizoctonia spp.)	Terr-o-cide 72-27	1.0-2.0 gal	Apply pre-plant (1-2 gal/A) or at planting (2/3-1 gal/A), 6-8 inches deep with single injector shank off-set 3-inches from seed furrow. Seal soil surface with press wheel or other equipment immediately. On heavy, clay-type, cold, wet soil apply chemical 3-7 days prior to planting.	Label prohibits the use of hay, vines, or hulls from treated soil as a livestock feed. See label for additional details on restrictions and precautions.
	Telone C17	2.0-5.0 gal	Apply 2 weeks prior to planting using same method as described above.	Same as above.
Nematodes	Furadan 10G	20.0-30.0 lb	Apply at planting in 12-inch band centered over row (36-inch spacing) and incorporate into top 3.0-4.0 inches of soil.	Same as above.
	Nemacur 15G	13.0-17.0 lb	Same as above.	Same as above.
	Temik 15G	14.0-20.0 lb	Same as above.	Same as above.
	Mocap 10G	30.0-40.0 lb	Same as above. (Pegging applications are designed primarily for control of insect pests rather than nematodes.	No limitation on feeding hay, vines or hulls from treated soil to livestock. Never use Mocap 10G as a seed furrow treatment.

Diseases of Peanuts (Cont'd)

Disease	Product and Formulation	Rate of Formulation/A	Method and Timing of Application	Precautions and Remarks
Nematodes (Cont'd)	Soilbrom 85	1.0 gal	Apply 2 weeks prior to planting, 6-8 inches deep with single injector shank off-set 3 inches from seed furrow. Seal soil surface with press wheel or other equipment immediately.	Label prohibits the use of hay, vines, or hulls from treated soil as a livestock feed. See label for additional details on restrictions and precautions.
	Soilbrom 90EC	0.75-1.5 gal	Same as above.	Same as above.
	Terr-o-cide 72-27	1.0-2.0 gal	Same as above.	Same as above.
	Terr-o-cide 72-27	2/3-1.0 gal	Apply at planting time as described above.	Same as above.
	Telone II	5.2-7.0 gal	Apply 2 weeks prior to planting as described above.	Same as above.
	Telone C17	2.5-5.0 gal	Apply 2 weeks prior to planting as described above.	Same as above.

WEED CONTROL IN PEANUTS

O. E. Rud*

As with most crops, weed control programs in peanuts depend on the performance of herbicides to replace much manual and mechanical effort. Consistancy in the performance of herbicides depends on several factors: (1) recognize the weeds expected, (2) choose the herbicides that is 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 (5) Watch the fields closely to recognize weed problems that may develop, which can be controlled with timely supplemental treatments.

With production costs esculating, efficient and effective weed control is very important. 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.

Peanuts

Weed Problem	Chemical Formulation	Product Per Acre	Lbs Active Ingredient/A	Remarks and Precautions
Preplant				
Crabgrass, goosegrass, fall panicum, seedling johnsongrass, pigweed, lambsquarters, Texas panicum, signalgrass	Benefin Balan 1.5 LC, 1.5 lb/gal Balan 2.5 G, 2 1/2%	3.0-4.0 qt 45.0-60.0 lb	1.12-1.5	Incorporate with disk set to cut 4 to 6 inches within 8 hours after application according to label suggestions. Has shown to promote improved late-season annual grass control. Interpretation of soil characteristics is important in determining use rate. Use 4 qt rate for areas with heavy fall panicum pressure.
Barnyardgrass, crabgrass, goosegrass seedling, johnsongrass, lambsquarters, pigweed, purslane, velvetleaf and nutsedge	Vernolate Vernam 7E, 7.0 lb/gal Vernam 10G, 10%	2.3-3.0 pt 20.0-25.0 lb	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.
Species above listed for benefin and vernolate	Benefin + Vernolate Balan 1.5 LC, 1.5 lb/gal + Vernam 7E, 7.0 lb/gal	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 better control of annual grasses and nutsedge under normal seasons.
Preplant or Preemergence				
Barnyardgrass, broadleaf signalgrass, crabgrass, fall panicum, goosegrass, foxtails, pigweed, Florida pusley, carpetweed	Alachlor Lasso 4E, 4.0 lb/gal Lasso II 15G, 15%	3.0-4.0 qt 20.0-26.0 lb	3.0-4.0 lb	Incorporate shallow up to 7 days before planting or on soil surface before weeds and crop emerge. Particularly effective for fall panicum control. Supplemental broadleaf treatments usually needed.

*Assistant Professor of Plant Physiology

Peanuts (Cont'd)

Weed Problem	Chemical Formulation	Product Per Acre	Lbs Active Ingredient/A	Remarks and Precautions
PREPLANT (Cont'd)				
Crabgrass, fall panicum, goosegrass, broadleaf signalgrass, foxtail, pigweed, carpetweed, Florida pusley, yellow nutsedge	Metolachlor Dual 8E	1 1/2-3.0 pt	1 1/2-3.0 Use lowest rate on sandy soil.	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. Incorporated treatments can be made up to 14 days before planting. After planting treatments can be made through cracking but before weeds germinate.
Ground Cracking				
Emerged small seedlings of annual grasses and broadleaf weeds; late season annual grasses, particularly fall panicum	Alachlor + Dinoseb Lasso 4E + Premerge 3 3.0 lb/gal	2.0-3.0 qt 1.5-2.0 qt	2.0-3.0 lb 1.0-1.5 lb	Apply when peanuts begin emerging, but before plant parts have emerged. Offers good residual control of crabgrasses and fall panicum and contact control of small emerged broadleaf weeds. Caution in handling, dinoseb is poisonous.
Seedling grasses and broadleaf weeds, offers additional late season annual grass control of common grasses	Diphenamid + Dinoseb Enide 50 WP + Premerge 3 3.0 lb/gal	4.0 lb 2.0 qt	2.0 lb 1.5 lb	Combination provides contact control of small annual grasses and broadleaf weeds and residual late-season control of crabgrass. Control of fall panicum control often erratic. Improved ragweed control has often been observed. Caution in handling, premerge is poisonous.
Emerging seedlings of broadleaf weeds, fall panicum, crabgrass	Alachlor + Naptalam + Dinoseb Lasso 4E + Dyanap (2.0 + 1.0) lb/gal	2.0 qt 4.0-6.0 qt	2.0 lb 2.0 + 1.0-3.0 + 1.5	Contact control of small annual grasses and broadleaf weeds. Occasionally some growth retardation has been observed when leaching rains have followed soon after application as crop emerged under some conditions. Caution in handling - poisonous.
Emerging seedlings of broadleaf weeds and very small grasses	Metolachlor + Naptalam + Dinoseb Dual 8E + Dyanap	1 1/4-1 1/2 pt + 4.0 qt	1.2-1.5 + (2.0 + 1.0)	Under good germinating conditions, the combination gives control of all emerged weeds if treated at proper stage. Delay application as long as possible, but before complete emergence of crop. Foliage injury is temporary.

Peanuts (Cont'd)

Weed Problem	Chemical Formulation	Product Per Acre	Lbs Active Ingredient/A	Remarks and Precautions
GROUND CRACKING (Cont'd)				
Broadleaf weeds and very small grass seedlings (contact), improved ragweed control under favorable conditions	Naptalam + Dinoseb Dyanap, Kleen Krop, Napthal (2.0 + 1.0) lb/gal	1.0-1.5 gal	2.0-3.0 + 1.0-1.5	Rainfall necessary for best control of germinating weeds. Some chance of growth retardation if heavy rains follow soon after application at late cracking stage. Use lower rates suggested on pourous soils or partially emerged crop. Caution in handling.
Emerged small broadleaf weeds such as cocklebur, morningglory, ragweed, pigweed, lambsquarters, sicklepod, Florida pusley	Dinoseb Premerge 3 3.0 lb/gal	1.0-2.0 qt	0.75-1.5	Control related to weed size and activity is correlated with temperature and humidity. Under high temperature and high humidity, reduce rate. Can be used postemergence. Check status of labeling for early postemergence use. Caution in handling.
Postemergence				
Mainly cocklebur, annual morningglory (see remarks)	2,4-DB Butoxone 1.75 lb/gal	1.0 pt	0.22	Use when weeds are in the seedlilng stage and actively growing; at least 10-20 gpa ground application, 5-10 gpa by airplane. Initial application 2-12 weeks after planting. A second application can be used for later germinating weeds. Cocklebur and morningglory are most susceptible. Ragweed, lambsquarters, jimsonweed, pigweed, and teaweed are more tolerant and may only be suppressed. Highest 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, teaweed, spurred anoda, wild mustard, yellow nutsedge	Bentazon Basagran 4.0 lb/gal	1.5-3.0 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 usually improves nutsedge control. Morningglory control usually inconsistent.

Peanuts (Cont'd)

Weed Problem	Chemical Formulation	Product Per Acre	Lbs Active Ingredient/A	Remarks and Precautions
Small emerged broadleaf weeds, morningglory, cocklebur, jimsonweed, teaweed, spurred anoda	Dinoseb Premerge 3 3.0 lb/gal	2.0-3.0 pt	0.75-1.0	Apply in 25 to 30 gallons spray per acre, with system pressure of 50 psi for good penetration and coverage. Effectiveness is dependent on weed size. Lower rates will control smaller weeds and expose crop to less contact injury. Check label for ambient temperature restrictions. Handle with care.
Layby				
Late season annual grasses	Diphenamid Enide 50 WP	4.0 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 lb	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.

WEED SPECIES RESPONSE TO HERBICIDES FOR PEANUTS HERBICIDE & APPLICATION METHOD

	BALAN PPI	COBEX PPI	VERNAM PPI	LASSO PRE	*DINITRO AC	**ENIDE DN AC	**DYANAP AC	2,4-DB PE	ENIDE LY	BASAGRAN PE
Barnyardgrass	E	E	G	E	F	E	F	P	G	P
Crabgrass	E	E	E	E	F	E	G	P	G	P
Goosegrass	E	E	G	E	F	E	F	P	G	P
Fall panicum	G	G-E	G	E	P	G	F	P	G	P
Signalgrass	E	E	F	G	P	F	P	P	F	P
Foxtails	E	E	G	E	P	G	F	P	G	P
Nutsedge	P	P	G	F	P	P	P	P	P	G
Cocklebur	P	P	P	P	*E	P	E	E	P	E
Jimsonweed	P	P	P	P	*E	P	G	F	P	E
Lambsquarters	G	G	G	F	*E	G	G	G	G	P
Morningglory	P	F	F	P	*E	P	F-G	E	P	P-F
Pigweed	G	G	G	E	*E	G	E	G	G	P
Prickly sida	G	G	G	E	*E	F	E	F	F	G
Ragweed	P	F	P	F	*E	P	G	F-G	P	G
Smartweed	P	P	P	F	G	P	E	F	P	G
Yerba de tago	P	P	G	G	F-G	P	F-G	F	P	F-P
Horsenettle	P	P	P	P	P	P	P	P	P	P
Carpetweed	G	G	G	G	G	G	G	F	G	P
Spurred anoda	P	P	F	P	G	G	G	P	P	G

* 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.

F = 60-80% control; under most condidtions, is not adequate.
P == 0-60% control; not adequate.
G = 80-90% with mechanical cultivation; may be adequate.
E = 90% and above.

Stage:

PPI = Preplant soil incorporated
PRE = Preemergence
AC = At cracking
PE = Postemergence
LY = At Layby (approximate 6 weeks)

Apply pesticides only as directed. Apply them only to the crops specified in amounts specified and at times specified in label instructions, or by your agricultural authorities. Keep pesticides in properly labeled containers. Other brands of Dinoseb + Naptalam (Dyanap) are being marketed. Registration status should be checked before use.