



Noncropland

Insect and Weed Control Recommendations for 2008

INSECT CONTROL

Table 1. Noncropland Insect Control

Insect	Insecticide and Formulation	Formulation per Acre	Active Ingredient per Acre	Comments
Chinch Bugs				
esfenvalerate	ASANA XL 0.66EC Other trade names: Adjourn,	5.8-9.6 fl.oz.	0.03-0.05 lb.	Spray noncropland adjacent to tilled areas to control migrating insects which are a threat to the crop. DO NOT graze. DO NOT spray ditch banks or areas adjacent to water. Do not apply Asana to public lands. Asana is a RESTRICTED USE pesticide.
gamma-cyhalothrin	PROAXIS	---	---	For noncropland adjacent to cropped areas. Apply at rates appropriate to adjacent crop and the target pest. DO NOT apply more than 0.1 pound active ingredient per acre per season. Do not apply Proaxis to public lands. Proaxis is a RESTRICTED USE pesticide. Do not graze.
lambda-cyhalothrin	WARRIOR with ZEON TECHNOLOGY Other trade names: Karate with Zeon Technology, Lambda, Lambda-T, Mystic Z, Silencer, Taiga Z	---	---	For noncropland adjacent to cropped areas. Apply at rates appropriate to adjacent crop and the target pest. Warrior is a RESTRICTED USE pesticide. Do not graze.
Grasshoppers				
<i>General Comments: Use the lower rates for young grasshoppers and the higher rates for adult grasshoppers.</i>				
acephate	ORTHENE 97 Other trade names: Acephate 90SP, Acephate 75S, Orthene75S	0.25 lb.	0.24 lb.	For early- to mid-season application. Use higher volume for dense vegetation. DO NOT graze or harvest vegetation.
carbaryl	SEVIN 80S Other trade names: Carbaryl 80S, Carbaryl 4L, Sevin 4F, Sevin XLR	0.6-1.9 lb.	0.5-1.5 lb.	
diflubenzuron	DIMILIN 2L	2 fl.oz./A	0.032 lb.	Dimilin is a RESTRICTED USE pesticide. Apply to young instars when the majority are in the second through the fourth instar. Dimilin is an insect growth regulator that will not work on adult grasshoppers.
esfenvalerate	ASANA XL 0.66EC Other trade names: Adjourn	2.9-5.8 fl.oz.	0.015-0.03 lb.	Spray noncropland adjacent to tilled areas to control migrating insects which are a threat to the crop. Do not apply Asana to public lands. DO NOT graze. Asana is a RESTRICTED USE pesticide.

Insect	Insecticide and Formulation	Formulation per Acre	Active Ingredient per Acre	Comments
Grasshoppers (cont.)				
gamma-cyhalothrin PROAXIS		---	---	For noncropland adjacent to cropped areas. Apply at rates appropriate to adjacent crop and the target pest. Proaxis is a RESTRICTED USE pesticide. Do not graze.
lambda-cyhalothrin WARRIOR with ZEON TECHNOLOGY Other trade names: Karate with Zeon Technology, Lambda, Lambda-T, Mystic Z, Silencer, Taiga Z		---	---	For noncropland adjacent to cropped areas. Apply at rates appropriate to adjacent crop and the target pest. Warrior is a RESTRICTED USE pesticide. Do not graze.
Imported Fire Ants—Contact Insecticides for Individual Mound Treatment				
<i>For more information, see ANR-1019, "Getting The Most Out Of Your Fire Ant Bait," and ANR-175, "Imported Fire Ants In Lawn, Turf, And Structures."</i>				
acephate ORTHENE TURF, TREE, & ORNAMENTAL SPRAY 97 Other trade names: Acephate 90SP ¹ , Acephate 75 ¹		---	---	DO NOT treat mounds more than once per season. Mix 1.5 tablespoons in 5 gallons of water. Sprinkle 1 gallon of diluted solution over each mound and surrounding 4-foot-diameter circle (about 1.25 teaspoons per gallon.) Grass in treated areas may be injured. DO NOT treat more than once per season.
carbaryl SEVIN 4F Other trade names: Sevin XLR Plus, Carbaryl 4L ¹		---	---	Mix 0.75 fluid ounces of Sevin 4F per gallon of water. Apply a total of 2 gallons of the diluted solution over each mound or at least 1 quart per 6 inches of mound diameter, using a bucket or watering can. Thoroughly wet mound and surrounding area to an area 4 feet in diameter. Do not disturb the mound prior to treatment. Pour solution from a height of about 3 feet to give sufficient force to break the mound open and flow into tunnels. For best results apply when temperature is between 65 and 80°F. Repeat application after 7 days if mound activity resumes. Pressurized sprays may reduce the effectiveness of the treatment by disturbing the ants and causing migration.
SEVIN 80 S Other trade names: Carbaryl 80S ¹		---	---	Mix 0.3 ounces (1.4 tablespoons) of Sevin 80S per gallon of water. Apply same as for diluted solution, above.
Imported Fire Ants—Baits for Broadcast or Individual Mound Treatment				
<i>For more information, see ANR-1019, "Getting The Most Out Of Your Fire Ant Bait," and ANR-175, "Imported Fire Ants In Lawn, Turf, And Structures."</i>				
abamectin VARSITY FIRE ANT BAIT	1 lb.		0.0001 lb.	Apply as a broadcast treatment when ants are actively foraging. Or, sprinkle 5 to 7 tablespoons of bait around each mound. Do not apply more than 1 pound bait per acre.
fenoxycarb AWARD FIRE ANT BAIT	1-1.5 lb.		0.16-0.24 oz.	Apply as a broadcast treatment when ants are actively foraging. Noticeable results may take 4 to 8 weeks. Or, treat the mound by applying 1 to 3 level tablespoons per mound, disturbing material 3 to 4 feet around the mound.

¹ Not all brands with this name are registered for this use. Check the label to make sure fire ant control in noncropland or waste areas is on the label.

Insect	Insecticide and Formulation	Formulation per Acre	Active Ingredient per Acre	Comments
Imported Fire Ants–Baits for Broadcast or Individual Mound Treatment (cont.)				
hydramethylnon AMDRO FIRE ANT BAIT Other trade names: Amdro Pro, Pro bait	1-1.5 lb.	0.12-0.18 oz.		Apply as a broadcast treatment when ants are actively foraging. Noticeable results may take several weeks. Or, treat the mound by applying 2 to 5 level tablespoons per mound, disturbing material 3 to 4 feet around the mound.
hydramethylnon + s-methoprene EXTINGUISH PLUS	1.5 lb.	0.88 oz. + 0.06 oz.		Apply as a broadcast treatment when ants are actively foraging. Noticeable results may take several weeks. Or, treat the mound by applying 2 to 5 level tablespoons uniformly around each mound.
indoxacarb ADVION FIRE ANT BAIT	1.5 lb.	0.11 oz.		Retreat after 12 to 16 weeks if needed. Or treat the mound by applying 4 level tablespoons per mound, uniformly distributing the product 3 to 4 feet around the mound. Noticeable results will be seen within a few days.
pyriproxifen DISTANCE FIRE ANT BAIT Other trade names: Esteem Ant Bait	1-1.5 lb.	0.08-0.11 oz.		Apply as a broadcast treatment when ants are actively foraging. Or, treat the mound by applying 1 to 4 level tablespoons per mound, distributing material 3 to 4 feet around the mound. Noticeable results may take 4 to 8 weeks.
s-methoprene EXTINGUISH PROFESSIONAL FIRE ANT BAIT	1-1.5 lb.	0.08-0.11 oz.		Apply as a broadcast treatment when ants are actively foraging. Or, apply as a mound treatment by sprinkling 3 to 5 tablespoons around each mound to a perimeter of 4 feet. Noticeable results may take several months.
<i>hopper blend</i> EXTINGUISH PROFESSIONAL FIRE ANT BAIT plus other bait	0.75 lb. + 0.75 lb. other bait	---		Mix Extinguish Professional fire ant bait in a 50:50 mix with another fire ant bait that is labeled for the site. Or treat the mound by applying 3 to 5 tablespoons per mound, disturbing material 4 feet around the mound.
spinosad FERTILOME COME AND GET IT FIRE ANT KILLER	2.5-5 lb.	0.006-0.012 oz.		Apply as a broadcast treatment when ants are actively foraging. Or, sprinkle 4 to 6 tablespoons around each mound, extending out to about 2 feet around the mound. Noticeable results may take several weeks.
SOUTHERN AG PAY-BACK FIRE ANT BAIT	2.5-5 lb.	0.006-0.012 oz.		

NOTE: Read manufacturer's label carefully for specific information for all product use restrictions and safety.

Table 2. Properties of Insecticides for Noncropland That May Affect Worker Protection and Water Quality

Common Name	Time to Wait to Enter Field	Surface-Loss Potential	Leaching Potential
abamectin	0 hr.	Small	Small
acephate	24 hr.	Small	Small
carbaryl	12 hr.	Medium	Small
diflubenzuron	12 hr.	Large	**
fenoxycarb	*	Small	Small
esfenvalerate	12 hr.	Large	Small
hydramethylnon	*	Small	Small
indoxacarb	*	Small	Small
lambda-cyhalothrin	24 hr.	Large	Small
pyriproxifen	*	Small	Small
s-methoprene	*	Small	Small

NOTE: The surface-loss potential indicates the tendency of the pesticide to move with sediment in runoff. The leaching potential indicates the tendency of the pesticide to move in solution with water and to leach below the root zone.

* = Keep unprotected persons out of the treated area during pesticide applications.

** = Pesticide should not leach with percolating water.

Differences in formulations, application mode (e.g., bare ground versus crop canopy), and soil type will affect how these ratings are used.

Ratings are based primarily on information obtained from the "USDA-ARS Interim Pesticide Database, Version 1.0," by R.D. Wauchope, August 5, 1988.

WEED CONTROL

Table 3. Noncropland Weed Control

Herbicide Trade Name (Rate/Acre)	Herbicide Common Name (Active Herbicide/Acre)	Comments
Soil Treatments		
HYVAR X (80WP) (3-15 lb.) or HYVAR X-L (2L) (0.75-6 gal.)	bromacil (2.4-12 lb.) (1.5-12 lb.)	Lower rates control annuals such as crabgrass, foxtail, ragweed, and lambsquarter. Higher rates control perennials such as bahiagrass, broomsedge, goldenrod, bermudagrass, johnsongrass, nutsedge, horseweed, and dogfennel. NOTE: For use on railroad, highway, and pipeline rights-of-way, tank farms, storage areas, and industrial plant sites. Higher rates will control woody brush. Refer to the label for species and use rates. Apply before or during period of active growth. Use sufficient water to assure thorough coverage. Can be used in combination with several other herbicides to increase control spectrum. DO NOT USE ON LAWNS, WALKS, DRIVEWAYS, TENNIS COURTS, OR SIMILAR AREAS.
KARMEX 80DF (5-15 lb.) or KARMEX IWC (5-15 lb.)	diuron (4-12 lb.)	Controls most annual weeds and perennial weeds at high rates. NOTE: Provides long-term weed control in areas such as highway rights-of-way, lumberyards, storage areas, and around farm buildings. Karmex may also be used to control annual and perennial weeds in irrigation and drainage ditches. See label for specifics. For best results, apply to the soil shortly before weed growth begins. Retreatment may be necessary to control deep-rooted perennials such as johnsongrass. Adding a surfactant increases contact activity on established weeds (0.5% v/v).
KROVAR I 80DF (6-8 lb.) (8-12 lb.) (12-16 lb.) (19-30 lb.)	bromacil + diuron (2.4-3.2 lb.) + (2.4-3.2 lb.) (3.2-4.8 lb.) + (3.2-4.8 lb.) (4.8-6.4 lb.) + (4.8-6.4 lb.) (7.6-12 lb.) + (7.6-12 lb.)	Low rates provide short-term control of annual weeds and grasses. Medium rates provide extended control of annuals and partial control of perennials. Higher rates control perennials such as bermudagrass, johnsongrass, and nutsedge. NOTE: May be mixed with foliage-applied herbicides such as Gramoxone. For short-term and extended control of vegetation in areas such as roadsides, storage areas, plant sites, industrial and right-of-way sites. DO NOT USE ON WALKS, LAWNS, DRIVEWAYS, OR TENNIS COURTS WHERE CHEMICAL MAY BE WASHED INTO CONTACT WITH ROOTS OF DESIRABLE PLANTS.

Herbicide Trade Name (Rate/Acre)	Herbicide Common Name (Active Herbicide/Acre)	Comments
Soil Treatments (cont.)		
PRAMITOL 25E (4-6 gal.) (7.5-10 gal.)	prometon (8-12 lb.) (15-20 lb.)	Lower rates control annuals and a few perennials such as goldenrod and plantain. Higher rates control perennials such as johnsongrass. NOTE: For complete control of vegetation in areas such as industrial sites, around farm buildings, and under asphalt pavement more than 2 inches thick, apply before weeds emerge or when they are actively growing. Use sufficient water to assure thorough coverage. Very dry soil conditions and lack of sufficient rainfall may result in poor weed control.
PRAMITOL 5PS (152-200 lb.) (304-400 lb.)	prometon + simazine + sodium chlorate + sodium metaborate	Lower rates control annual weeds. Higher rates control perennial weeds. NOTE: For complete control of all vegetation around buildings, fences, drainage ditch banks, recreational areas, airports, military installations, and similar areas. Apply herbicide pellets just before or soon after plant growth begins. Dry soil conditions and the lack of rainfall after treatment will result in poor weed control.
SPIKE 80DF (2-5 lb.) or SPIKE 20P (3.75-20 lb.)	tebuthiuron (1.6-4 lb.) (0.75-4 lb.)	Controls annual grasses and weeds, most perennials, and woody plants. See label for appropriate rate. Controls perennials such as bermudagrass and dallisgrass. See label for appropriate rate. NOTE: For total control of vegetation in such areas as airport runways, utility substations, under asphalt and concrete pavement. DO NOT allow livestock to graze in treated area. Apply shortly before or at the time plant growth begins.
SPRAKIL SK-13 (4G) (150-400 lb.) or SPRAKIL SK-26 (8G) (150-300 lb.)	tebuthiuron + diuron (1.5-4 lb.) + (4.5-12 lb.) (3-6 lb.) + (9-18 lb.)	Controls a wide range of annual and perennial grass and broadleaf weeds. May be applied year-round. However, best results are achieved when application is made in spring to early summer. NOTE: For industrial use only. DO NOT apply near desirable trees or in areas where tree roots may extend into treated area. DO NOT use on cropland or on land to be used for subsequent cropping.
VELPAR ULW (75%) (2.33-10.67 lb.) or VELPAR L (1-4 gal.) or VELPAR DF (75%) (2.67-10.67 lb.)	hexazinone (1.75-8 lb.) (2-8 lb.) (2-8 lb.)	Lower rates control many annual, biennial, and perennial weeds including dogbane, nutsedge, and trumpet creeper. Higher rates give season-long control of many annual, biennial, and perennial weeds including honeysuckle, blackberry, and bermudagrass. NOTE: For use in complete vegetation control on railroad, highway, utility, and pipeland rights-of-way, storage areas, and similar sites. Higher rates will control woody brush. Refer to label for species controlled and use rates. Apply just before or soon after weed emergence. Use enough water to dissolve the herbicide and to give thorough coverage. DO NOT USE ON TENNIS COURTS, LAWNS, WALKS, DRIVEWAYS, OR SIMILAR AREAS WHERE CHEMICAL MAY BE WASHED INTO CONTACT WITH ROOTS OF DESIRABLE PLANTS.

Herbicide Trade Name (Rate/Acre)	Herbicide Common Name (Active Herbicide/Acre)	Comments
Soil Treatments (cont.)		
WEED BLAST 8-G (100-200 lb.)	bromacil + diuron (4-8 lb.) + (4-8 lb.)	Controls a wide range of annual and perennial broadleaf weeds and grasses. May be applied year-round, but best results are obtained when application is made early in the growing season. NOTE: For industrial use only. DO NOT apply on or near desirable woody or herbaceous plants or on areas where their roots may extend because of possible severe plant injury. DO NOT use on cropland or on land to be used for subsequent cropping.
Foliar Treatments		
2,4-D Numerous Trade Names and Formulations	2,4-D (1-1.5 lb.) (2-4 lb.)	Lower rates control annual broadleaf weeds. Higher rates control perennial broadleaf weeds. NOTE: For use in areas such as cemeteries, parks, roadsides, airfields, lawns, vacant lots, and drainage ditch banks. Apply when weeds are young and actively growing. Perennials may require repeated applications. See label concerning the addition of oil, wetting agent, or surfactant to spray mix.
ARSENAL ARSENAL POWERLINE ARSENAL RAILROAD (2 lb./gal.) (2-4 pt.) (4-6 pt.)	imazapyr (0.5-1 lb.) (1-1.5 lb.)	Lower rates control weeds such as lovegrass, cheat, fall panicum, clover, dogfennel, and wild turnip. Higher rates control weeds such as bahiagrass, dallisgrass, honey locust, wild rose, pokeweed, kudzu, hickory, oak, privet, maple, sweet gum, and willow. NOTE: For use in areas such as highway and railroad rights-of-way, ditch banks, fence lines, tank farms, industrial sites, and similar areas. Liquid application provides both foliar and soil activity on many weeds. Add 1 quart of non-ionic surfactant per 100 gallons of spray mix with foliar applications, using 60 or more gallons of spray solution per acre.
CROSSBOW (2 qt.) (1.5-4 gal.)	2,4-D ester + triclopyr (1 lb. + 0.5 lb.) (3-8 lb. + 1.5-4 lb.)	Lower rate controls annual and perennial broadleaf weeds such as dock, goldenrod, plantain, and ironweed. Higher rates control woody species such as blackberry, maple, multiflora rose, sumac, oak, sweetgum, and willow. NOTE: For use in areas such as fencerows, roadsides, industrial sites, and similar areas. Thorough coverage of weeds is essential. See label for application methods and appropriate use rates.
ESCORT XP (60%) PATRIOT (0.33-4 oz.) + Non-ionic Surfactant (1 qt./ 100 gal. spray mix)	metsulfuron methyl (0.3-2.4 oz.) + non-ionic surfactant	Rate selection is based on weed species, weed size, and soil texture. Generally, higher rates are used on established weeds and on finer-textured soils. See label for use rate on specific weeds. Use the high rate for kudzu control. NOTE: For use on noncrop and industrial sites, such as pipeline, utility, and roadside rights-of-way, fencerows, lumberyards, airports, military installations, petroleum tank farms, railroads, storage areas, and similar areas. DO NOT allow spray to drift to desirable plants. Sprayers used to apply this herbicide should be used ONLY for spraying noncrop areas.

Herbicide Trade Name (Rate/Acre)	Herbicide Common Name (Active Herbicide/Acre)	Comments
Foliar Treatments (cont.)		
GARLON 4 (4EC) TAHOE 4E (1-8 qt.) or GARLON 3A (3L) TAHOE 3A (1-3 gal.)	triclopyr (1-8 lb.) (3-9 lb.)	Controls a wide range of broadleaf weeds, vines, brush, and trees. DO NOT allow spray to contact desirable vegetation. Application can be made to utility, roadside, and railroad rights-of-way, industrial storage areas, and fencerows. Add a non-ionic surfactant when using Garlon /Tahoe 3A formulation.
GRAMOXONE INTEON 2.0 (2.5-4 pt.) + Non-ionic Surfactant (1-2 pt./100 gal. spray mix)	paraquat (0.64-1 lb.) + non-ionic surfactant	Controls annual weeds and grasses; top kills or suppresses perennials. For use around commercial buildings, airports, storage yards, fence lines, parkways, and on rights-of-way. Apply when weeds are young and succulent. Apply in 50 to 100 gallons of water for thorough weed coverage. Gramoxone is a RESTRICTED USE pesticide.
KRENITE S (4L) (1.5-6 gal.)	fosamine (6-24 lb.)	Primarily for brush control; also controls field bindweed. For use on land adjacent to and surrounding water supply sites, industrial sites, rights-of-way, and storage areas. Apply in late summer or early fall. Response is usually not observed until following spring. A penetrating type oil-based adjuvant (surfactant or crop oil concentrate) should be added to the spray solution at a minimum rate of 1 quart per 100 gallons of spray mix. Only the plant parts contacted will be controlled. DO NOT apply more than 6 gallons of Krenite per acre per year.
OUST XP (75DG) (3-5 oz.) (6-8 oz.)	sulfometuron (2.25-3.75 oz.) (4.5-6 oz.)	Lower rates provide preemergence or early postemergence control of annual grasses and weeds such as foxtail, dogfennel, mustard, ragweed, bahiagrass, and ryegrass. Higher rates provide early postemergence control of weeds such as curly dock, dewberry, honeysuckle, poison ivy, and johnsongrass. NOTE: For use in areas such as airports, fencerows, roadsides, utility rights-of-way, industrial sites, and similar areas. Oust has both foliar and soil activity on many weeds. Add 1 quart of surfactant per 100 gallons of spray mix with foliar applications. Refer to label for species controlled and use rates.
OVERDRIVE (4-8 oz.) + Nonionic surfactant (1 qt. per 100 gal. spray mix)	diflufenzopyr (0.8-1.6 oz.) + dicamba (2-4 oz.) + nonionic surfactant	Controls many annual and biennial broadleaf weeds and suppresses many perennial broadleaf weeds. For use in noncropland sites such as railroad, utility, pipeline, and highway rights-of-way. Apply no more than 10 ounces of Overdrive per acre per season.

Herbicide Trade Name (Rate/Acre)	Herbicide Common Name (Active Herbicide/Acre)	Comments
Foliar Treatments (cont.)		
REWARD LA (2L) (1-2 pt.)	diquat dibromide (0.25-0.5 lb.)	Controls small herbaceous broadleaf weeds and grasses. Thoroughly cover small actively growing weeds with spray solution. Retreatment will be necessary to control grasses and established weeds. Add a non-ionic surfactant at the rate of 1 pint per 100 gallons of spray mix.
ROUNDUP ULTRA MAX (5 lb./gal.) (0.8 qt.) (1.75-4 qt.) or ACCORD (4 lb./gal.) Generic Products (2-5 qt.)	glyphosate (1 lb.) (2-5 lb.) (2-5 lb.)	Lower rate controls annual grasses and broadleaf weeds. Higher rates control perennial weeds and woody brush. When using Accord, always add a non-ionic surfactant to the spray mix at the rate of 2 quarts per 100 gallons of spray mix. BEFORE using a generic glyphosate product, check to determine need for the addition of a non-ionic surfactant to spray mix. NOTE: For use in industrial, recreational, and public areas and for farmstead weed control. For specific application rates and timing, refer to the label. Provides no residual control of weeds.
SAHARA 70DG (13-19 lb.)	imazapyr (1-1.48 lb.) + diuron (8.1-11.8 lb.)	Provides total vegetative control of many annual and perennial grasses, broadleaf weeds, and vines. Add a non-ionic surfactant to the spray mix at the rate of 1 quart per 100 gallons of spray mix. DO NOT APPLY ON OR NEAR DESIRABLE TREES OR OTHER PLANTS OR ON AREAS WHERE THEIR ROOTS MAY EXTEND. DO NOT USE ON LAWNS, WALKS, DRIVEWAYS, TENNIS COURTS, OR SIMILAR AREAS. DO NOT apply more than 19 pounds of Sahara per acre per year.
TELAR XP (75DF) (0.25-3 oz.)	chlorsulfuron (0.18-2.25 oz.)	Controls many annual, biennial, and perennial broadleaf weeds. Application should be made when weeds are actively germinating or when they are small and actively growing. Add a non-ionic surfactant at a rate of 1 quart per 100 gallons of spray mix. NOTE: Use on noncropland areas such as utility, roadside, and railroad rights-of-way, fencerows, and industrial storage areas.
TRANSLINE (3L) (0.25-1.33 pt.)	clopyralid (0.09-0.5 lb.)	Controls a wide range of annual and perennial weeds. Grasses and members of the mustard family are tolerant of clopyralid. Legumes and composites are especially sensitive. NOTE: For use in areas such as industrial, manufacturing, and storage sites, equipment pathways, rights-of-way, and similar sites. Add 1 quart of a non-ionic surfactant per 100 gallons of spray mix with foliar applications.
VANQUISH 4L (0.5-2 pt.) (2-4 pt.)	dicamba (0.25-1 lb.) (1-2 lb.)	Lower rates control annual broadleaf weeds. Higher rates control perennial broadleaf weeds and some vines. A non-ionic surfactant may be added to spray mix. NOTE: For noncropland areas such as fencerows, roadways, and similar areas. Apply when weeds are actively growing. Also has some residual soil activity. Higher rates can be used for woody plants and brush. Refer to the label for species and use rates. Spray drift can damage nearby desirable plants.

Herbicide Trade Name (Rate/Acre)	Herbicide Common Name (Active Herbicide/Acre)	Comments
Foliar Treatments (cont.)		
NOTE: Use of the following herbicide is currently under review by EPA and is subject to cancellation. Action and notification should occur in early 2008.		
MSMA Numerous Trade Names and Formulations	monosodium metharsonate (2-4.5 lb.)	Controls some annual grasses and broadleaf weeds; suppresses johnsongrass and nutsedge. For use on drainage ditch banks, storage yards, and rights-of-way. Apply when weeds are young and actively growing. Repeat applications may be necessary. This product is toxic to fish and livestock. Add a non-ionic surfactant at 2 pints per 100 gallons of spray solution if formulation does not contain a surfactant.

Table 4. Properties of Herbicides for Noncropland That May Affect Water Quality ¹

	HERBICIDES							
	2,4-D	Arsenal	Banvel	Crossbow	Escort	Gramoxone	Hyvar	Karmex
Surface-Loss Potential²	M	L	S	L	M	S	M	M
Leaching Potential³	M	L	L	M	M	S	L	M

	HERBICIDES							
	Krenite	Krovar	MSMA	Oust	Pramitol	Roundup	Spike	Velpar
Surface-Loss Potential²	M	M	S	M	M	S	L	S
Leaching Potential³	S	L	S	M	M	S	L	L

¹ 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.

KEY TO RATINGS: S = Small potential; M = Medium potential; L = Large potential.

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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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