CHEMICAL WEED CONTROL for Illinois

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A COMBINATION OF PRACTICES FOR WEED CONTROL IS MOST EFFECtive. Good cultural practices, including clean seed, proper seedbed preparation, timely cultivation, and a good fertility program are basic. But for weeds not controlled by normal cultural practices, chemical weed killers (herbicides) can often be used, more than repaying their cost by increasing yields. Chemical control, however, should not replace cultural practices, but should be used in addition to them.

These suggestions may be used as a guide for those who want to use herbicides in their weed-control program. The suggestions are based primarily on results of research and observations in Illinois and other corn-belt states.

Most of the herbicides listed are selective. They should control weeds without seriously injuring the crop when applied at the recommended rate. In many cases the range of selectivity is narrow. Therefore, closely follow the recommended rate of application to avoid excessive crop injury.

Unless otherwise indicated, rates of application are given as active ingredient (most chemicals) or acid equivalent (2,4-D and 2,4,5-T). Product labels indicate the amount of material to apply. If the label gives directions for rates, timing, and crop use for any herbicide that differ from those suggested here, follow the directions on the most recent label.

The following terms are commonly used to describe time of application:

Pre-emergence — applying before the crop comes up. The herbicide is applied to the soil at the time of planting or shortly after. To reduce cost, pre-emergence herbicides are usually applied in 14-inch bands over the crop rows.

Post-emergence — applying after the crop is up.

AMOUNT OF WATER TO USE

Water serves as a carrier to permit uniform distribution of a herbicide. To apply pre-emergence herbicides in 14-inch bands, 7 to 10 gallons of water per acre is usually sufficient. We must rely on rainfall to move the chemical into the soil around the germinating weed seeds.

For post-emergence applications, 5 to 10 gallons of water per acre is usually sufficient unless otherwise specified on the chart. For treating specific weeds such as Johnsongrass, quackgrass, and

Canada thistle, it is preferable to use 30 to 50 gallons of water with some herbicides for good coverage of the foliage. In general, the larger and more dense the weed growth, the greater the amount of water.

GRANULAR HERBICIDES

Most pre-emergence herbicides come in both granular and liquid forms. Both forms are effective when applied properly. Although granules cost more than liquids, some farmers consider them more convenient to handle because no water is required. The irritation caused by some herbicides may be reduced by using granules, but not eliminated.

NAMES OF SOME HERBICIDES

Common	*Trade*
amiben	Amiben
amitrole	Amino triazole, Weedazol
amitrole-T	Cytrol, Amitrol-T
ammonium sulfamate	Ammate-X
atrazine	Atrazine
CDAA	Randox
CDAA-T	Randox-T
CIPC	Chloro IPC
dalapon	Dowpon
dinitro (DNBP)	Premerge, Sinox PE
EPTC	Eptam
fenuron	Dybar
fenuron TCA	Urab
MCP	(several)
NPA	Alanap-3
simazine	Simazine
sodium chlorate	(several)
sodium chlorate plus calcium chloride	Atlacide
Sodium PCP	Weedbeads, Napclor
2,4-D	(several)
2,4,5-T	(several)

For clarity, trade names have been used in some instances. This is not intended to discriminate against similar products not mentioned by trade name.

RECOMMENDATIONS FOR CHEMICAL WEED CONTROL IN FIELD CROPS

CROP or WEED	CHEMICAL	RATE*	REMARKS
CORN, PRE-EMERGENCE (Atrazine or Randox preferred)	ATRAZINE	2 TO 3 LB.	Controls annual grasses and broad-leaved weeds. Use lower rate on light soils. Do not follow with fall-seeded small grain. In some cases injury to spring oats may occur the following year. On sandy soils use Simazine.
	RANDOX	4 LB.	Controls annual grasses. Prevent irritation to skin and eyes. Do not use on sandy soils.
The following herbicides are also available for corn, pre-emergence, but for crop tolerance and degree of weed control, are less preferable than the above.			
	2,4-D ESTER	1½ LB. LIQUID OR 2 LB. GRANULAR	For control of broad-leaved weeds. May give some annual grass control. Some hazard to corn if heavy rains occur soon after treatment. Do not use on sandy soils.
	RANDOX-T	SEE LABEL FOR RATE	Controls annual grasses and most broad-leaved weeds. Prevent irritation to skin and eyes. Some injury may result with heavy rains. Do not use on sandy soils. Toxicity to soybeans from soil residues not fully determined.
CORN, POST-EMERGENCE	2,4-D AMINE OR 2,4-D ESTER	½ LB. ¼ LB.	Does not control grass. Use nozzle extensions after corn is 8 inches tall. Amines are preferable to help prevent damage to nearby susceptible crops.
SOYBEANS, PRE-EMERGENCE (Amiben or Randox preferred)	AMIBEN	3 LB.	For control of annual grasses and broad-leaved weeds. Received label approval in 1961.
	RANDOX	4 LB.	Controls annual grasses. Prevent irritation to skin and eyes. Do not use on sandy soils.
The following pre-emergence herbicides are also available for soybeans, but for crop tolerance and degree of weed control, are less preferable than the above.			
	ALANAP	4 LB.	Controls annual grasses and broad-leaved weeds. May reduce stand somewhat. Does not give good control of smartweeds. Two pounds of Alanap and two pounds of CIPC may be mixed for smartweed control.
	SODIUM PCP	SEE LABEL FOR RATE	Controls broad-leaved weeds better than grasses. Usually more effective on soils with low organic matter. May cause some injury to soybeans. Dust or spray causes sneezing and is irritating to skin. Received label clearance in 1961.
SORGHUMS	RANDOX	4 LB.	As pre-emergence — same as for corn.
	2,4-D AMINE OR 2,4-D ESTER	½ LB. ¼ LB.	Apply when sorghum is between 4 and 12 inches high.
SMALL GRAINS, no legume sown	2,4-D AMINE	¼ TO ½ LB.	Apply after grain tillers but before boot stage, not during milk stage. Do not apply in fall to fall-seeded grain. Oats are more sensitive than wheat and barley. Respray in stubble after harvest for control of some perennials.
SMALL GRAIN as companion crop with underseeded legumes	MCP AMINE OR 2,4-D AMINE	¼ LB.	Treat in spring only. Apply after grain tillers and before boot stage, but after small grain and weeds form canopy over legumes. May reduce stand. Do not use on sweet clover.
	DINITRO-AMINE	1 TO 2 LB. (1½ TO 2 QT.) IN 25-40 GAL. WATER	Apply when grain is 3 to 6 inches high and weeds are small. Temporary leaf burn of small grain likely.
PASTURE, permanent grass	2,4-D AMINE OR 2,4-D ESTER	½ TO 2 LB.	Amount of 2,4-D depends on weed species to be killed. Retreatment may be required. Will kill or severely injure most legumes.

RECOMMENDATIONS FOR SPECIFIC WEEDS AND WOODY PLANTS

CANADA THISTLE	AMITROLE	4 LB. IN 20-30 GAL. WATER	Apply to spring growth or regrowth when thistles are 6 to 8 inches high to bud stage. Cover foliage completely. Plow at least 2 weeks later and plant to corn. Do not plow before treating. If used in pastures, do not graze for 8 months after treatment. In grain stubble clip and treat regrowth when 6 to 8 inches high.
	2,4-D AMINE OR 2,4-D ESTER	½ TO 1 LB. IN 5-20 GAL. WATER	Apply before thistles bloom. May require 2 or 3 treatments per year. Some strains of thistles not controlled with 2,4-D. Apply on warm, sunny day.
QUACKGRASS	ATRAZINE	4 LB. IN 20-30 GAL. WATER	In fall spray quackgrass any time before ground freezes. Do not work treated area until spring — the later the better. An alternative is to make a spring application either as a single treatment of 4 lb. atrazine at least three weeks before plowing or as a split application of 2 lb. atrazine at least three weeks before plowing and 2 lb. atrazine as broadcast pre-emergence. Following either fall or spring treatment plant only corn for two consecutive years. See label for rates on sandy soils.
	AMITROLE-T	2 LB. (1 GAL.) IN 20-30 GAL. WATER	Apply in spring when quackgrass is 4 to 6 inches high. Wait 10 to 14 days and plow. Plant corn as soon as possible using 2 to 3 lb. rate of Atrazine as pre-emergence. With this treatment small grain may be planted following year.
	DALAPON	6 TO 8 LB. IN 30-40 GAL. WATER	In spring before planting corn or soybeans, apply to quackgrass when 6 to 10 inches high. Plow 7 to 10 days later. Wait 3 to 4 weeks before planting corn or soybeans.
JOHNSONGRASS, old grass	DALAPON	10 LB. IN 30-40 GAL. WATER	Apply in spring before planting corn or soybeans when Johnsongrass is about a foot high. Wait 10 days after treatment to plow. Wait 2 to 3 weeks after plow-down to plant.
JOHNSONGRASS, seedlings	EPTAM	3 LB. IN 20-30 GAL. WATER	Apply as pre-emergence when corn is planted or immediately after. Applying in 14-inch bands will reduce cost. Incorporate into top inch of soil with rotary hoe or harrow. Treat also with dalapon before planting to kill old Johnsongrass.
JOHNSONGRASS in small grain	DALAPON	8 LB. IN 30-40 GAL. WATER	Harvest grain, clip or chop stubble, and treat regrowth when 12 to 14 inches high. Fall plow. Plant corn or soybeans the following spring and cultivate frequently to control Johnsongrass seedlings. If corn is planted, use Eptam as pre-emergence.
JOHNSONGRASS, spot treatments	ATLACIDE	6 LB. PER SQ. ROD	May be mixed with water and used as spray or used dry. Sterilizes the soil for 1 year or more.
JOHNSONGRASS, spot treatments for roadsides, fence rows	DALAPON	1 LB. IN 5 GAL. WATER	Apply when grass is 1 to 2 feet high. Treat again in 3 weeks. (See Illinois Circular 827 for further details on Johnsongrass.)
WILD GARLIC and ONIONS in cornstalks or soybean stubble	2,4-D ESTER	2 TO 3 LB. IN 5-10 GAL. WATER	Apply in October or November or in late February, March, or early April for bulblet control. Winter-plow if possible, but delay plowing 3 to 4 weeks after treatment. Repeat treatment for 2 to 3 years. Treatment can be used for grass pasture without plowing.
WILD GARLIC and ONIONS in wheat	2,4-D ESTER OR 2,4-D AMINE	½ TO ¾ LB. IN 5-10 GAL. WATER	Apply in spring after grain has tillered but before boot stage. Will not kill all garlic but plants not killed will usually be distorted so that combine will miss them if wheat is not lodged. May reduce grain yield. May destroy legume underseeding.
GIANT FOXTAIL	Use pre-emergence herbicides when planting corn or soybeans. See Illinois Circular 828 for further details on giant foxtail.		
FENCE ROWS	2,4-D AMINE OR 2,4-D ESTER	½ TO 2 LB. IN 10 GAL. WATER	For broad-leaved weed control. Apply in late spring or early summer when plants are growing rapidly but before blooming. Use extreme care to reduce drift onto susceptible crops or trees and shrubs. Do not use ester form in vegetable crop areas.
	DALAPON	5 TO 8 LB. IN 30-40 GAL. WATER	For grass control. Apply in spring before grass heads out. 2,4-D may be added to control broad-leaved weeds. Completely cover foliage.

CONTROL FOR WOODY PLANTS

FOLIAGE TREATMENT	2,4-D ESTER OR 2,4,5-T ESTER OR MIXTURE OF BOTH	3 LB. IN 100 GAL. WATER	Apply when leaves are full size in spring and before slow summer growth. For mixed brush, use mixture of 2,4-D and 2,4,5-T. For brambles, use 2,4,5-T.
	AMMATE	60 LB. IN 100 GAL. WATER	Apply when leaves are full size, before slow summer growth. Less hazard to nearby desirable plants than 2,4-D and 2,4,5-T. Kills grasses.
BARK or STUMP TREATMENT	2,4,5-T ESTER	16 LB. IN 100 GAL. FUEL OIL OR KEROSENE	Apply in winter or summer to stump or to base of plant from 1 to 2 feet above ground line. Spray until it runs off. For trunks over 5 inches in diameter, apply in frills or girdles.
SOIL TREATMENT	DYBAR OR URAB	1 TBSP. PELLETS ON GROUND TO COVER ½ TO 1 SQ. FT. AT BASE OF EACH TREE OR BRUSH	Readily applied dry any time of year, but late winter or early spring is best. Kills most species of woody plants. Some species do not die until second year after treatment. Do not treat where roots of desirable species grow.
POISON IVY	AMITROLE	½ LB. ACTIVE IN 25 GAL. WATER	Apply when plants are in full leaf. Spray until thoroughly wet.
	2,4-D ESTER OR 2,4-D ESTER PLUS 2,4,5-T ESTER	3 LB. IN 100 GAL. WATER	Apply when plants are in full leaf. Avoid spraying nearby susceptible crops and ornamentals.

PRECAUTIONS

Always follow carefully the precautions stated on the label. This will help protect the operator, prevent crop injury, and prevent harmful residues in food and feed crops.

- Use herbicides only on those crops for which they are specifically approved and recommended.
- Use only recommended amounts. Applying too much of a herbicide may damage the crop, may be unsafe if the crop is to be used for food or feed, and is costly.
- Apply herbicides only at times specified on the label. Observe the recommended intervals between treatment and pasturing and harvesting of crops.
- Wear goggles, rubber gloves, and other protective clothing as recommended on the label.
- Guard against possible injury to nearby susceptible plants.

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