1962

EC62-130 Chemicals that Control Weeds

O. Burnside

J. Furrer

M. McCarty

E.C. 62-130

Chemicals that Control Weeds

— a guide for 1962 —

by

O. C. Burnside, J. D. Furrer, M. K. McCarty, R. W. Bovey, and G. A. Wicks

This leaflet gives suggestions for weed control based on research results at the Nebraska Agricultural Experiment Station and elsewhere. We have listed what we believe to be the most effective weed killers, and their recommended rates and times of application.

Because of the danger of drift, any user of an agricultural chemical must exercise judgment when spraying. Do not spray on a windy day. Wind may cause poor coverage and excessive drift.

It is hazardous to use agricultural chemicals for purposes other than those specified by the approved label on the container. The Federal Food, Drug and Cosmetic Act, as amended, authorizes the seizure of any raw agricultural commodity moving in interstate commerce which carries a pesticide residue in excess of the established tolerance. Read the label carefully. Observe the precautions shown on the label when handling any chemical.

Extension Service
University of Nebraska College of Agriculture
and U. S. Department of Agriculture
Cooperating
E. F. Frolik, Dean; E. W. Janike, Director

Calibrate your equipment before applying chemicals!

FIELD CROPS

Crop	Herbicide	Lbs active ingredient[1] needed per acre	Apply this amount commercial product	Application time	Remarks
Barley	2,4-D amine 2,4-D ester	½ to ¾ ¼ to ½	1 to 1½ pt[3] ½ to 1 pt[3]	5-leaf to early boot	Do not treat winter barley in the fall. Spray winter annual pennycress and mustards before April 15.
Corn Preemergence	atrazine	2 to 3	2.5 to 3.75 lb Atrazine 80W[4]	Preemergence[2] or very early post-emergence when using atrazine	A 13″ band application will reduce the total herbicide used by two-thirds. Do not use atrazine on land that will be planted to crops other than corn or sorghum the following year. Atrazine may carry over in the soil and injure following crops. On sandy soil use only atrazine and at the 2 lb rate. 2,4-D may cause injury. Preemergence weed control is most satisfactory on surface planted crops and when applied to seed beds free of clods and trash.
	2,4-D ester	1 to 2	1 to 2 qt[3,4]		
	CDAA and TCBC	3½ + 7	5 qt Randox T[4]		
Corn Postemergence	2,4-D amine 2,4-D ester	½ to 1 ¼ to ½	1 to 2 pt[3] ½ to 1 pt[3]	Before corn is 18″ high—over 18″ use drop nozzles	Later applications may cause brittleness and stalk breakage. Use lower rate when good growing conditions exist.
	atrazine	3	3.75 lb Atrazine 80W	Before weeds are 1½″ tall	Works best when growing conditions are favorable. Heed atrazine usage remarks above on residue carry-over.
Field beans	EPTC	3	2 qt Eptam[4]	Preplant	Immediately incorporate into the soil by double disking.
Oats	2,4-D amine MCP	½ 1	1 pt[3] 1 qt[3]	6-leaf to flag leaf	Some injury may be expected at any stage with 2,4-D.
Sorghum Preemergence	CDAA	5 to 6	5 to 6 qt Randox[4]	Preemergence[2]	Band applications reduce herbicide cost. Randox controls annual grassy weeds. Propazine use cleared for seed production fields only. Preemergence weed control is most satisfactory on surface planted crops and when applied to seedbeds free of clods and trash. Do not use propazine on land that will be planted to crops other than corn or sorghum the following year.
	propazine for heavier soils in SE Nebr	2	2½ lb Propazine 80W[4]		
Sorghum Postemergence	2,4-D amine 2,4-D ester	½ ¼	1 pt[3] ½ pt[3]	During the period sorghum is 4 to 12 inches high	Spraying before 4″ stage may inhibit root development, and spraying during 13″ stage through early boot stage may inhibit head development.
Soybeans	CDAA	5 to 6	5 to 6 qt Randox[4]	Preemergence[2]	Band applications reduce herbicide cost. Randox controls annual grassy weeds. Preemergence weed control is most satisfactory on surface planted crops and when applied to seedbeds free of clods and trash.
	amiben	3	6 qt Amiben[4]		
Wheat	2,4-D amine 2,4-D ester	½ to ¾ ¼ to ½	1 to 1½ pt[3] ½ to 1 pt[3]	5-leaf to early boot	Do not treat winter wheat in the fall. Spray winter annual pennycress and mustards before April 15.

PASTURES, RANGES, AND FORAGE CROPS

Area or use	Herbicide	Lbs active ingredient[1] needed per acre	Apply this amount commercial product	Application time	Remarks
Alfalfa, and birdsfoot trefoil seedlings	EPTC	3	2 qt Eptam[4]	Preplant	Incorporate into the soil by double disking. Do not graze forage within 60 days of treatment. Early injury may occur to legumes.
	dalapon	2 to 3	2½ to 3¾ lb Dowpon	2 to 4 weeks after alfalfa emerges when grass seedlings are less than 2″ tall	For annual grasses. Do not sell first year's crop or feed treated forage to dairy cows or animals being finished for slaughter.
	4-(2,4-DB)	1	2 qt 2 lb/gal Butoxone or Butyrac	When weeds are small	For broadleaf weeds. May be mixed with dalapon. Do not use treated forage for feed.
Cool-season grass seedlings	2,4-D	½ to ¾	1 to 1½ pt[3]	2- to 4-leaf stage	For broadleaf weeds.
Warm-season grass seedlings	2,4-D	¼ to ½	½ to 1 pt[3]	2- to 4-leaf stage	For broadleaf weeds.
Warm-season grasses for seed	monuron or diuron	3	3.75 lb Karmex or Telvar	Spring or fall before weed emergence	For seed fields only. Atrazine does not control fall panicum. Do not use during year of establishment. Herbicides less effective in heavy plant residues.
	atrazine	3	3.75 lb Atrazine 80W	Spring or fall before weed emergence	For seed fields only. Atrazine does not control fall panicum. Do not use during year of establishment. Herbicides less effective in heavy plant residues.
Annual broadleaf weeds in pastures and ranges	2,4-D	1	1 qt[3]	When weeds are small	Apply in April for pennycress and other mustards.
Perennial broadleaf weeds in pastures and ranges	2,4-D	1 to 1½	1 to 1½ qt[3]	At bud stage of predominant weeds—April for dandelion control	Annual treatment for 2 to 3 years may be necessary.

NON-CROP AREAS

Area or use	Herbicide	Lbs active ingredient[1] needed per acre	Apply this amount commercial product	Application time	Remarks
Fence rows and roadsides (broadleaf weeds)	2,4-D	1	1 qt[3]	Weed height 2 to 4 inches	Repeat treatments may be necessary. Add 1 lb/acre of 2,4,5-T for wild rose and horse nettle.
Irrigation ditchbanks	monuron or diuron	8	10 lb Karmex or Telvar	Soon after ditches are open	Use enough water to insure good coverage. Use screens of 50 mesh or larger. Agitation required.
	simazine or atrazine	6	7½ lb Simazine 80W or Atrazine 80W	Before weeds appear or soon thereafter	Use enough water to insure good coverage. Agitation required.
Soil sterilant for drives, storage areas, industrial sites, parking lots, fence lines, etc.	diuron or monuron	10 to 20	12.5 to 25 lb Telvar or Karmex	Follow manufacturer's recommendations	Complete control of annuals, biennials, and most perennials. Consider possible damage to nearby trees and shrubs and possible movement of sterilant with runoff water.
	simazine or atrazine	10	12.5 lb Simazine 80W or Atrazine 80W	Follow manufacturer's recommendations	Complete control of annuals, biennials, and most perennials. Consider possible damage to nearby trees and shrubs and possible movement of sterilant with runoff water.
	erbon	40 to 80	10 to 20 gal Novon concentrate or Baron	Follow manufacturer's recommendations	Complete control of annuals, biennials, and most perennials. Consider possible damage to nearby trees and shrubs and possible movement of sterilant with runoff water.
	monuron-TCA	Follow manufacturer's recommendations.	1 lb Urox per sq rd	Follow manufacturer's recommendations	Complete control of annuals, biennials, and most perennials. Consider possible damage to nearby trees and shrubs and possible movement of sterilant with runoff water.
Mixtures					
	borate-monuron		Ureabor		
	chlorate-borate		Polybor-chlorate, Chlorax, and Atlacide		
	chlorate-borate-monuron		Chlorea		
	simazine-amitrol		Amizine		
	silvex-dalapon		Garlon	Early weed growth	

LAWN AND TURF WEEDS

Weed	Herbicide	Lbs active ingredient[1] needed per acre	Apply this amount commercial product	Application time	Remarks
Broadleaf weeds such as dandelion, ragweed, field bindweed, and plantain	2,4-D amine or silvex	1	2 tbs[3] per gallon of water per 1000 sq ft	Spring, summer, or fall	Avoid drift on desirable broadleafs. Do not use ester formulations of 2,4-D, damaging fumes drift unpredictable distances. Spray when wind is calm.
Chickweed, henbit, violets, and knotweed	silvex	Follow manufacturer's recommendations		Spring or fall	Use enough water to insure good coverage.
Crabgrass	AMA or DMA (organic arsenics)	Follow manufacturer's recommendations		After emergence	Repeat treatment every 7 days for 2 or 3 applications. Also appears to be effective on foxtail. Poisonous.
	PMA		3 oz of 10% material/1000 sq ft	2 to 4 leaves on crabgrass	Repeat treatment every 7 days for 3 applications. Also controls certain diseases. Poisonous.

(Footnotes on back)

LAWN AND TURF WEEDS (Continued)

	kerosene		1 qt/100 sq ft	2 to 4 leaves on crabgrass	Use water-white kerosene. Do not dilute. Apply when temperature is below 90° F.
Crabgrass, foxtail, and other annual grasses	arsenicals	3 to 5 lb metalic arsenic/1000 sq ft	12 lb calcium arsenate, 24 lb lead arsenate	Preemergence (early spring before weeds germinate or late fall)	Also controls certain insects. Use only on established grass. Poisonous. Rake lawn prior to application and water in.
	dacthal zytron	Follow manufacturer's recommendations		Preemergence in spring before weed seeds germinate	Use only on established grass. Rake lawn prior to application and water in.
Nimblewill	dalapon	¼ lb/gal water	⅓ lb Dowpon	When growing vigorously	Thoroughly wet all plants. Kills all grass. Reseed or resod in 4 to 6 weeks.
White clover	2,4-5-T or silvex	Follow manufacturer's recommendations		Spring or fall	Repeat treatments may be necessary.

TROUBLESOME WEEDS AND WOODY PLANTS

Weed	Herbicide	Lbs active ingredient[1] needed per acre	Apply this amount commercial product	Application time	Remarks
Buckbrush	2,4-D ester	1 to 2	1 to 2 qt[3]	Full foliage (May 10 to 25)	Aerial equipment: apply chemical in 2 to 5 gal carrier/A. Ground equipment: use sufficient water to insure good coverage.
Bur ragweed	2,3,6,-TBA, and PBA as listed for field bindweed; erbon as listed for leafy spurge control.				
	2,4-D	2	2 qt[3]	During June	Same as for field bindweed except amine formulations less effective. If soil moisture conditions are poor, use oil-water emulsions as a carrier.
Canada thistle	2,3,6-TBA, and PBA as listed for field bindweed control.				
	2,4-D	2	2 qt[3]	Spring (early bud) and fall (rosette)	Same as for field bindweed.
	amitrole	4 to 6	8 to 12 lb Amino Triazole or Weedazol	Before bloom or on regrowth following mowing	Use enough water to insure good coverage. Plan to treat for several consecutive years.
Cottonwood, willows and Chinese elm	2,4-D ester	2 to 4	2 to 4 qt[3]	Full foliage (early June)	Aerial equipment: at least 5 gal carrier/A. Annual treatment for 2 to 3 years may be necessary. Basal treatment: 2 qt of herbicide/10 gal of diesel. Spray tree trunk to point of run-off.
Downy brome	atrazine	2	2.5 lb Atrazine 80W	Preemergence fall or spring prior to April 1	Use only in waste areas such as fence rows and ditchbanks. Do not use on cropland. Use sufficient water to insure good coverage.
	atrazine+amitrole simazine+amitrole diuron+amitrole monuron+amitrole	1+½ 1+½ 1+½ 1+½	1.25 lb Atrazine 80W, Simazine 80W, Karmex, or Telvar plus 1 lb of Amino Triazole or Weedazol	Postemergence in spring prior to April 10	
Field bindweed	2,4-D	1	1 qt[3]	Bud stage in spring and on vigorous fall growth	Avoid tillage 10 to 12 weeks before and 1 to 2 weeks after application. Plan to treat for several consecutive years.
	2,3,6-TBA (Benzoic acid)	20	1½ lb/sq rd Granular TBA or ½ pt/sq rd Benzac 1281 or Trysben 200	Fall or spring	Do not disturb areas during year of application. Fall application more effective.
	PBA (Benzoic acid)	40	10 gal/A or ½ pt/sq rd of 4 lb/gal polychlorobenzoic acid	Fall or spring	Same as for 2,3,6-TBA.
Hoarycress (perennial peppergrass)	2,3-6-TBA, and PBA as listed for field bindweed control.				
	2,4-D	2 to 4	½ to 1 gal[3]	Early bud in spring or rosette stage in the fall	Same as for field bindweed except amine formulations less effective.
Johnsongrass	TCA	80	100 lb 90% Sodium TCA	Early spring	Use enough water to insure good coverage. Retreat escaped plants.
	dalapon	5	7 lb Dowpon	8 to 12 inches new growth or regrowth	Repeat treatment 3 times, 10 to 20 days apart.
	erbon	½ lb/sq rd	1 pt Novon Concentrate	Early spring	Use enough water to insure good coverage. Retreat escaped plants.
Leafy spurge	2,3-6-TBA, and PBA as listed for field bindweed control.				
	2,4-D	2	2 qt[3]	Early bud stage	Same as for field bindweed except amine formulations less effective.
	AMS	4 lb/sq rd	4 lb Ammate X	Spring	Use enough water to insure good coverage. A sticker-spreader increases effectiveness.
	erbon	1 lb/sq rd	1 qt Novon Concentrate	Fall or spring	Use enough water to insure good coverage
Milkweed and dogbane	amitrole	4	8 lb Amino Triazole or Weedazol	Bud to bloom stage	Use enough water to insure good coverage
Nodding or musk thistle	2,4-D	1	1 qt[3]	Spring before flowering stalks lengthen and late fall treatment of rosettes	A biennial. Chemicals other than 2,4-D not necessary for effective control.

Field bindweed	2,4-D	1	1 qt[3]	Bud stage in spring and on vigorous fall growth	Avoid tillage 10 to 12 weeks before and 1 to 2 weeks after application. Plan to treat for several consecutive years.
	2,3,6-TBA (Benzoic acid)	20	1½ lb/sq rd Granular TBA or ½ pt/sq rd Benzac 1281 or Trysben 200	Fall or spring	Do not disturb areas during year of application. Fall application more effective.
	PBA (Benzoic acid)	40	10 gal/A or ½ pt/sq rd of 4 lb/gal poly-chlorobenzoic acid	Fall or spring	Same as for 2,3,6-TBA.
Hoarycress (perennial peppergrass)	2,3-6-TBA, and PBA as listed for field bindweed control.				
	2,4-D	2 to 4	½ to 1 gal[3]	Early bud in spring or rosette stage in the fall	Same as for field bindweed except amine formulations less effective.
Johnsongrass	TCA	80	100 lb 90% Sodium TCA	Early spring	Use enough water to insure good coverage. Retreat escaped plants.
	dalapon	5	7 lb Dowpon	8 to 12 inches new growth or regrowth	Repeat treatment 3 times, 10 to 20 days apart.
	erbon	½ lb/sq rd	1 pt Novon Concentrate	Early spring	Use enough water to insure good coverage. Retreat escaped plants.
Leafy spurge	2,3-6-TBA, and PBA as listed for field bindweed control.				
	2,4-D	2	2 qt[3]	Early bud stage	Same as for field bindweed except amine formulations less effective.
	AMS	4 lb/sq rd	4 lb Ammate X	Spring	Use enough water to insure good coverage. A sticker-spreader increases effectiveness.
	erbon	1 lb/sq rd	1 qt Novon Concentrate	Fall or spring	Use enough water to insure good coverage
Milkweed and dogbane	amitrole	4	8 lb Amino Triazole or Weedazol	Bud to bloom stage	Use enough water to insure good coverage
Nodding or musk thistle	2,4-D	1	1 qt[3]	Spring before flowering stalks lengthen and late fall treatment of rosettes	A biennial. Chemicals other than 2,4-D not necessary for effective control.
Poison ivy	amitrol		2 tbs Amino Triazole or Weedazol/gal water	Full foliage (June)	Thoroughly wet all vegetation.
	2,4,5-T or 2,4-D+2,4,5-T		2 tbs[3] per gallon water		
	AMS		¾ lb Ammate X/gal water		
Puncture vine	2,4-D ester	1	1 qt[3]	Pre-bud stage most effective	Mature burs not affected by 2,4-D.
Ragweed	2,4-D	1	1 qt[3]	Early summer	Follow-up treatments may be necessary.
Russian knapweed	2,3,6-TBA, and PBA as suggested for field bindweed; erbon as listed for leafy spurge control.				
	2,4-D	2	2 qt[3]	Early bud stage	Same as for field bindweed except amine formulations less effective.
Russian olive	silvex 2,4-D+2,4,5-T	2 1+1	2 qt Kuron 2 qt[3]	Full foliage (early June)	Same as for cottonwood.
Sagebrush (sand or green)	2,4-D ester	1	1 qt[3]	4 to 8 inches new growth (June)	Same as for buckbrush.
Tanweed	2,4-D ester	1	1 qt[3]	When growing vigorously	Controls top growth principally. Repeat treatment necessary.
Wild rose	2,4,5-T	1 to 2	1 to 2 qt[3]	Late spring or early summer	Follow-up treatments may be necessary.
Yucca	silvex	2	2 qt Kuron	June	Use diesel as a carrier. Repeat treatments may be necessary.

[1] Refers to acid equivalent, phenol equivalent, or active ingredient as applicable.
[2] Refers to a herbicide treatment made from planting time to crop emergence.
[3] Calculated on the basis of 4 lb/gal material. For other formulations see conversion table at right.
[4] Granular material also available.

CONVERSION TABLE

Lb. of Active Ingredient Per Gal. of Commercial Product	Pints of Commercial Product Needed Per Acre to Give the Following Lbs. of Chemical Per Acre		
	¼ lb.	½ lb.	1 lb.
2.00	1	2	4
2.64	¾	1½	3
3.00	⅔	1⅓	2⅔
3.34	⅗	1⅕	2⅖
4.00	½	1	2
6.00	⅓	⅔	1⅓

(Footnotes on back)