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### **Control and Elimination of Noxious Weeds**

Cooperative Extension, South Dakota State University

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*Cooperative Extension Service*



CONTROL AND ELIMINATION OF

# noxious weeds

## Control and Elimination of Weeds

All of South Dakota's noxious weeds are perennials. They spread by underground parts and by seeds. Field bindweed (creeping jenny) infests 1¼ million acres on 29,000 farms; Canada thistle, 1 million acres on 21,000 farms; perennial sowthistle, 156,000 acres on 14,000 farms; quackgrass, 200,000 acres on 14,000 farms; leafy spurge, 32,000 on 4,500 farms; hoary cress, 800 acres on 300 farms; Russian knapweed, 435 acres on 280 farms; and horse nettle, 762 acres on 104 farms.

Intensive studies have been conducted over a period of 10 years for leafy spurge; 8 years for Russian knapweed; 6 years each for Canada thistle, perennial sowthistle, and field bindweed to determine methods of controlling and eliminating these weeds. All of them can be almost completely eliminated while raising crops adapted to South Dakota. Detailed suggestions for the control of these weeds are given in separate publications.

Less time has been spent studying quackgrass, hoary cress, and horse nettle. Consequently, most of the suggestions offered in this publication are based on results obtained in neighboring states. Detailed suggestions for the control of quackgrass are given in a separate publication.

Use of cultivation, competitive crops, and spraying is suggested in numerous combinations. Cultivation should be performed with a field cultivator equipped with wide sweeps (12 to 30 inches) that are kept sharp and operated at a depth of 4 inches. For June spraying, spray small grain when in the 5-leaf stage of growth and spray corn between first and second cultivations. Always use an ester of 2,4-D on leafy spurge, Russian knapweed, or hoary cress. Use an ester on field bindweed and thistles when growing conditions are hot and dry, but use an amine of 2,4-D under good growing conditions. MCPA is as effective as 2,4-D on thistles.

### CROPS CULTIVATION AND CHEMICALS

#### FIELD BINDWEED

**Reduce stands 75 to 90%**

1. Intensive cultivation at 2-week intervals June-July and 3-week intervals August-October.
2. Small grain, ¼ lb. 2,4-D June, cultivate stubble 3 or 4 times.

By Lyle Derscheid, Professor of Agronomy  
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3. Cultivate 3 times, sudangrass in late June, harvest and cultivate in September.
4. Intensive cultivation June 1 to August 15, alfalfa and/or perennial grass.
5. Cultivation June 1 to August 1, ¼ lb. of 2,4-D September 1.

**Reduce stands 10 to 25%**

1. Small grain, ¼ lb. 2,4-D in grain, ¼ lb. 2,4-D in stubble.
2. Corn, ¾ lb. 2,4-D after 1st cultivation, ¾ lb. after tasseling.
3. Perennial grass, ¾ lb. 2,4-D in June, ¾ lb. 2,4-D late August or September.
4. Good stand of alfalfa or alfalfa-grass mixture.

**Prevent spreading**

1. Small grain, ¼ lb. 2,4-D in June.
2. Corn, ¾ lb. 2,4-D in June.
3. Perennial grass, ¾ lb. 2,4-D in June.

#### CANADA THISTLE AND PERENNIAL SOWTHISTLE

**Reduce stands 75 to 90%**

1. Intensive cultivation, 3-week intervals June-July and 4-week intervals August-September.
2. Small grain, ¾ lb. 2,4-D June, cultivate stubble 3 or 4 times.
3. Small grain, ¾ lb. 2,4-D June, plow stubble early, ¼ lb. 2,4-D September.
4. Small grain, ¾ lb. 2,4-D June, plow October 15.

- No crop, amitrole 4 lb. when Canada thistle is budding.
- Cultivate 3 times, sudangrass late June, harvest and cultivate September.
- Intensive cultivation June 1 to August 15, alfalfa and/or perennial grass.

**Reduce stands 10 to 50%**

- Small grain,  $\frac{3}{4}$  lb. 2,4-D June,  $\frac{3}{4}$  lb. in stubble.
- Corn,  $\frac{3}{4}$  lb. 2,4-D after 1st cultivation,  $\frac{3}{4}$  lb. after tasseling.
- Perennial grass,  $\frac{3}{4}$  lb. 2,4-D June,  $\frac{3}{4}$  lb. 2,4-D late August.
- Good stand of alfalfa or alfalfa-grass mixture.

**Prevent spreading by roots**

- Small grain,  $\frac{3}{4}$  lb. 2,4-D in June.
- Corn,  $\frac{3}{4}$  lb. 2,4-D in June.
- Perennial grass,  $\frac{3}{4}$  lb. 2,4-D in June.

**Prevent seed production**

- Mow before flowers have been open 7 days.
- Spray with  $\frac{1}{3}$  to  $\frac{1}{2}$  lb. 2,4-D in June.

**Prevent reinfestation**

- Small grain or corn,  $\frac{1}{3}$  to  $\frac{1}{2}$  lb. 2,4-D in June.
- Alfalfa or perennial grass crop.

**LEAFY SPURGE**

**Reduce stands 75 to 90%**

- Intensive cultivation at 2-week intervals May-July and 3-week intervals August-October.
- Cultivate 3 times, sudangrass late June, harvest and cultivate in September.
- Intensive cultivation May 15 to August 15, alfalfa and/or perennial grass.
- \*Small grain,  $\frac{1}{3}$  lb. 2,4-D ester, 5 lb. TBA in stubble, plow.
- \*5 lb. TBA mid-May, plow, corn,  $\frac{1}{3}$  lb. 2,4-D ester.
- Heavy grazing with sheep.

**Reduce stands 10 to 30%**

- Small grain,  $\frac{1}{2}$  lb. 2,4-D ester, cultivate stubble 3 or 4 times.
- Perennial grass, 1 lb. 2,4-D ester, early June, 1 lb. late August.

**Prevent spreading**

- Small grain,  $\frac{1}{2}$  lb. 2,4-D ester, 1 lb. 2,4-D ester in stubble.
- Corn,  $\frac{1}{2}$  lb. 2,4-D ester after 1st cultivation, 1 lb. after tasseling.
- Good stand of alfalfa or alfalfa-grass mixture.
- Perennial grass, 1 lb. 2,4-D ester June.

**Prevent reinfestation**

- Small grain or corn and  $\frac{1}{3}$  to  $\frac{1}{2}$  lb. 2,4-D ester in June.
- Alfalfa or sweet clover crop.

**RUSSIAN KNAPWEED**

**Reduce stands 75 to 90%**

- Intensive cultivation at 2-week intervals May-July and 3-week intervals August-October.
- $1\frac{1}{2}$  lb. 2,4-D ester August, cultivate 3 times in spring, sudangrass late June, harvest and cultivate in September.
- Intensive cultivation mid-May to mid-August, alfalfa and/or perennial grass.
- \*Small grain,  $\frac{1}{2}$  lb. 2,4-D ester, 5 lb. TBA in stubble, plow.
- \*5 lb. TBA mid-May, plow, corn,  $\frac{1}{3}$  lb. 2,4-D ester.

**Reduce stands 10 to 30%**

- Cultivate 3 times, sudangrass late June, harvest and cultivate in September.
- Small grain,  $\frac{1}{2}$  lb. 2,4-D ester, cultivate stubble 4 times.
- Perennial grass, 1 lb. 2,4-D early June,  $1\frac{1}{2}$  lb. late August.

**Prevent spreading**

- Small grain,  $\frac{1}{2}$  lb. 2,4-D ester,  $1\frac{1}{2}$  lb. 2,4-D ester in stubble.
- Perennial grass,  $1\frac{1}{2}$  lb. 2,4-D ester in June.

**Prevent reinfestation**

- Small grain,  $\frac{1}{3}$  to  $\frac{1}{2}$  lb. 2,4-D ester June, 1 lb. 2,4-D in stubble.
- Corn,  $\frac{1}{3}$  to  $\frac{1}{2}$  lb. 2,4-D ester after 1st cultivation, 1 lb. after tasseling.

\*The use of TBA in this manner not approved by Federal Pure Food and Drug Administration.

## QUACKGRASS

### Reduce stands 90%

1. Cultivation with duckfoot or one-way disk every 3 weeks during dry year.
2. 6 lb. dalapon when quack is 4-6 inches tall, plow 10 days later, cultivate.
3. 4 lb. dalapon late April, plow after 1st good rain.
4. Mow in August, 10 lb. dalapon when regrowth 4 to 8 inches tall, plow 10 days later.
5. Plow shallow in September, 20 lb. TCA immediately.
6. 4 lb. atrazine September or October, plow in May, raise corn.
7. 4 lb. simazine September or October, plow in May, raise corn.
8. 4 lb. amitrole before quack heads, plow 2 or 3 weeks later.

## HOARY CRESS

### Reduce stands 75 to 90%

1. Perennial grass, 2 lb. 2,4-D May, 2 lb. September.
2. 10 lb. 2,4-D early spring or late fall.
3. 6 lb. amitrole June, cultivate 2 or 3 times.

### Reduce stands 10 to 20%

1. Small grain, 1/2 to 1 lb. 2,4-D ester, cultivate stubble 3 times.

### Prevent reinfestation

1. Crop, 1/2 lb. 2,4-D ester.
2. Good crop of perennial grass.

## HORSE NETTLE

### Reduce stands

1. 2 lb. 2,4,5-T ester before weed starts to bud.

## BUR RAGWEED

### Reduce stands 75 to 90%

1. 2 lb. 2,4-D ester in oil during June.

## SOIL STERILANTS

Numerous soil sterilants can be used to eliminate patches (weed nurseries) of noxious weeds with one treatment. Most of the chemicals are more effective when applied between September 1 and December 1; however, good results are often obtained from summer applications. Apply the chemical to a band 6 or 8 feet wide around the outside of the patch to kill roots that extend beyond the patch.

The following chemicals generally give 95 to 100% elimination when applied at the rates designated below for each square rod. Use the higher rates for summer application.

Chemical	Field bindweed	Thistle	Leafy spurge	Russian knapweed	Hoary cress	Horse nettle	Bur ragweed	Cost per lb.
Ammate X	—	4-6 lb.	4-6 lb.	5-7 lb.	—	—	—	0.36
Altacide	8-10 lb.	6-8 lb.	6-8 lb.	6-8 lb.	—	—	—	0.18½
Benzabor	1 lb.	1½ lb.	1½ lb.	1½ lb.	1½ lb.	—	—	0.58
Chlorax	10-12 lb.	10-12 lb.	10-12 lb.	10-12 lb.	8-10 lb.	10 lb.	8-10 lb.	0.17
Chlorea	—	6-8 lb.	6-8 lb.	6-8 lb.	—	—	5-7 lb.	0.32
Conc. borascu	15 lb.	12-15 lb.	10 lb.	15 lb.	—	15 lb.	12-15 lb.	0.07½
D. B. Gran.	—	5-6 lb.	5-6 lb.	5-7 lb.	—	—	—	0.15
Fenac	½ pt.	½ pt.	½ pt.	½ pt.	—	—	—	0.88*
Novon Conc.	1-2 pt.	1-2 pt.	1-2 pt.	1-2 pt.	—	—	—	0.38*
Polybor-chlorate	10-12 lb.	10-12 lb.	10-12 lb.	10-12 lb.	8-10 lb.	10 lb.	8-10 lb.	0.14
Sodium chlorate	5-6 lb.	5 lb.	5 lb.	5 lb.	4-6 lb.	5 lb.	4-6 lb.	0.17½
2,3,6-TBA	¾ pt.	¾ pt.	½ pt.	½ pt.	½ pt.	½ pt.	½ pt.	0.62½*

\*Price per pint.

