

JUN 21 1971

Row Cultivated Crops

The 3-C's of

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# Perennial Weed Control

## Chemicals — Cultivation — Crop Rotation

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Perennial noxious weeds have taken many years to develop into the serious problem they are today. They are mostly foreign plants introduced into a favorable ecological situation. As such, they are the most serious pollutant of our land resource. Only through a persistent, conscientiously applied program over several years can they be eradicated. The suggestions made in this and other publications have been successfully applied by other land owners. They will help you to solve your perennial weed problem if you fit them to your land and crop management programs.

**Team Work**

The most effective and practical method of controlling perennial weeds in badly infested fields is to apply a suitable combination of cropping, chemicals and cultivation. By developing and persistently applying a combination fitted to the individual farm it is possible to increase crop yields and also bring perennial weeds under control.

**Suitable Crops**

Crops best adapted to use for controlling these weeds are silage or grain corn, small grains, or grass. Short season cultivated crops, such as beans and potatoes can be used to advantage. Thick vigorous alfalfa is very effective in controlling Canada thistle. It is also effective in checking field bindweed.

Most other crops should not be grown on land infested with perennial weeds.

**Fertilizer and Management Essential**

Good stands of healthy vigorous crops compete best with weeds, and are also essential for high yields. Have a soil test to determine fertilizer needs. Use adequate amounts of nitrogen, phosphorous and other needed nutrients. Prepare a good seed bed, use heavy seeding rates, irrigate properly and manage for top yields.

**Crop Rotations for Irrigated Areas**

It is usually best to plant grain or corn for three consecutive years when starting a crop-rotation program for weed control. Spray with 2,4-D twice a year as outlined in the chart. This reduces the stand of weeds so that a vigorous, thick stand of alfalfa hay or grass pasture can be established. After 4 years of alfalfa cut for hay, or grass pasture sprayed twice a year with 2,4-D, plow the field and plant it to beans, potatoes, or cereals. When a suitable crop rotation and spraying program is conscientiously followed, the weeds will be reduced to the point where spot application with an appropriate herbicide will eliminate the few remaining plants. It may be necessary to repeat the rotation and spray program.

The following suggested rotation may have to be modified for different areas and for different types of weeds. Severe weed situations may require fallow in the rotation. Use appropriate herbicides and other practices to control weeds each year of the rotation.

**SUGGESTED ROTATION—IRRIGATED AREAS**

First year . . . . .	Grain or corn
Second year . . . . .	Grain or corn
Third year . . . . .	Grain or corn
Fourth year . . . . .	Alfalfa hay or grass pasture
Fifth year . . . . .	Alfalfa hay or grass pasture
Sixth year . . . . .	Alfalfa hay or grass pasture
Seventh year . . . . .	Alfalfa hay or grass pasture
Eighth year . . . . .	Potatoes, beans, grain or corn

**Use of Herbicides for Perennial Weed Control in Cereals**

2,4-D is registered for a rate no higher than 1½ lbs. per acre applied either between tillering and boot or from dough stage to harvest. When used between tillering to boot do not feed or graze treated foliage for 2 weeks. When used at dough or later



	FIELD BINDWEED	CANADA THISTLE OR PERENNIAL SOW THISTLE	WHITETOP
<b>BEANS — Commercial</b>  Do not use 2,4-D or other phenoxy type herbicides where beans are grown for seed.	Pre-planting treatment. Permit weeds to grow in early spring. Spray with 2 lbs. of 2,4-D per acre. Irrigate the same day. Wait 2 weeks; plow deep. Prepare firm seed bed. Plant early variety of beans. After harvest, irrigate; wait 2 weeks and spray with 3 lbs. of 2,4-D per acre.	Pre-planting treatment - permit weeds to grow. Spray 2 lbs. 2,4-D per acre, irrigate same day, wait 2 weeks, plow deep, prepare firm seed bed, plant early variety of beans. After harvest irrigate, wait 2 weeks, spray with 3 lbs. 2,4-D or with 8 lbs. amitrole per acre. If amitrole is used do not apply after October 1, and do not seed treated area less than 8 months after application.	Pre-planting treatment - permit whitetop to grow early bud stage, spray with 2 lbs. 2,4-D per acre, irrigate same day, wait 2 weeks, plow deep, plant beans.  After harvest cultivate with duckfoot cultivator 8th day after whitetop emerges. Substitute for plowing for last cultivation.
<b>CORN — Grain or Silage or Sweet Corn</b>  Sweet corn varieties are more sensitive to 2,4-D. Before using in a perennial weed control program consult your dealer or processor on 2,4-D tolerance of the particular hybrid.	Pre-planting treatment - use pre-planting treatments in the same manner and at the same rates as given under BEANS. If the perennial weeds appear again before the corn silks, spray again with 1-1/2 lbs. 2,4-D per acre. Do not spray when corn is silking. Use nozzle extensions to avoid spraying 2,4-D on corn plant. Sprays can be used after harvest in the same manner as given for each of the weeds under beans. Cultivation after harvest is preferred to spraying because it controls grass weeds.	Pre-planting treatment - use in the same manner and at the same rates as given under BEANS or allow thistle to grow, spray with 4 lbs. amitrole per acre or 2 gals. of amitrole T. Apply in 40-80 gallons of water per acre. Use wetting agent, wait 2 weeks, plow, prepare seed bed and plant. If the perennial weeds appear again before the corn silks, spray with 1-1/2 lbs. 2,4-D per acre. Do not spray when corn is silking. Use nozzle extensions to avoid spraying 2,4-D on corn leaves. Sprays can be used after harvest in the same manner as given for each of the weeds under BEANS. Cultivation after harvest is preferred to spraying because it controls grass weeds.	
<b>POTATOES — Late Commercial</b>  Do not use seed potatoes as a crop to control perennial weeds.	Permit weeds to grow in early spring. Spray 2 lbs. 2,4-D per acre, irrigate same day, wait 2 weeks. Prepare seed bed and plant. Duckfoot cultivate deep instead of plowing. Hoe weeds emerging in crop. In fall, if potato vines have been killed by frost 10 days before harvest and weed growth is still green, spray with 2 lbs. 2,4-D per acre.	Permit weeds to grow in early spring. Spray 2 lbs. 2,4-D per acre, irrigate same day, wait 2 weeks. Prepare seed bed and plant. Duckfoot cultivate deep instead of plowing. Hoe weeds emerging in crop. In fall, if potato vines have been killed by frost 10 days before harvest and weed growth is still green, spray with 2 lbs. 2,4-D per acre.	
<b>PEAS — Dry</b>  Dry peas are not a good crop to grow in a rotation to control noxious weeds. However, if crop is planted follow procedure given for each weed.	Irrigate after harvest and fall spray using 3 lbs. 2,4-D per acre.	Irrigate after harvest and fall spray using 3 lbs. 2,4-D per acre.	Irrigate after harvest and fall spray using 3 lbs. 2,4-D per acre.
<b>SUGARBEETS RED CLOVER CARROTS ONIONS</b>	These crops should not be grown in areas infested with weeds. Because of the crops, they cannot be plowed in badly infested areas.		



**RUSSIAN KNAWEED OR  
LEAFY SPURGE**

**PERENNIAL GROUND CHERRY  
OR PERENNIAL MILKWEED**

**QUACKGRASS**

Pre-planting treatment - permit weeds to grow. Spray with 2 lbs. 2,4-D per acre. Irrigate the day of application. Wait 2 weeks. Plow and prepare firm seed bed. Plant early variety beans. After harvest irrigate, wait 2 weeks and spray with 3 lbs. of 2,4-D per acre.

Beans should not be grown on fields infested with ground cherry or milkweed. These weeds start growth late and reach maturity along with the beans.

1. Fall plow or plow as early as possible in spring. Cultivate with a spring tooth harrow every 7 days until planting time. After harvest continue dry cultivation every 7 days as long as conditions permit.

2. In fall obtain 4"-6" of quackgrass growth and apply 10 lbs. of actual dalapon (12 lbs. of 85% material) or 4 lbs. amitrole per acre on growing quackgrass. Use a wetting agent in the spray. Wait 7 days to 10 days and plow. In the spring cultivate with spring tooth harrow until planting time. Prepare firm seed bed and plant.

3. Fall plow, in spring disc to chop quackgrass rhizomes into 3"-4" lengths. Apply 4 lbs. of E.P.T.C. (Eptam) and incorporate thoroughly by discing and cross-discing. Prepare firm seed bed and plant.

Pre-planting treatment - use pre-planting treatments in the same manner and at the same rates as given under BEANS. If the perennial weeds appear again before the corn silks, or tassels, spray with 1-1/2 lbs. 2,4-D per acre. Do not spray when corn is silking. Use nozzle extensions to avoid spraying 2,4-D on corn leaves. Herbicides can be used after harvest in the same manner as given for each of the weeds under BEANS. Cultivation after harvest is preferred to spraying because it controls grassy weeds.

These weeds start growth late in spring; therefore, if possible the fall before, treat green growth with 4 lbs. Amitrole in 40-80 gallons of water per acre. Use wetting agent. Plow in late fall or in spring, prepare seed bed and plant. For growth that appears after corn is planted and before it silks, spray with a mixture of 4 oz. Dicamba and 1-1/2 lbs. 2,4-D per acre. Use drop nozzles and avoid spraying corn leaves.

Follow the same procedure as given in (1) and (2) under BEANS.

3. Allow grass to grow to 4 or more inches in spring and spray with 4 lbs. of Amitrole per acre in 40-80 gallons of water. Use wetting agent, irrigate, wait 2 weeks, plow, prepare seed bed and plant.

4. If corn is to be planted the following 2 years, atrazine can be used to control and eliminate quackgrass. Apply no more than 5 lbs. of atrazine per acre either as a split application or as a single application. As a split application, apply 2-1/2 lbs. in the fall or early spring, wait at least one week, plow, prepare seed bed and plant. Apply the second application of 2-1/2 lbs. per acre before weed growth is 1-1/2 inches high. This can be before, during, or after planting. As a single application, apply 3 3/4 lbs. to 5 lbs. per acre in the fall or spring. Wait at least 1 week, plow, prepare seed bed and plant corn.

If using atrazine do not plant any crop other than corn for at least 2 years after application. At least 1 untreated crop of corn should be grown before planting a sensitive crop. Before planting any crop other than corn, plow deep and thoroughly till the soil to reduce possible injury.

Permit weeds to grow in early spring. Spray 2 lbs. 2,4-D per acre, irrigate same day, wait 2 weeks. Prepare seed bed and plant. Duckfoot cultivate deep instead of plowing. Hoe weeds emerging in crop. In fall, if potato vines have been killed by frost 10 days before harvest and weed growth is still green, spray with 2 lbs. 2,4-D per acre.

These weeds start growth late in spring. Therefore, plow and cultivate deep just before planting. After planting make first cultivations deep, then shallow cultivate as long as practical.

Potatoes should not be planted on land infested with quackgrass unless adequate control treatment is applied. The following treatment will give quackgrass control: (1) In fall, apply 12 lbs. of 85% dalapon material to fresh quackgrass growth at least 4 inches high. Use wetting agent. Wait 4-7 days and plow. In spring cultivate with spring tooth-type harrow until planting time. (2) Plow in fall; in spring disc and cross disc until quackgrass roots are cut into 3"-4" segments. Apply 1 gallon of E.P.T.C. (Eptam) incorporate immediately by discing and cross discing. Plant potatoes.

Irrigate after harvest and fall spray using 3 lbs. 2,4-D per acre.

Irrigate after harvest and spray with 8 lbs. of Amitrole per acre. Wait 8 months after application before planting another crop.

After harvest plow and then dry cultivate with a spring tine harrow every 7 days; continue as long as possible.

planted on clean ground not infested with noxious growing season required for the production of these advantage in a cropping program to control noxious s.



stage do not use straw for feed. Use amine formulation.

Dicamba (Banvel) is registered for spot use in Idaho under wheat fallow programs and where wheat will follow wheat in the crop sequence. It does an excellent job on field bindweed, Canada thistle and Russian knapweed. It does a fair job on leafy spurge.

### Rotations for Non-Irrigated Areas

The choice of a rotation under non-irrigated conditions is usually determined by the amount of annual moisture. Therefore, fallow must often be included in the rotation. A well managed fallow program is the most effective method for controlling perennial weeds in non-irrigated fields. Where perennial weeds exist, cultivate the fallow every 14 days with a cultivator that will cut off all weed shoots.

A grain crop that can be sprayed with 2,4-D is best to include in a rotation under non-irrigated conditions. Under most non-irrigated conditions, only one spraying a year is possible. This spray, combined with cultivation immediately after harvest and a deep fall plowing, will thin the stand sufficiently to permit establishment of grasses, alfalfa, or sweet clover. Do not seed a grain crop when establishing alfalfa or grasses. The alfalfa or grasses need all the room to grow strong root systems. It will be necessary to mow the grasses or legumes one or more times to control the weeds the first season.

### SUGGESTED ROTATIONS

	8-year	8-year	6-year	3-year
First year . . . . .	Grain	Grain	Grain	Wheat
Second year . . . .	Grain	Grain	Sweet Clover	Fallow
Third year . . . . .	Alfalfa	Grass	Sweet Clover for green manure	Wheat
Fourth year . . . . .	Alfalfa	Grass	Grain	(Periodically
Fifth year . . . . .	Alfalfa	Grass	Grain	work in grass
Sixth year . . . . .	Alfalfa	Grass	Fallow*	or alfalfa crop)
Seventh year . . . .	Grain	Grain		
Eight year . . . . .	Fallow*	Fallow*		

\* Cultivate every 14 days if perennial weeds are present; otherwise, often enough to control annual weeds and prevent seed production.

### Weed Seedlings

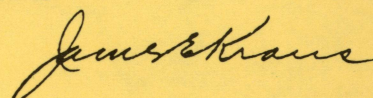
Thousands of weed seeds may infest the plow layer of soil in old, established stands of perennial weeds. Chemicals do not kill weed seeds. CONTROL OF SEEDLING PLANTS IS, THEREFORE, ESSENTIAL IN ANY WEED PROGRAM. Killing young seedlings is easy. Seedlings of any noxious weeds die when the roots are cut by cultivation or when sprayed with the proper herbicide within a month after they come through the ground. Kill them before they can become established.

### Ditches and Fence Rows

Encourage the growth of desirable perennial grasses along ditch banks and fence rows. A thick stand of grass provides competition to weeds and helps to keep them from becoming established. Level and seed all new ditch banks immediately. Plant crested wheat or stream bank wheat grass on the dry banks, Kentucky bluegrass on the better moisture sites and redtop at the water's edge. Spray weeds at least twice a year on ditch banks and in fence rows with 2,4-D or other suitable herbicides. Apply in 30 to 60 gallons of water per acre.

*Trade names are used occasionally for better understanding of information presented. No endorsement of name products is intended nor is criticism implied of similar products not mentioned.*

PUBLISHED AND DISTRIBUTED IN FURTHERANCE OF THE ACTS OF MAY 8 AND JUNE 30, 1914,  
BY THE UNIVERSITY OF IDAHO COOPERATIVE EXTENSION SERVICE, JAMES E. KRAUS,  
DIRECTOR; AND THE U.S. DEPARTMENT OF AGRICULTURE, COOPERATING.



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