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WEED CONTROL

With

Chemicals
Cultivation
Rotation

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We Need Teamwork

The most effective and practical method of controlling noxious weeds in badly infested fields is a combination of suitable crops in rotation, plus the use of chemical sprays. This program makes conditions favorable for crop production and at the same time unfavorable for growth and spread of weeds. Such a weed program when conscientiously and persistently carried out brings increased crop yields and at the same time brings weeds under control.

Suitable Crops

Crops most suitable to use in a rotation for the control of weeds are canning or silage corn, cereals, or grass pastures. These can be selectively sprayed with 2,4-D. Short-season cultivated crops such as beans and potatoes can be used to advantage. A good, thick stand of alfalfa, cut three times a year for hay and maintained in a vigorous condition for 4 years, is very effective in controlling Canada thistle. Alfalfa is also effective in controlling many other perennial and annual weeds. Early cutting of alfalfa prevents many annual weeds from seeding. Maintained over a period of 4 years, it helps to hold many perennial weeds in check and thins out stands of others. Grass pastures amply fertilized with nitrogen and sprayed twice a year with 2,4-D are effective in controlling most noxious weeds.

Use Fertilizers

Use nitrogen fertilizer on cereal crops, corn, and grass pastures. Use phosphate, boron, or sulfur fertilizers on alfalfa if soil tests or the appearance of the crop indicates that fertilizers would be of help. Strive for high crop yields. Good crops give more competition to weeds. **Prepare the best seedbed possible, use heavy seeding rates, and apply all the fertilizer that the crop can use.**

Crop Rotations for Irrigated Areas

It is usually best to plant grain or corn for two 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 good, 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 good crop rotation and spraying program is conscientiously followed, the weeds will thin out to the point where carbon bisulphide or sodium chlorate will eliminate the few remaining plants. If the weeds have not thinned out so that it is practical to use carbon bisulphide or chlorate to eradicate the remaining plants, repeat the rotation and spray program.

The suggested rotation which follows may have to be modified for different areas and for different types of weeds. Severe weed situations may require fallow in the rotation.

SUGGESTED ROTATION — IRRIGATED AREAS

First year	—	Grain or Corn
Second year	—	Grain or Corn
Third year	—	Alfalfa Hay or Grass Pasture
Fourth year	—	" " " " "
Fifth year	—	" " " " "
Sixth year	—	" " " " "
Seventh year	—	Potatoes, Beans, Grain or Corn

Ditches and Fence Rows

Encourage the growth of 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. Plant Kentucky bluegrass, smooth brome, orchard grass, or other adapted grasses on bare spots. Level and seed all new ditch banks immediately. Spray weeds thoroughly twice a year at the rate of 1 gallon of 2,4-D amine in 50 gallons of water per acre.

Non-Irrigated Areas

The choice of a rotation under non-irrigated conditions is usually limited by the amount of annual moisture. Because of this, fallow must often be included in the rotation. A properly operated fallow program is the most effective method of controlling perennial weeds in non-irrigated fields. Where perennial weeds exist, cultivate the fallow every 14 days.

A grain crop that can be sprayed with 2,4-D is best in selecting 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 with alfalfa or grasses. It will be necessary to mow the grasses or legumes one or more times to control the weeds the first season. The alfalfa or grasses need all the room to establish strong root systems.

THREE SUGGESTED ROTATIONS

	Eight-Year	Eight-Year	Six-Year
First year	Grain	Grain	Grain
Second year	Grain	Grain	Sweet clover
Third year	Alfalfa	Grass	Sweet clover for Green manure
Fourth year	Alfalfa	Grass	Grain
Fifth year	Alfalfa	Grass	Grain
Sixth year	Alfalfa	Grass	Fallow*
Seventh year	Grain	Grain	——
Eighth 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

Hundreds of weed seeds may infest a cubic foot of soil in old, established stands of perennial weeds. Sodium chlorate, carbon bisulphide, or 2,4-D will not kill weed seeds buried in the soil. **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 sprayed with 2 pounds of 2,4-D per acre within a month after they come through the ground. Kill them before they can become established.

Prepared by the Idaho Agricultural Extension Service in cooperation with Idaho Agricultural Experiment Station and the Idaho Noxious Weed Association.

Cooperative Extension Work In Agriculture and Home Economics, D. R. Theophilus, Director, University of Idaho College of Agriculture and United States Department of Agriculture Cooperating.
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Your Chart for Weed Control by Crop Rotations, Chemicals, and Cultivation

USE OF GUIDE CHART

Use the outline given below as a guide in choosing methods and crop rotations which will be the most effective for controlling weeds in fields on your particular farm. By referring to the table you can determine the best way to handle a particular weed problem in a specific crop. Because of difference in elevation, lengths of growing season, moisture and soil conditions in the different farming areas of Idaho, it is difficult to suggest rotations that will fit all conditions.

A Chart For Weed Control By Crop Rotations, Chemicals, and Cultivation

Crop	Morning Glory Perennial Sow Thistle	Canada Thistle	Whitetop	Russian Knapweed Leafy Splurge	Perennial Ground Cherry Perennial Milkweed	Quackgrass
Grain— Wheat, barley or oats Early maturing cereal varieties are suggested. Repeat for 2 years.	Spray with 2 lb. 2,4-D per acre after stooling but before booting; or after the grain has headed. This gives 2 periods for spraying each about 2 weeks long. After harvest either (1) remove excess straw, irrigate at once, spray at 2 lb. per acre; or (2) cultivate every 14 days from harvest till growth stops. In non-irrigated areas, wait for fall emergence of weeds, spray again, plow during spring.	Proceed as under morning glory for treating in the grain crop.—After harvest either: (1) remove excess straw, irrigate, spray at 4 lb. 2,4-D per acre or (2) cultivate every 14 days. Plow 10 inches deep in late fall. In non-irrigated areas, cultivate or plow immediately after harvest, continue cultivating as regrowth appears. Plow deep in late fall.	Spray with 2 lb. 2,4-D per acre as soon as grain is stooled. After harvest either: (1) irrigate, plow, then cultivate each 8th day after whitetop emerges; or (2) in late fall spray at 3 lb. per acre 2,4-D. In non-irrigated areas: (1) wait for fall emergence and plow. Plant to winter wheat; or (2) plow deep and cultivate next season.	Spray with 2 lb. 2,4-D per acre just before grain boots or after grain is headed. After harvest, either: (1) remove excess straw, irrigate, spray at 4 lb. 2,4-D per acre; or (2) cultivate every 14 days. Plow deep in late fall. Leave rough.——In non-irrigated areas cultivate after harvest.	Spray with 2 lb. 2,4,5-T per acre (Not 2,4-D) just before grain boots, or after the grain has headed. ——After harvest either: (1) remove excess straw, irrigate, wait 2 weeks, spray 4 lb. 2,4,5-T per acre; or (2) cultivate every 14 days, plow deep in late fall.	Do not irrigate after harvest. Plow immediately after harvest, thereafter cultivate each week, and continue as late as possible. NOTE: Quackgrass prefers a moist soil. Therefore, take advantage of dry soil conditions as an aid to killing quackgrass by cultivation.
To Establish Alfalfa For Hay or Grass Pasture	On Irrigated Land.	Having been in grain for 2 years and treated as given under **GRAIN**, the weed infested field should be seeded to a forage crop. Plow deep in spring, prepare firm seedbed, apply necessary fertilizers. To control Canada thistle seed 15 lb. per acre wilt resistant (Ranger) alfalfa. To control all other weeds seed heavy rate of grass mixture. Irrigate thoroughly. Mow as necessary for weed control until crop is established. Where forage crop can be established after grain is harvested, proceed as follows; irrigate immediately after harvest, spray as given for weed under **GRAIN**, wait 7 days, plow 10 inches deep, prepare firm seedbed, seed desired forage crop.				Quackgrass control is not possible if field is planted to alfalfa or grass pasture.
Established Grass Pasture Fertilize every year as necessary	Spray in early summer with 2 lb. 2,4-D per acre. Spray again in the fall at same rate.	Spray in early summer with 2-4 lb. 2,4-D per acre. Spray again in the fall at same rate.	Spray in early spring with 2 lb. 2,4-D per acre. Spray again in late fall at same rate.	Spray in early summer with 4 lb. 2,4-D per acre. Spray again in the fall at same rate.	Spray in early summer with 2 lb. of 2,4,5-T per acre. Spray again in fall at same rate.	No control or eradication possible in pastures or alfalfa fields.
Alfalfa	A good thick stand of alfalfa cut for hay will prevent spread of morning glory. Alfalfa will not crowd out morning glory but will weaken the plants. For establishing alfalfa see section above headed **"To Establish Alfalfa, for Hay or Grass for Pasture."**	Where 3 cuttings per year are possible, a thick stand of alfalfa maintained 4 years should give complete eradication. Plant a wilt resistant alfalfa. It is necessary to hold a thick stand for 4 years.	**Do Not Use** Alfalfa fields infested with whitetop must be cut early (when white top begins blooming) to prevent whitetop from producing seed.	**Do Not Use** Alfalfa will not eradicate these weeds but well fertilized, heavy stands of alfalfa will aid in weakening and limiting the spread of these weeds when three cuttings are taken per year.		**Do Not Use** Cut to prevent seed. Quackgrass stands will increase in alfalfa.
Beans (Commercial) Not To Be Used On Beans Grown or Used For Seed.	**Pre-Planting Treatment:** Permit weeds to grow in early spring. Spray 2 lb. 2,4-D per acre at least 2 weeks before planting, irrigate same day, wait 2 weeks, plow deep, prepare firm seedbed, **Plant early variety beans.** After harvest irrigate, wait 2 weeks spray again at same rate.	**Pre-Planting Treatment:** Permit weeds to grow. Spray 3 lb. 2,4-D per acre at least 2 weeks before planting, irrigate same day, wait 2 weeks, plow deep, prepare firm seedbed, **plant early variety beans.** After harvest irrigate, wait 2 weeks spray again at same rate.	**Pre-Planting Treatment:** Permit whitetop to grow to early bud stage, spray with 2-3 lb. 2,4-D per acre, irrigate same day, wait 2 weeks, plow deep. Plant beans. After harvest, cultivate every 8th day after whitetop emerges, substitute deep plowing for last cultivation.	**Pre-Planting Treatment:** Permit weeds to grow. Spray 4 lb. 2,4-D per acre at least 2 weeks before planting, irrigate same day, wait 2 weeks, plow deep, prepare firm seedbed, **plant early variety beans.** After harvest irrigate, spray again at same rate.	Beans should not be grown on areas infested by ground cherries. These weeds start growth late and reach maturity along with the beans. Other crops should be used.	Plow early as possible. Cultivate every 7 days until planting beans. After harvest, do not irrigate, cultivate every 10 days. Continue late as possible. Very effective in controlling quackgrass.
Corn For Canning or Silage	**Pre-Planting Treatments:** 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 again at 1-2 lb. 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. Some varieties of corn may be severely injured by 2,4,-D. Consult your dealer or producer on resistance of the particular corn strain to 2,4,-D.				Spray with 2 lb. 2,4,5-T per acre before any tassels or silks appear. Use nozzle extensions to avoid spraying 2,4,5-T on corn plant. After harvest spray using 4 lb. 2,4,5-T per acre.	Cultivate as long as possible before planting and again after harvest at 10 day intervals.
LATE POTATOES (Commercial) Do Not Use On Potatoes Grown Or Used For Seed.	**Pre-Planting — — —** Permit weeds to grow in early spring. Spray 2 lb. 2,4-D per acre at least 2 weeks before planting, irrigate same day, wait 2 weeks. Duckfoot cultivate deep instead of plowing. Hoe weeds emerging in crop or, spray again at same rate 10 days before harvest.	**and other — — —** Proceed as given under **Morning Glory.** After planting either: (1) hoe to control any plants that emerge in the crop, or (2) 10 days before harvest, spray at 2 lb. 2,4-D per acre.	**Follow up — — —** Permit whitetop to grow to early bud stage, spray at 2 lb. 2,4-D per acre, irrigate, wait 2 weeks. Duckfoot cultivate deep instead of plowing. After planting either (1) hoe to control weeds emerging in crop; or (2) spray 10 days before harvest at 2 lb. 2,4-D per acre.	**treatments:** Permit weeds to grow. Spray 4 lb. 2,4-D per acre, irrigate, wait 2 weeks. Duckfoot cultivate deep instead of plowing. After planting (1) hoe to control weeds emerging in crop or, (2) 10 days before harvest spray again at 4 lb. 2,4-D.	These weeds start growth late in spring. Therefore, plow and cultivate deep just before planting. After planting (1) make first cultivations deep, then shallow cultivate as long as practical. Thereafter hand hoe; or (2) 10 days before harvest spray 3 lb. 2,4,5-T per acre.	Potatoes should not be planted on land infested with quackgrass.
PEAS (Dry)	Dry peas are not a good crop to grow in a rotation to control noxious weeds.				If planted, irrigate after harvest and fall spray using 4 lb. 2,4,5-T per acre.	After harvest, dry cultivate every 10 days continue as long as possible.
	If planted, irrigate after harvest and fall spray using 3 lb. 2,4-D per acre.	If planted, irrigate after harvest, and fall spray, using 4 lb. 2,4-D per acre.	If planted, irrigate after harvest, and cultivate or late fall spray using 3 lb. 2,4-D per acre.	If planted, irrigate after harvest, and fall spray 4 lb. 2,4-D per acre.		
Sugar Beets Red Clover ONIONS CARROTS	These crops should be planted on clean ground not infested with noxious weeds. Because of the long growing season required for the production of these crops, they cannot be used to advantage in a cropping program to control noxious weeds in badly infested fields.					
ORCHARD Use Amine Type Only Avoid Contact With Leaves	Spray in early summer with 2 lb. 2,4-D. Respray in fall with 2 lb. 2,4-D.	Spray in early summer with 3 lb. 2,4-D. Respray in fall with 3-4 lb. 2,4-D.	Spray in early spring with 2 lb. 2,4-D. Respray in fall with 2 lb. 2,4-D.	Spray in early summer with 4 lb. 2,4-D. Respray in fall with 4 lb. 2,4-D.	Spray in early summer with 2 lb. 2,4,5-T. Respray in fall with 2 lb. 2,4,5-T.	

Use amine form of 2,4-D and 2,4,5-T with the above recommendations.

—— PERSISTENCE IS THE KEY TO WEED CONTROL ——