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4-19-2011

Sirs,

Here is a manual from the Alvin Young collection, produced by the Department of Agriculture and the University of Maryland, on how to properly use the rainbow herbicides.

- 1. Farmers Bulletin No. 2183, U.S. DEPARTMENT OF AGRICULTURE & the University of Maryland. The facts are these herbicides were the industry standard for that time for vegetation control. The DoD denies the rainbow herbicides were used on Guam, so where is their evidence of some other herbicide being used on Guam?
- 2. This "user's manual" was printed in May 1962 and revised in January 1971 after I was exposed in Guam. So in 1969 1970 we were not doing anything unusual or illegal by using these herbicides. As you can see these herbicides were the "standard" for that time. The reason why these two herbicides were mixed was 2-4-D was more effective on some weeds and the 2-4-5-T was more effective on other weeds.
- **3.** These herbicides were approved for use by the Department of Agriculture and the University of Maryland for farming and vegetation control. Now the DoD states that there are no records showing the use of these herbicides on Guam and at the same time they are testing for them in the well water and finding them there (see page 29). It must be "magic" how they got there.
- **4.** It is so aggravating to have people trying to rewrite history on us. The facts are straight forward. If this case was in a civil court, it wouldn't be dragging on forty years later. There appears to be some kind of conspiracy going on.
- **5.** The DoD states they don't have any records of the rainbow herbicides being on Guam while denying the pictures and eye witness testimony from the people handling the drums of the rainbow herbicides. Then the VA approves the claims for the eye witnesses and the VA turns our claims down without even looking at our evidence.
- **6.** At what point does the "Reasonable Doubt" regulation (38 CFR 3.102) kick in? The Government has no evidence and the Veterans have a mountain of evidence. If that doesn't meet or exceed the standards for the Reasonable Doubt regulation, I can't imagine what would.

I think besides paying us for the damage they have done to our bodies they should have to pay us for the HELL they are putting us through mentally and financially. It has to be causing PSTD or some kind of mental stress and damage to us.

Ralph Stanton 816-262-0097 rstanton@stjoelive.com

Contents: Point Paper About Agent Orange On Guam	Pages	1
Contents: Location Where the User Manual was Found	Pages 2	2-4
Contents: User's Manual for the Rainbow Herbicides	Pages 5-	-28
Contents: Well Water Data Report Showing Herbicides in Well Water	Pages	29
Contents: Robert Burgett VA Case Approved for Agent Orange On Guam	Pages 30-	-32
Contents: Robert Burgett Statement with Photo Descriptions & Photos	Pages 33-	35
Contents: Robert Burgett Additional Letter	Pages 3	36
Contents: Roger Richmond Statement About Agent Orange On Guam	Pages 3	37
Contents: Jimmy Dale Young Statement About Agent Orange on Guam		38
Contents: 38 CFR 3.102 Reasonable Doubt Regulation	Pages 3	39

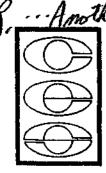
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Page 3722 of 3802

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Another classic see mugwort COOPERATIVE EXTENSION SERVICE UNIVERSITY OF MARYLAND **COLLEGE PARK - -- EASTERN SHORE**

Vegetable Research Farm Rt. 5 Salisbury, Maryland 21801

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Sent by: C. Edward Beste

C. Edward Beste Extension Weed Specialist

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Formers' Bulletin No. 2183 . U.S. DEPARTMENT OF AGRICULTURE

USING PHENOXY HERBICIDES EFFECTIVELY

COMMON AND CHEMICAL NAMES OF PHENOXY HERBICIDES

Common name	Chemical name
2,4-D	2,4-dichlorophenoxyacetic acid
2,4,5-T	2,4,5-trichlorophenoxyacetic acid
Silvex	2-(2,4,5-trichlorophenoxy)propionic acid
MCPA.	2-methyl-4-chlorophenoxyacetic acid
2,4-DB	4-(2,4-dichlorophenoxy)butyric acid

The U.S. Department of Agriculture has suspended the use of liquid formulations of 2,4,5-T around the home and of all formulations on lakes, ponds, and ditchbanks. Also, the Department has cancelled use of all formulations of 2,4,5-T on food crops and of dry formulations around the home. 2,4,5-T should not be used in any of the above situations, and inclusion of 2,4,5-T in this publication does not suggest such uses.

CONTENTS

	Page
How plants react	3
Salts and esters	3
"Acid equivalent"	5
Application	
General principles	5
Methods	
Testing output of sprayer	8
Cleaning spray equipment.	
Susceptibility chart	11



This bulletin supersedes Farmers' Bulletin 2005, "Using 2,4-D Safely."

Washington, D.C.

Issued May 1962 Revised January 1971

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USING PHENOXY HERBICIDES EFFECTIVELY

2,4-D, 2,4,5-T, MCPA, Silvex, 2,4-DB

By D. L. Klingman and W. C. Shaw, Crops Research Division, Agricultural Research Service

Phenoxy herbicides—chiefly 2,4-D, 2,4,5-T,¹ silvex, MCPA, and 2,4-DB—are used widely. They are used for controlling weeds in many crops, on grazing lands, on lawns, and for killing unwanted brush and trees. These herbicides are especially useful because—

• They are selective; they kill most broadleaf plants but do not kill grasses or grain crops.

• They are potent; many species of weeds are controlled by less than 1 pound of active ingredient per acre.

• They are easy to use.

• They are not poisonous to man, domestic animals, or game when applied at the recommended rates.

• They do not accumulate in the soil and they have no harmful effects on soil organisms.

• They are not corrosive to spraying equipment.

HOW PLANTS REACT

When sprayed with phenoxy herbicides, leaves, green stems, twigs, flowers, and fruits usually absorb the herbicides. Roots absorb herbicides sprayed on the soil.

¹See limitation on use of 2,4,5-T on page 2.

When they are applied to growing plants or to the soil, herbicides rapidly become distributed in the leaves, stems, and roots and cause susceptible plants to die.

These herbicides are absorbed most readily by plants that are growing rapidly. Annual weeds are easiest to kill when they are young. Perennial weeds are easy to kill while they are seedlings; after they are established, most perennials are easiest to kill at the time flower buds appear.

Some broadleaf weeds are killed by very small amounts of phenoxy herbicides. Some are almost unaffected by very large amounts.

The chart on pages 12 to 24 lists the susceptibility of many common weeds and woody plants to control by 2,4-D, 2,4,5-T,¹ MCPA, silvex, and 2,4-DB.

SALTS AND ESTERS

Phenoxy herbicides are usually formulated as acids, salts, and esters. Salt and ester formulations usually are supplied as liquid concentrates. The purchaser mixes them before use. The salt concentrates form solutions when mixed with water. The ester concentrates form solutions when mixed with oil; they form milky-white

emulsions when mixed with water.

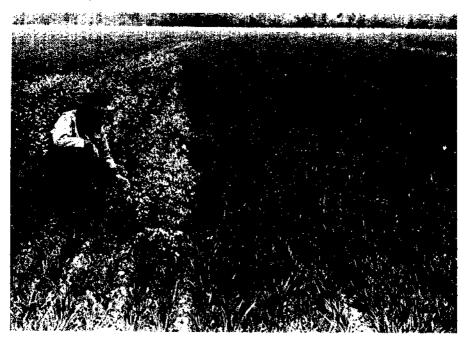
Heat causes ester formulations to release vapors. At temperatures below 90° F., low-volatile esters are much less volatile than highvolatile esters, and are less likely to damage susceptible crops. Vapors from either low- or high-volatile esters are about equally phytotoxic at temperatures above 90° F.

Vapors from ester formulations can kill susceptible plants growing near the area to which the formulations are applied. Low-volatile esters are safer—that is, less likely to harm susceptible crops by toxic vapors than high-volatile esters. Salt formulations are safest—they do not release enough vapors to cause damage.

High-volatile esters are less expensive than low-volatile esters and they can be used effectively and safely if no susceptible crops are growing nearby.

Ester formulations of the phenoxy herbicides are generally more potent, pound for pound, than salts. They penetrate leaves and other plant surfaces more readily than salts. When a range of rates is recommended for herbicide application, use the lower rate for esters and the higher rate for salts.

Esters are more effective than salts for killing weeds that are growing slowly because of drought or cold weather. Esters usually are best for treating weeds in areas of low humidity; esters are formulated in oils and remain in moist contact on foliage longer and penetrate better than salts, which are mixed with water. And, because



BN-18721-X

Weeds in this field of small grain (treated part at right) were controlled with 2,4-D. The herbicide costs about 25 cents per acre. they are oily, esters are less likely than salts to be washed off foliage if rain falls soon after their application.

"ACID EQUIVALENT"

Phenoxy herbicide concentrates are available in various strengths. The amount of active ingredient in the concentrate is indicated on the container label as the number of pounds of "acid equivalent" in each gallon of concentrate.

Usually the strongest concentrates are the most economical to use; they usually cost less per pound of acid equivalent than weaker concentrates. For example, 1 gallon of a 2,4-D concentrate containing 4 pounds of acid equivalent per gallon usually will cost less than 4 gallons of concentrate containing 1 pound of acid equivalent per gallon, and it contains the same amount of active ingredient.

APPLICATION

General Principles

If herbicides are applied carefully they can save you money and labor. If they are applied carelessly, they can kill your crops.

Some crops and ornamental plants are extremely sensitive to phenoxy herbicides; they are severely injured or killed by small traces of the herbicides, such as spray drift or vapors.

The most sensitive of the crops and ornamental plants include cotton, grapes, tomatoes, cucumbers, tobacco, mimosa, roses, and dogwood. For more information about sensitivity of your crops to phenoxy herbicides, ask your county agricultural agent.

When using phenoxy herbicides near sensitive plants, observe all precautions regarding vapors, spray drift, and cleanliness of equipment.

For safe and effective control of weeds—

• Get professional advice before applying herbicides; ask your county agricultural agent, your State extension weed specialist, or other local agricultural authorities for weed-control recommendations.

• Use herbicides wisely: Follow label precautions. Do not apply herbicides for any use for which they are not registered.

• Avoid spraying on windy days.

Types of Phenoxy Herbicides Commonly Available

SALTS, such as:

Amine (triethanolamine, diethanolamine, trimethylamine, diethylamine, and isopropanolamine. Sodium

Potassium

Ammonium

ESTERS

High-Volatile, such as:

Methyl Ethyl Isopropyl Butyl Amyl

Low-Volatile, such as:

Butoxyethanol Butoxyethoxypropanol Ethoxyethoxypropanol Isooctyl Propylene glycol butyl ether Do not apply ester formulations when the temperature is above 90°.
Check output of your sprayer frequently to prevent over application of herbicides.

• Avoid sprayer skips or overlapping swaths.

• Clean spray equipment immediately after use.

• Before using spray equipment for applying insecticides or fungicides to crops, test it for injurious traces of herbicides.

Methods

Cropland

You can apply herbicides on cropland as preemergence sprays (after the crop is planted but before it or the weeds come up) or as postemergence sprays (after the crop and weeds come up).

Most modern spray equipment is designed for low-volume application—from about 5 to about 20 gallons of spray per acre. With the



RN-13680-X

Cotton is extremely susceptible to phenoxy herbicides. This plant was killed when it was accidentally sprayed with 2,4-D.

proper attachments, low-volume equipment can be used for broadcast spraying, band treatments, or directed spraying.

Apply a broadcast spray if the crop plants are not sensitive to the herbicide.

For broadcast application, the spray rig is equipped with a multiple-nozzle boom or a single boomless nozzle.

Apply a directed spray if the crop plants are somewhat sensitive to the herbicide.

For directed application, the rig is equipped with a boom and drop nozzles, which are adjusted to spray the weeds but no more than the bases of the crop plants.

Airplanes often are used for spraying nonrow crops, such as small grains and rice.

Noncropland

Use a ground sprayer with boom to apply low-volume broadcast spray for the control of weeds, brush, and trees on grazing land and along irrigation canals.

Airplanes often are used for applying low-volume broadcast sprays to noncropland areas that are too large, too rough, or have too many obstructions for ground equipment.

Apply high-volume directed spray to kill brush and trees along roads, utility lines, and fencerows, and aquatic weeds and brush along irrigation and drainage canals.

Equipment for high-volume spraying usually has a largecapacity spray tank (over 100 gallons per acre of spray may be used) and operates at relatively high pressure (about 60 to 100 pounds per square inch). The rig usually is equipped with a spray hose and adjustable nozzle. The spray often is applied as a drench that thoroughly wets the leaves and stems of the plants that are to be killed.

Apply sprays of ester formulations in diesel oil or kerosene to the bark at the base of small trees or to cuts in the bark at the base of large trees.

Phenoxy ester formulations with oil as a carrier can be absorbed by the bark at the base of trees with trunk diameters up to about 4

Spray Drift

Wind-carried droplets of phenoxy herbicides may kill susceptible crops near the area that is being treated.

To reduce the danger of damaging crops with spray drift---

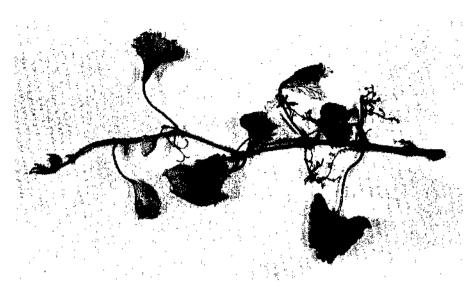
• Use nozzles that apply a coarse spray.

• Use low pressures—no more than 35 pounds per square inch for boom sprayers, 100 pounds for spray guns.

• Avoid spraying on windy days; do not spray with ground equipment or from airplanes when the wind velocity is sufficient to cause drift to sensitive crops.

• Spray when wind is blowing away from susceptible crops and toward the area being sprayed.

• Where special drift hazards exist, use one of the special drift-control agents or formulations in properly designed and adjusted equipment. Get professional advice before using these.



8 N-13679-X

Spray drift from a nearby application of phenoxy herbicide severely injured this Concord grape vine.

inches. The spray usually is applied with a small hand-operated sprayer and the lower 6 to 12 inches of bark on the trunk is thoroughly wetted with the solution.

The bark of many trees that are over 4 inches in diameter is too thick for the spray to penetrate. To kill these larger trees, it is necessary to ring the base of the tree with ax cuts and spray the ester solution into the cuts. The ax cuts must go through the bark and into the sapwood.

TESTING OUTPUT OF SPRAYER

Before mixing or applying herbicides on cropland, check the output of your spray equipment. If you apply too little herbicide, it is ineffective. If you apply too much, it may kill your crops. In the test, the tractor speed and the pump pressure should be the same as they will be when you apply herbicide. If your tractor is not equipped with a speedometer, it is a good idea to make the test on the same type of terrain that you plan to spray and to mark the throttle setting that you use.

To test the output--

• Fill the spray tank with water.

• Spray a strip exactly 220 yards long.

• At the end of 220 yards, stop spraying and measure, in quarts, the amount of water needed to refill the spray tank.

To determine the spray output in gallons per acre, multiply the number of quarts by 16.5 and divide the answer by the width, in feet, of the spray strip.

Example: Your spray rig treats a strip 20 feet wide. At operating



BN-13681-X

The equipment used to apply insecticide to this tobacco plant had been used previously for applying phenoxy herbicide. The tobacco was injured by herbicide traces that remained in the sprayer.

speed and pressure, the rig uses 6 quarts of water in 220 yards:

 $6 \times 16.5 = 99.$

99÷20=4.95, or about 5 gallons of spray per acre.

The output of the sprayer is for the area treated. If your sprayer is adjusted to apply spray in bands to row crops, calculate the total width of the spray pattern. To do this, multiply the number of nozzles by the width that each nozzle treats.

If you are using 6 drop nozzles and each treats a 20-inch width, then the total width of the spray pattern is 10 feet, regardless of the nozzle spacing.

Output of the spray equipment may change because of enlarged nozzle orifices or worn parts in the pump. Check the output periodically to prevent application at the wrong rate.

After you know the output of your sprayer, you can mix the spray accurately. To calculate the total amount of spray needed, multiply the area to be sprayed, in acres, by the output per acre. Add the recommended amount of acid equivalent—in the form of herbicide concentrate—to enough carrier (water or oil) to equal the total amount of spray needed.

For example: The calculated output is 5 gallons per acre and you plan to spray 10 acres at a recommended rate of 1 pound of acid equivalent per acre. Therefore you will need a total of 50 gallons of spray containing 10 pounds of acid equivalent.

The herbicide concentrate contains 4 pounds of acid equivalent per gallon. Add $2\frac{1}{2}$ gallons of concentrate (10 pounds total acid equivalent) to $47\frac{1}{2}$ gallons of water.

CLEANING SPRAY EQUIPMENT

Clean your spray equipment immediately after using it for applying herbicides.

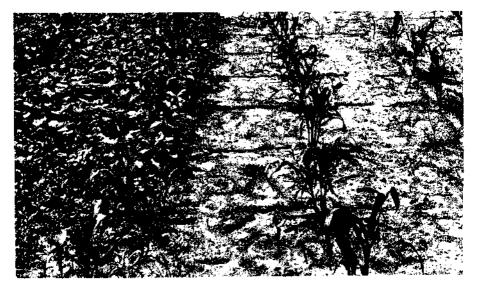
Some crops can be damaged or killed by traces of phenoxy herbi-

cides that are left in the sprayer after cleaning. Before applying fungicides or insecticides to crops with equipment that has been used for herbicides, test the equipment for herbicide traces.

Fill the tank with water and spray a few of the crop plants. Sensitive plants such as tomato, cotton, and tobacco are good test plants. Wait a day or two after spraying. If the crop plants show no distorted growth after this period, the equipment can be used safely for spraying the crop. If the plants are distorted, then clean the spray equipment again. Retest the equipment for cleanliness before using it on crops.

For greatest safety with sensitive crops, apply fungicides or insecticides with equipment that has not been used for applying herbicides.

You can clean spray equipment quickly with a suspension of acti-



BN-11740-X

The right half of this field was sprayed with 2,4-D before the corn or weeds emerged. The left half of the field was not treated.

PRECAUTIONS

Phenoxy herbicides are safe when stored, handled, mixed, and used in accordance with label instructions and sound agricultural practices. Most herbicides are low in toxicity. However, some can cause injury to man, many domestic animals, and fish and wildlife if improperly used.

Most herbicides are toxic to many crop plants and ornamentals. Many are volatile and their vapors and spray drift will cause damage to desirable plants. Avoid spraying when windy conditions exist.

Keep herbicides away from children, livestock, and pets. Store herbicides in closed, well-labeled containers in a dry place where they cannot contaminate food, feed, or water.

When handling herbicides wear clean, dry clothing. Launder clothing after each spraying operation before wearing again.

Do not inhale herbicides and avoid contact with spray mist and drift. Avoid repeated or prolonged contact of herbicide with your skin. Avoid spilling it on any part of your body—especially your eyes, nose, and mouth. If you spill it on your body, wash it off with soap and water and remove contaminated clothing.

To protect fish, wildlife, and livestock, do not clean spraying equipment or dump excess spray material near lakes, streams, or ponds.

Empty herbicide containers may be hazardous. Dispose of them in accordance with label instructions and the recommendations of your State Extension weed science specialist or other local agricultural authorities. Do not burn herbicide containers.

vated charcoal in water. Use at least one-third of a tank of water. For each 10 gallons of water add ¼ pound of activated charcoal and ¼ to ¼ pound of laundry detergent. Agitate this mixture vigorously to distribute the charcoal through the water.

Wash the equipment for 2 minutes by swirling the liquid around in the tank so that it reaches all parts of the tank. Pump some of the liquid through the hose and nozzles. Then drain the tank and rinse the equipment with clean water.

SUSCEPTIBILITY CHART

The chart that follows lists the effects of phenoxy herbicides when

applied as foliage sprays on a number of common weeds. Normal rate of application for 2,4-D, 2,4,5-T,¹ MCPA, or silvex is 1 pound per, acre; normal rate of application for 2,4-DB is 2 pounds per acre.

The control ratings for the herbicides are interpreted as follows:

- Excellent.—One application at normal rate kills the weed.
- Good.—Several applications at normal rate needed to kill the weed.
- Fair.—Repeated applications at normal rate or application at higher rates needed to kill the weed.
- Poor.—Weed kill is erratic, even at high rates of application.

¹Sec limitation on use of 2,4,5-T on page 2.

Plant name	Type of plant Woody	2, 4-D	мсра	2,4,5-T ²	0.1	
der (Alnus spn.)	Woody			2,7,0-1-	Silvex	2,4-DB
		Good	Good	Excellent	Excellent	
lligatorweed (Alternanthera philoxeroides)	Perennial	Poor	None	Fair	Fair	
lyssum, hoary (Berteroa incana)	Perennial ³	Fair	Fair	Excellent		Poor.
maranth:						
Green (Amaranthus hybridus)	Annual	Excellent	Excellent	do		Excellent
Palmer (A. palmeri)	do	do	do	do	Excellent	
See also Pigweed.						
rrowgrass, seaside (Triglochin maritima)	Perennial.	Fair		Fair		
rrowhead:						
Annual (Sagittaria calycina)	Annual	Excellent		Excellent	Excellent	Do.
Perennial (Š. longiloba)	Perennial	Fair		Poor		
sh (Fraxinus spp.)	Woody	None	None	do	Poor	None.
ster:	_				(i	
Many-flowered (Aster ericoides)	Perennial	Good				
Western (A. occidentalis)	do	Poor		Poor		Do.
White heath (A. pilosus)	do	Fair		Fair	Fair	Do.
Woody (Xulorrhiza parrui)	do	Poor	None			
accharis, coyote brush (Baccharis salicina)	Woody	Excellent				
aileya, desert (Baileya multiradiata)	Perennial	Good		Good		
assia, five-hook (Bassia hyssopifolia)	Annual	Fair				
ornflower:						
	do	Excellent				
edstraw:		. .	1.37	n		-
	do		None	Poor		Do,
Smooth (G. mollugo)	Perennial	None	do	do	do	Do,
eeplant, Rocky Mountain (Cleome serrulata)_	Annual	Fair				
	do		Excellent			
orida betony (Stachys floridana)	Perennial	Poor		Poor		
indweed:	d a	Data	Pata	P. /	T 3. 4	To de
Field (Convolvulus arvensis)	do	Fair		Fair	Fair	Fair.
Hedge (C. sepium) iscuitroot (Lomatium leptocarpum)		Good	Good			
scuttroot (Lomalium leptocarpum)	do	Fair		do		N7
stort, American (Polygonum bistortoides) lackberry (Rubus spp.)	Woody	None	Nono	Fair	Fair	None.

Susceptibility of common weeds to control by 2,4-D, MCPA, 2,4,5-T, silvex, and 2,4-DB

Blackeyed susan (Rudbeckia serotina)		Good		do	Excellent	
Bloodweed (Ambrosia aptera)	Annual	Excellent		Excellent		
Blueweed, Texas (Helianthus ciliaris)	Perennial	Fair				
Bouncingbet (Saponaria officinalis)	do	Poor	None	Poor	Poor	Do.
Boxelder (Acer negundo)	Woody	Good		Good	Good.	
Bracken (Pteridium aquilinum)	Perennial	None	None	None	None	Do.
Broomweed, common (Gutierrezia dracuncu-	Annual	Good		Good	Good.	
loides).						
Broom, Scotch (Cytisus scoparius)	Woody	do		do	1	
Buckeye, California (Aesculus californica)	do	Fair		Poor	None	
Buckwheat:				1001	10000	
Tartary (Fagopyrum tataricum)	Annual	Poor	Excellent	Fair		
Wild (F. convolvulus)	dodo	Fair	Fair	Good	Fair	Good.
Buffalobur (Solanum rostratum)	do	None	None	None	I' dd1	Good.
Dunatoour (Solanum rostratum)	Perennial	Fair	Fair	Fair	Fair .	None.
Bulrush (Scirpus spp.)						
Burdock, common (Arctium minus)	Biennial	Excellent	Excellent	Excellent	Excellent	Excellent.
Bur-head (Echinodorus cordifolius)	Annual	do	do	do	do	
Buckbrush (Symphoricarpos orbiculatus)	Woody	Good		Fair	None	
Western (S. occidentalis)	do	Fair	None			
Bullnettle (Cnidoscolus stimulosus)	Perennial	Good	Fair	Good		
Burroweed (Haplopappus tenuisectus)	do	do		Excellent		
Buttercup:						
Celery leaf (Ranunculus sceleratus)	Annual	Fair				
Corn (R. arvensis)	do	Good	Excellent	Excellent	Excellent	Excellent.
Creeping (R, repens)	Perennial	do	do	do	do	Good.
Tall (R. acris)	do	do	do	do	do	Excellent.
Campion, bladder (Silene cucubalus)	do	None	None	None	None	Nоце.
Carpetweed (Mollugo verticillata)	Annual	Excellent		do	doi	Excellent.
Carrot, wild (Daucus carota)		Fair	Fair	Fair	Fair.	Fair.
Catchfly, night flowering (Silene noctiflora)	Annual	None	None	None	None	None.
Catsear, spotted (Hypochoeris radicata)	Perennial	Good	Excellent	Excellent	Excellent	Excellent.
Catnip (Nepeta cataria)	do	do		do		1. HOOMON W
Cattail:						
Broadleaf (Typha latifolia)	do	Fair	Poor	Fair	Fair	Poor.
Narrowleaf (T. angustifolia)	do	do	do	do	do	Do.
Ceanothus (Ceanothus spp.)	Woody	do	Fair	Good		Fair.
Wedneless (Community)	do	Cood	do	Excellent.		ган.
Wedgeleaf (C. cuneatus)	uv	Fair	Poor	Fair	Poor	Poor.
Chamise (Adenostoma fasciculatum)	uo	rair	roor	rair	roor	POOR.
Chickweed:	1		ا مد ا	A 3	D 111	D - <i>t</i> -
Common (Stellaria media)	Annual		do	Good	Excellent	Fair.
Field (Cerastium arvense)	rerenniai	do	do	do	do	Poor.
Mouseear (C. vulgatum)	do	do	do	do	do	Do.
See footnotes at end of table.						

See footnotes at end of table.

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Plant name	Type of plant	Control ¹				
		2, 4- D	мсра	2,4,5-T ²	Silvex	2, 4 -DB
Chicory (Cichorium intybus) Chockcherry (Prunus virginiana)	Perennial Woody	Good Poor	Good	Good Fair	Good Fair	– Fair. None.
Cinquefoil: Blueleaf (Potentilla diversifolia) Common (P. canadensis)	Perennial	Fair Good	Fair	do	Fair	Do.
Rough (P. norvegica) Sulfur (P. recta)	Annual ⁸ Perennial	Excellent Good	Fair	Good	Fair	
Corn (Agrostemma githago) White (Lychnis alba)	Annual ³ Perennial	Poor do Excellent	Poor None Fair	None do Excellent	None	None. Do.
Cocklebur, common (Xanthium pensylvani- cum). Coffeeweed (Daubentonia texana)	Annual Woody	do	Fair	do	Good	Good.
Coyote brush (Baccharis pilularis) Coyotillo (Karwinskia humboldtiana) Cranebill, cutleaf (Geranium dissectum)	Perennial	Good	Excellent	Fair Excellent	Excellent	
Cress, hoary (Cardaria draba) Croton:	Perennial	Fair	Fair	Fair	Fair	Fair.
Lindheimer (Croton lindheimeri) Texas (C. texensis) Wolly (C. capitatus)	Annual do	Excellent do	Excellent	Good Excellent	Good	Good. Excellent.
Burcucumber (Sicyos angulatus)	Annual	Fair None	Excellent			
Daisy, oxeye (Chrysanthemum leucanthemum) Dandelion (Taraxacum officinale) Deadnettle, red (Lamium purpureum)	Perennial dodo Annual ³	Fair Excellent Poor	Fair Excellent Poor	Good Excellent	Fair Excellent	None. Good. Poor.
Deathcamas (Zigadenus gramineus) Foothill (Z. paniculatus)	Perennial dodo	Fair Good		Poor Fair	· · · · · · · · · · · · · · · · · · ·	1 001.
Deerweed (Lotus scoparius) Devil's claw (Proboscidea louisianica)	Woody Annual	Excellent		Excellent		

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Dock:	1	1	1	1		I
Broadleaf (Rumex obtusifolius)	Perennial	Good	Fair	Good	Good	Fair.
Curly (R. crispus)	do	do		do	Poor	Fair.
Fiddle (R. pulcher)	do	Excellent	[
Pale (R. altissimus)			Good	Good	Good	Poor.
Veiny (R. venosus)	do	Fair				1,001.
Dodder:)				
Largeseed (Cuscuta indecora)	Annual	Poor	None	None	None	None.
Smallseed alfalfa (C. pentagona)	do]do	ldo	dodo	do	Do.
Duckweed, common (Lemna minor)	do	do		do	None	
Elm (Ulmus spp.)	Woody	{do	None	Fair		Do.
Eveningprimrose, common (Oenothera biennis).	Biennial	Excellent		Good		
Falseflax, smallseeded (Camelina microcarpa)	Annual	do				
Fennel, dog (Eupatorium capillifolium)	do	Good		Excellent	Excellent	Do.
Fiddleneck, coast (Amsinckia intermedia)	do	do	Fair	Good	do	Do.
Filaree, redstem (Èrodium cicutarium)	Annual ³	Good				Poor.
Fireweed (Epilobium angustifolium)	Perennial	do			Excellent	
Fleabane:			1			
Annual (Erigeron annuus)	Annual	Fair	Fair	[do	do	Excellent.
Oregon (E. speciosus)	Perennial	do				
Rough (E. strigosus)	Annual ⁸	Good		Excellent	Excellent	
Flixweed (Descurainia sophia)	do	Excellent	Fair			Good.
Franseria:						
Bur (Franseria discolor)	Perennial	Fair				
Woollyleaf (F. tomentosa)	do	do	Poor	Poor	Poor	Poor.
Galinsoga, hairy (Galinsoga ciliata)	Annual	Good	Excellent	Excellent	Excellent	
Garlic, wild (Allium vineale)	Perennial	Fair	Poor	Poor	None	Do.
Geranium, Carolina (Geranium carolinianum)	Annual ³	Good	Excellent			Excellent.
Goatsrue (Galega offinalis)	Perennial	Fair				
Goldenrod (Solidago spp.)	do	do				
Gooseberry, sierra (Ribes roezli)	Woody	Excellent		Good		
Goosefoot:						
Jerusalem-oak (Chenopodium botrys)	Annual	Fair				
Nettleleaf (C. murale)	do	Excellent		Excellent		Do.
Oakleaf (C. glaucum)	do	do	do	do	Fair	Do.
Gooseweed (Sphenoclea zeylanica)	do	Fair	Poor	Fair	Poor	None.
Gourd, buffalo (Cucurbita foetidissia)	Perennial	Poor				
Goutweed, Bishops (Aegopodium podagraria)	do	None		1		
Grapehyacinth (Muscari botryoides)	do		Poor			
Greenbrier (Smilax bona-nox)	Woody	None	None	Poor	Poor	
Common (S. rotundifolia)	do	do		do	do	
Gromwell (Lithospermum officinale)	Perennial	do	I			
See footnotes at end of table.						

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		Control ¹					
Plant name	Type of plant	2, 4- D	МСРА	2,4,5-T ²	Silvex	2,4-DB	
Groundcherry:			·				
Clammy (Physalis heterophylla)	Woody	None		Fair	Fair	None	
Purple flower (P. lobata)	do	do]				
Smooth (P. subglabrata)	do	do	None	Poor	Poor	Do.	
Wrights (P. wrightii)	Annual	Excellent		Excellent	Excellent		
Ground-ivy (Glechoma hederacea)	Perennial	Fair	Poor	Fair	Good.		
Groundsel:	_	_					
Arrowleaf (Senecio triangularis)	do	<u>_</u> do		do		Do.	
Common (S. vulgaris)	Annual	Poor	Poor	None	None	Do.	
Cressleaf (S. glabellus)	do	Excellent	Excellent	Excellent	Good	Good.	
Riddell (S. riddellii)	Perennial	do					
Threadleaf (S. longilobus)	do	Fair					
Gum:							
Sweet (Liquidambar styraciflua)	Woody			Good	Fair		
Tupelo or black (Nyssa sylvatica)	do			Fair	do		
Gumweed (Grindelia squarrosa)	Perennial	Excellent					
Halogeton (Halogeton glomeratus)	Annual	Fair	Poor	Poor	Poor	None.	
Hawksbeard, smooth (Crepis capillaris)	Annual 3	Poor	do	None	None.	Poor.	
Hawkweed:							
Orange (Hieracium aurantiacum)	Perennial	Fair	do	Poor			
Yellow (H. pratense)	do	do	do	do			
Hawthorn (Crataegus spp.)	Woody	None	None	Fair	Poor	None.	
Healall (Prunella vulgaris)	Perennial	Good	do	Poor	do	Do.	
Hellebore, false western (Veratrum californicum)	do	do	_				
Hemlock, poison (Conium maculatum)	Biennial	do	Excellent	Fair	Excellent	Excellent.	
Hemp (Cannabis sativa)	Annual	do		Good		Good.	
Hempnettle (Galeopsis tetrahit)	do	Poor	Fair				
Henbit (Lamium amplexicaule)	do	do	Poor	Fair	Good.	Poor.	
Hickory (Carua spp.)	Woody	do	Fair	do	Fair	None.	
Hogpeanut (Amphicarpa bracteata)	Perennial	Excellent					
Hognotsta (Hoffmanseagia densiflora)	do	None	None	None	None	Do.	
Honey locust (Gleditsia triacanthos)	Woody	Poor.		Fair			
Honevsuckle (Lonicera japonica)	do	Fair	Excellent	Good	Good.		
Horsebrush, littleleaf (Tetradymia glabrata)	do	Poor		Poor			

Susceptibility of common weeds to control by 2,4-D, MCPA, 2,4,5-T, silver, and 2,4-DB-Continued

Horsenettle, Carolina (Solanum carolinense)	Perennial	do	None		1	Poor.
Horsetail, field (Equisetum arvense)	do	do	Fair	Poor	Poor	
Horseweed, marestail (Erigeron canadensis)	Annual	Fair	do	Good	Good	Fair.
Houndstongue (Cynoglossum officinale)	Biennial	do				
Indian-hemp (Apocynum cannabinum)	Perennial	Poor	None	None		
Indian-tobacco (Lobelia inflata)	Annual					
Iris, Rocky Mountain (Iris missouriensis)		do		Poor		
Ironweed, Western (Vernonia baldwini)	do	Good		Good	None	Poor.
Ivy, English (Hedera helix)	do			Excellent		1 0011
Jerusalem-artichoke (Helianthus tuberosus)	do	Good		do		
Jewelweed (Impatiens pallida)	Annual	Excellent				
Jimmyweed (Haplopappus pluriflorus)	Perennial	Fair		Fair		
Jimsonweed (Datura stramonium)	Annual		Excellent	Good		Excellent.
Jointvetch, Northern (Aeschynomene vir-	do	Fair	Fair	Excellent	Fair	None.
ginica).		1 cm		LACCHENU	1 an	rone.
Juniper:			í			
Alligator (Juniperus deppeana)	Woody	None	 	None	None	Do.
One-seed (J. monosperma)		do		do	do	Do.
Utah (J. osteosperma)	do	Poor		Poor	do	Do. Do.
Knapweed:		1001		1 001	uo	D0.
Brown (Centaurea jacea)	Perennial	Fair				
Diffuse (C. diffusa)		Excellent	None	Poor	Poor	Do.
Russian (C. repens)	Perennial	Poor	Poor	do	do	Do.
Spotted (C, maculosa)		Fair	Excellent			D0.
Squarrose (C. virgata var. squarrosa)		do	JEACEHEHE		G000	
Knawel (Scleranthus annuus)		None	None			
Kochia (Kochia scoparia)	dodo	Excellent	Good	Excellent	Excellent	Excellent.
Knotweed:		DYCCHCH("	0000	Excenent	Excenent	Excenent.
Japanese (Polygonum Cuspidatum)	Perennial	Poor		Poor	do	
Prostrate (P. aviculare)		Fair	Poor	Fair		Poor.
Sakhalin (P. sachalinense)		Good	roor	rag	[Fair	roor.
Silversheeth (D. snawreeleen)	Annual	Fair				
Silversheath (P. argyrocoleon)	Perennial	do	Fair	Fair	Fair	
Kudzu (Pueraria lobata) Lambsquarters, common (Chenopodium album)	Annual	Excellent		Excellent	Excellent	Excellent.
	Amua	Басецент	Excenent	Excement	Excellent	Excenent.
Larkspür:	Perennial	None		NT		N
Little (Delphinium bicolor)				None Fair	None	None.
Menzies (D. menziesii)		Fair			None	
Tall (D. barbeyii)	do	None		None		
Duncecap (D. occidentale)	ao	ϥ	None	Fair	Fair	
Lettuce:	da	Fair	17	_ ۱	Det.	17 - <u>1</u>
Blue (Lactuca pulchella)	ao	Excellent		do	Fair	Fair.
Wild (L. scariola)	Autoat	Excenent	[!		
See footnotes at end of table.					,	24

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Susceptibility of common weeds to control by 2,4-D, MCPA, 2,4,5-T, silver, and 2,4-DB-Continued

Plant name	Type of plant	Control 1				
		2,4-D	МСРА	2,4,5-T ²	Sílvex	2,4-DB
Loco, bigbend (Astragalus earlei)	Annual [®]	Excellent				
Locoweed, white (Oxytropis lambertii)	Perennial	Fair		Fair	Fair	
Locust, black (Robinia pseudo-acacia)	Woody	do		Good	Good	
London-rocket, annual (Sisymbrium irio)	Annual	Excellent	Excellent.	Excellent	Excellent	Excellent.
London-rocket, perennial (Franseria conferti-	Perennial	None	None	None	None	None.
flora).						1101101
Lupine (Lupinus rivularis)	Woody	Excellent		Excellent		
Silvery (L. argenteus)	Perennial	Fair.	None	do	Excellent	Excellent.
Tailcup (L. caudatus)	do	Good				
Madrone (Arbutus menziesii)	Woody	Fair		Fair		
Mallow:				1		
Common (Malva neglecta)	Annual ³	Poor	None	Poor	Poor	
Dwarf (M. rolundiflora)	Perennial	Fair	1			
Little (M. parviflora)	Annual	do	None			
Venice (Hibiscus trionum)	do	Good	Excellent	Excellent		
Manzanita (Arctostaphylos spp.)	Woody	do	Poor	Fair.	Fair	Poor.
Maples (Acer spp.)	do	Poor	None	do.	Good	None.
Marshelder (Iva xanthifolia)	Annual	Excellent	Good	Good	Excellent	Excellent.
Mayweed, dogfennel (Anthemis cotula)	do	Fair	Poor	Fair.	Poor	None.
Medic, Black (Medicago lupulina)	do	do	Fair	do	Good	Poor.
Mesquite:						
Honey (Prosopis juliflora var. glandulosa)_	Woody	Poor	- -	ldo	Fair	Fair.
Velvet (P. juliflora var. velutina)	do	None	None	Good	do	None.
Mexicantea (Chenopodium ambrosioides)	Annual	Excellent	Excellent	Excellent	Good	Excellent.
Mexican weed (Caperonia castaneaefolia)	do	Fair	Fair	Good	do	None.
Milkweed (Asclepias curassavica)	Perennial	Good		Excellent		Do.
Broadleaf (Å. latifolia)	do	Fair	İ		Fair	• -
Common (A. syriaca)	do	None	None	Poor	do	Do.
Showy (A. speciosa)	do	do	do	do	Good	Do.
Eastern whorled (A. verticillata)	do	do	do	do		Do.
Mimosa, catclaw (Mimosa biuncifera)	Woody	!		do		Poor.
Moneywort (Lysimachia nummularia)		Excellent		 .		

Morningglory:	I	ļ	1	1	1 1	
Common (Ipomoea purpurea)	Annual	do		Excellent		Excellent.
Ivyleaf (I. hederacea)	do	do		do		Do.
Woolly (I. hirsutula)	do	do	Excellent	do	Excellent	
Mountain Mahogany (Cercocarpus montanus)_	Woody			Poor		Poor.
Mudplantain (Heteranthera limosa)	Annual.	Excellent	Good	Good	Good	Fair.
Mugwort (Artemisia vulgaris)		Poor	None	None		
Mulberry (Morus spp.)	Woody	None		Poor	Fair	
Mulesears (Wyethia amplexicaulis)	Perennial	Good		Good		
Mullein:						
Common (Verbascum thapsus)	Biennial	Poor	Poor			None.
Moth (V. blattaria)	Perennial	Fair		do		
Mustard:						
Black (Brassica nigra)	Annual	Excellent	Excellent			Excellent.
Blue (Chorispora tenella)	do	Fair	Poor	Good	do	None.
Haresear (Conringia orientalis)	do	Excellent	Good			
Hedge (Sisymbrium officinale)	do	do	Excellent	Excellent	Excellent	Excellent.
Indian (Brassica juncea)	do	do	do	do	Good	Do.
Tumble (Sisymbrium altissimum)	do	do	Good	do		Do.
Wild (Brassica kaber)	do	do	Excellent	do	Good	Do.
Hadesean (Sisymbrium officinale) Indian (Brassica juncea) Tumble (Sisymbrium altissimum) Wild (Brassica kaber) Wormseed (Erysimum cheiranthoides)	Annual ³	do	do	do		Do.
Nettle:						
Stinging (Urtica dioica)	Perennial	Good				
Tall (U. procera)	Annual	do				
Niggerhead (Rudbeckia occidentalis)	Perennial	do				
Nightshade:		J		l		
Black (Solanum nígrum)	Annual	Fair	Fair	Fair	Good	Fair.
Cutleaf (S. triflorum) Silverleaf (S. elaeagnifolium)	do	do				
Silverleaf (S. elaeagnijolium)	Perennial	Poor.		Poor	Poor	
Norcal bean (Sophora secundiflora)	do			Excellent	Excellent	
Nutsedge:	. T.	Deer	Maria	NT	Num	NT
Purple (Cyperus rotundus)	ao	roor	None	None		None.
Oak:		ao	ao	do	do	Do.
Black (Quercus velutina)	Woody	de		Fain		
Blackjack (Quercus verunna)	do do	uo	Nono	rair	Fair	Do.
Blue (Q. douglassi)	do	do	Poor		do	Poor.
Gambel (Q. gambelii)	do	u0+				1001,
Interior live (Q. wislizenii)	do	Poor	Poor	Poor	Роог	Do.
Post (D stallata)	do	Fair	None	Good		None.
Post (Q. stellata) Serub (Q. dumosa)	do	Poor	Poor	Fair	Fair	Poor.
Shinnery (Q. havardi)	do	Fair	A 001	Excellent		1001.
See footnotes at end of table		• • • • • • • • • • • • • • • • • • • •		L'ACCHENU	- Execuence	

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See footnotes at end of table.

61

Plant name	Type of plant	Control 1					
		2, 4- D	МСРА	2,4,5-T ²	Silvex	2,4-DB	
Dak—Continued							
Turbinella (Q. turbinella)	Woody			Poor		Poor.	
White (Q. alba)	do	Fair	None	Good	Fair	None.	
Dinion, wild (Allium canadense)		do		Poor			
)rache (Atriplex hastata)	Annual	Good		Excellent			
Sage-orange (Maclura pomifera)	Woody	Poor		Good.	Fair		
Parsley, desert (Lomatium grayi)	Perennial		Excellent		Excellent	Excellent.	
Parsnip, wild (Pastinaca sativa)	Biennial	do		Excellent	Lincononiv	Datement	
Partridgepea (Cassia fasciculata)	Annual	do	Excellent	do	Excellent		
assignition (Cassia Jascianata)	Perennial		Lonconche	uv	L'AQCHOIQUE .		
Peavine (Astragalus emoryanus)	Annual			Good			
Pellitoryweed (Parietaria floridana)	do	None	None	Excellent		None.	
ennycress, field (Thlaspi arvense)	do			do	Good	Good.	
Pennywort, lawn (Hydrocotyle sibthorpioides)	Perennial		- DAGGHOUTT	dodo	Excellent	0000.	
Penstemon, Rydberg (Penstemon rydbergii)	do	Fair		Poor	BACCHEIU	None.	
ensteinion, Rydberg (1 ensteinion 7 gabergro)		L'out		*********		HOLE.	
Field (Lepidium campestre)	Annual	Excellent	Excellent	Good	Fair	Excellent	
Perennial (L. latifolium)	Perennial		Inveneuv	Fair	Fan		
Virginia (L. virginicum)			Excellent	1 au		Do.	
Virginia (L. virginicum)	Annusi	do	do	Excellent	Excellent	D0.	
Yellowflower (L. perfoliatum)	Woody	Dape		Poor	Fair.		
Persimmon (Diospyros virginiana)	do do	Excellent		F 001	Excellent		
Texas (D. texana)	_ uo	Excellent			Excenent		
Pigweed: Prostrate (Amaranthus graecizans)	Annual	da	Eweellant	Excellent		Do.	
Prostrate (Amarantaus graecizans)	do		do	do			
Rough (A. retroflexus)		4.	do	do	Excellent	Do.	
Tumble (A. albus) ineappleweed (Matricaria matricarioides)	do	Eain	Poor		Poor	Do.	
ineappleweed (<i>Mairicaria mairicarioiaes</i>)		raur	[roor) None	roor	None.	
lantain:	Bonomial	Frachlant	Franllant	Excellent	Good	Excellent	
Blackseed (Plantago rugelii)	Tetenmar	Acehent	A.	do	Excellent		
Broadleaf (P. major)			Cood	uo	Excement	Do.	
Buckhorn (P. lanceolata) oison-ivy (Rhus radicans)	qo		GOOQ	ao	do	Do.	
OISON-IVV [Khuk Taalaank]	woody	ган	I I 8II	do	0D	None.	

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Susceptibility of common weeds to control by 2,4-D, MCPA, 2,4,5-T, silver, and 2,4-DB-Continued

\mathbf{D}_{i} = \mathbf{A}_{i} (\mathbf{D}_{i} (\mathbf{A}_{i}) = \mathbf{A}_{i} (\mathbf{D}_{i})	(. J.	10.4			
Pokeweed (Phytolacca americana)	Perenmai	do	Fair			
Pondweed (Potamogeton spp.)	GO		None	Poor	Poor	
Ponyfoot (Dichondra repens)	ao	Excellent				
Poorjoe (Diodia teres)	Annual	Good	Fair		Fair	Fair.
Poppy, Roemer (Roemeria refracta)	do	Excellent		- <u>-</u>		
Prickly-ash, Northern (Xanthoxylum ameri-	Woody	Poor		Fair		
_ canum).)	•			
Pricklypear (Opuntia spp.)	Perennial		[do		
Prickly poppy (Argemone intermedia)		Excellent	- <u>-</u>			
Pursiane, common (Portulaca oleracea)	do	Fair	Fair	Excellent	Good	Good.
Puncturevine (Tribulus terrestris)	do	Good	do	[Fair	Do.
Pusley, Florida (Richardia scabra)	do	Excellent				
Queensdelight (Stillingia sylvatica)	Perennial	None				
Rabbitbrush:						
Gray (Chrysothamnus nauseosus)	Woody	Fair	Poor	Poor	Poor	
Yellow (C, viscidiflorus)	do	do]do		do	
Radish, wild (Raphanus raphanistrum)	Annual.	Excellent	Excellent	Excellent	Excellent	Excellent.
Ragweed:						
Common (Ambrosia artemisiifolia)	do	do	dodo	do	do	Do.
Giant (A. trifida)		do	do	do	do	Do.
Western (A. psilostachya)	Perennial	Good	1	do	do	Do.
Ragwort, tansy (Senecio jacobaea)	Perennial ³	do	Fair	Fair	Fair	Poor.
Rape, Bird (Brassica rapa)	Biennial	Excellent	Excellent.			Excellent.
Raspberry (Rubus spp.)	Woody.	Poor	None	Good		None.
Redbay (Persea borbonia)	do	do			Poor	11000.
Redbud (Cercis occidentalis)	do	do		Poor	1 001	
Redvine (Brunnichia cirrhosa)	Perennial	None	None	do	Poor	Do.
Redstem (Ammannia coccinea)	Annual	Excellent	Excellent	Excellent	Excellent	Good.
Rose:	THINK	DACCHOIC.	DAUGHCHU	DACCHEIIU	EXCENENT.	G000.
California (Rosa californica)	Woody	None		Fair	1	
Cherokee (R. laevigata)				do	Excellent	
Macartney (R. bracteata)	do	do	None	Good	Good	
Multiflora (R. multiflora)	do	Poor	dodo		Fair	
Prairie (R. pratincola)	do	Foir			I 341	
Woods (R. woodsii)	do	None		Fair	None	None.
Rubberweed:		14006		Fall	илопе	none.
	4	FreeDort				
Bitter (Hymenoxys odorata)	Depending	Cond		Fair		
Colorado (H. richardsoni)	r erenman	G000		do		
Rue, African (Peganum harmala)	00			ao	rair	
Sage: Creeping (Salvia sonomensis)	4	Coord	Foi-	Quad	. I	E. i.
Dreeping (Satria sonomensis)	do			G000	ao	Fair.
Purple (S. leucophylla)		00		l		
See footnotes at end of table.						

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Plant name	Type of plant	Control 1					
		2,4-D	мсра	2,4,5-T ²	Silvex	2,4-DB	
Sage—Continued							
White (S. apiana)	Perennial	Good]	.			
Sagebrush:			1	1			
Big (Artemisia tridentata)	Woody	do	Poor	Good	Fair	None.	
California (A. californica)		Excellent.		do			
Sand (A. filifolia)		do	Good	do	Good	Poor.	
Salsify:							
Common (Tragopogon porrifolius)	Biennial	Good					
Meadow (T. pratensis)	do	do				İ	
Saltcedar (Tamarix gallica)	Woody	Poor	None	Fair	Good.	None.	
Sedge, Umbrella (Cyperus difformis)		Fair	Fair	Poor	Poor		
Sesbania, coffeebean (Sesbania exaltata)	do	do	Good	Good	Excellent	Fair.	
Sorrel (Rumex acetosa)	Perennial	Good	Fair	do	Fair	Do.	
Heartwing (R. hastatulus)	do	Excellent					
Red $(R, acetosella)$	_ do	None	None	None	Poor	None.	
Shepherdspurse (Capsella bursa-pastoris)	Annual	Good	Good	Excellent	Good	Good.	
Sicklepod, coffeeweed (Cassia tora)	do	Excellent.	Excellent				
Skunkcabbage (Symplocarpus foetidus)	Perennial	Good		Good	Fair		
Smartweed:						1	
Ladysthumb (Polygonum persicaria)	_ Annual	1do			Good	Do.	
Pennsylvania (P. pensylvanicum)	do	do	do	do	Fair	Do.	
Swamp (P, coccineum)	_ Perennial	Poor					
Snakeroot, white (Eupatorium rugosum)	- do	Fair	_	Fair	Poor		
Snakeweed:				ł			
Broom (Gutierrezia sarothræ)	do	do	Fair	do	doi	Poor.	
Threadleaf (G. microcephala)	_]do	Good		Good	Good	,	
Sneezeweed, bitter (Helenium tenuifolium)	Annual	Excellent	Excellent	. Excellent	Excellent	Good.	
Snow-on-the-mountian (Euphorbia marginata)	_ do	Fair		Good		Fair.	
Sowthistle:	1	Ì				1	
Annual (Sonchus oleraceus)	- do	Excellent	Excellent	Excellent		Excellent	
Perennial (S. arvensis)	Perennial	Fair	Fair	Fair	Fair	Fair.	
Spiny (S. asper)	_ Annual	Excellent	!- <u>-</u>	Excellent		Excellent.	
Spanishneedles (Bidens bipinnata)	_ [[] do	!do	Excellent	do	Excellent	26	

Susceptibility of common weeds to control by 2,4-D, MCPA, 2,4,5-T, silver, and 2,4-DB-Continued

Speedwell:	1	L	1	I	1	
Common (Veronica officinalis)	Perennial	Poor	None	None	Poor	None.
Corn (V. arvensis)		do			do	Do.
Purslane (V. peregrina)	do		do	Fair		
Spikerush (Eleocharis palustris)	Perennial		Fair			Poor.
Spurge:			1			- 0011
Flowering (Euphorbia corollata)	do	Poor		Good		
Leafy (E. esula)	do	do	None	Poor	Fair	None.
Spotted (E. maculata)	Annual	do		do		ITOMO,
Spurry, corn (Spergula arvensis)	do	do	Fair	None		Do.
Squaw-berry (Rhus trilobata)	Woody			Poor		Poor.
Starthistle, yellow (Centaurea solstitialis)	Annual	Fair				None.
Sticktight, European (Lappula echinata)	do	Good				110110.
Strawberry, wild (Fragaria spp.)	Perennial	Poor	None	Poor	Fair	Do.
St. Johnswort (Hypericum perforatum)	do	do			1 001	20.
Spotted (H. punctatum)	ob	Fair		Fair		
Sumpweed, rough (Iva ciliata)	Annual	Excellent		1011		
Sunflower (Helianthus annuus)	do	do	Good	Excellent	Excellent	Excellent.
Sweetclover, annual yellow (Melilotus indica)	do	do		LACOHONVIII	Datentine	Do.
Tanoak (Lithocarpus densiflora)	Woody	Poor		Poor	Poor	Poor.
Tansy (Tanacetum vulgare)	Perennial	Fair	None	Fair		1 001.
Tansymustard (Descurainia pinnata)	Annual	Excellent	10000			
Thistle:		24001040211				
Blessed (Cnicus benedictus)	do	do				
Blue (Echium vulgare)		Fair	Fair	Fair		
Bull (Cirsium vulgare)		Excellent			Excellent	Excellent.
Bristly (C. horridulum)	Perennial ³	Fair		Evenener	Excenenc	BACCHCHC.
Canada (C. arvense)			Fair	Fair	Fair	Fair.
Russian (Salsola kali)					Good	Good.
Tickseed (Coreopsis tinctoria)				Excellent	0000	0000.
Toadflax:				Transchent ***		
Blue (Linaria canadensis)	Perennial	Poor			i i	
Yellow (L. vulgaris)		None	None	None	None	None.
Toyon (Heteromeles arbutifolia)	Woody	Good	Fair.	Fair	Fair	Fair.
Tree-of-heaven (Ailanthus altissima)	do	Fair	None	Excellent	Good	Poor.
Trumpet creeper (Campsis radicans)	do	Poor	do	Fair.	Excellent	None.
Velvet-leaf (Abutilon theophrasti)	Annual	Excellent				Excellent.
Vervain:	Annual	DACOHOUV	0000	0000		DAGGHENG.
Blue (Verbena hastata)	Perennial	do				
Hoary (V. stricta)	do	Good				
Prostrate (V, bracteata)	do	Excellent				
Roadside (V. bonariensis)	do	Good				
See footnotes at end of table	········				·······	

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See footnotes at end of table.

23

Plant name	Type of plant	Control ¹					
		2, 4- D	МСРА	2,4,5-T ²	Sílvex	2,4-DB	
Vetch:							
Narrowleaf (Vicia angustifolia)	Annual	Excellent	Fair	Excellent			
Milk (Astragalus spp.)	Perennial	Good	do	Good	Excellent		
Two grooved (A. bisulcatus)	do	Excellent				-	
Wild (Vicia spp.)	Annual	do	Excellent	Excellent	Excellent	Excellent.	
Violet (Viola spp.)	Perennial	Poor	None		Good		
Walnut, black (Juglans nigra)	Woody	Excellent		Excellent			
Waterhemlock, spotted (Cicula maculata)	Perennial	Good		do			
Water-hyacinth (Eichhornia crassipes)	do	do		do	Excellent	0	
Waterplantain (Alisma triviale)	do	Excellent	Excellent		do	Good.	
Waterweed, Canada (Elodea canadensis)	do	Fair	Good	Good	Good		
Willow (Salix spp.)	Woody	Good	Excellent	Excellent	Excellent	Enablant	
Witchweed (Striga asiatica)	Annual Perennial	Excellent	None	Excenent	do	Excellent.	
Woodsorrel, yellow (Oxalis stricta) Wormwood, annual (Artemisia annua)	Annual	Good	Fair	Good	uo	1	
		Fair	Latter-	Fair]		
Yankeeweed (Eupalorium compositifolium) Yarrow:	rerenmai	rair		ran			
Common (Achillea millefolium)	dodo	Poor	Poor	Poor	Poor	None.	
Western (A. lanulosa)	dodo	Fair		Fair	1001	Do.	
Yellow-rocket (Barbarea vulgaris)	Perennial ³	Good	Good	Good	Fair	Fair.	
Yerba-santa (Eriodictyon californicum)	Woody	Excellent	do	do	do	None.	
Yucca; soapweed (Yucca glauca)	Perennial	None		Poor	do		

Susceptibility of common weeds to control by 2,4-D, MCPA, 2,4,5-T, silver, and 2,4-DB-Continued

¹ For explanation of control ratings, see "Susceptibility Chart," page 11.

² See limitation on use of 2,4,5-T, page 2.

³ Sometimes biennial.

U. S. Navy, PWC, Guam 10: (Name and Jocation of Jaborator	7)			16 Nov 83
U. S. Navy, PWC Fena L				
AMPLE FROM (Location of exepting po	int)			· ·
Well B, Nav Cams				
DLLECTED BY	DATE	HOUR	SOURCE (Designate ground,	aurface, cam, trei
Joan Ornato	13 Apr 83	0945	Ground	
EASON FOR EXAMINATION		EXAMINATION	REQUESTED BY	
Annual Analysis				
NOTE: All results reported in				eture, and speci
conductance. One liter of pota FIELD ANALY		111.	ROUTINE LABORATORY A	NALYSIS
, pH	TEMPERATURE	· ·	(CHECK ONE)	
7.40	•c 27.5	X REQUES	TED	OT REQUESTED
ITEM	PPM	1. COLOR	·	
2. CARBON DIOXIDE (CO2)	110	7 3		
3. DISSOLVED OXYGEN (02)		2. TURBIDITY	1	
4. HYDROGEN SULFIDE (H2S)		0.3	35 NTU	
5. CHLORINE DEMAND (CI2)		3	ALKALINITY (C+CO))
IELD ANALYSIS BY		P	MO	
	•		0	139
Joan Ornato		4. TOTAL HARD	DNESS (C. 00) (Computed) 158	
ATE OF ANALYSIS	······································	5. NON+CARBO	HATE HARDNESS (C+CO,) (By (Computation)
13 April 83			19	
II. SPECIAL LABORATOR	ANALYSES	6. CADOMATE	HARDNESS (CACO) (By Com	utation)
	······································		139	ruse (20N)
Check (X) individual items to be i Analyses. Request determination c suspected of being present in sign	nly of those substances	7, TOTAL DIS	SOLVED SOLIDS	<u></u>
(X)	PPM	A. SPECIFIC	CONDUCTANCE (Micromhos)	
X 1. As	< 0.001	-	441	-
X 2. Se	< 0.001		I TEM	РРМ
Х 3. РЬ	0.02	9. CALCIUM		55
X 4. Ba		10. MAGNESIU	······································	5
X 5. Cu	< 0.5		(No) AND POTASSIUM (E)	38.2
	0.15			
	< 0.04		E (OW) • (Computed)	139
X 7. Cr (Hexavalent) a. PO	< 0.05	and an an an an an an an an an an an an an	ATE (HCO3) • (Computed)	
			ϵ (∞_3)• (Computed)	
χ 9, Cd	< 0.01	15. SULFATE		11.4
10. CN		16. CHLORIDE		78.8
11. Phenolic Compounds ()	PB)	17. NITRATE	(as nitrogen)	1.2
X 12. Others (Specily) Ag	< 0.01	18. IRON (F	Fe) TOTAL	< 0.0
X 13. Hg	< 0.001	19. MAGANESE	(Mn)	< 0.0
X 14. Endrin (ug/1)	< 0.128	20. SILICA ((5102)	1.1
X 15. Lindane (µg/1)	< 0.035	21. FLUDRIDE	and the second second second second second second second second second second second second second second second	< 0.1
X 14. Methoxychlor (ug/	(< 0.526)	State whethe	er determined or computed fro	P and MO alkalin.
EMARKS (Such as unusual appearance, X 17. Toxaphene (μg/1) X 18. 2, 4-D (μg/1) X 19. Silvex (μg/1)	< 3.60	Langel	ier's Index =515	
ABORATORY ANALYSIS BY			DA	TE OF ANALYSIS
EB/RT/JO	•			
DD FORM 710 REP	ACES WD AGO FORM 8-125, 1			GP0 83-560



DEPARTMENT OF VETERANS AFFAIRS Louisville Regional Office 321 W Main Street, Suite 390 Louisville KY 40202

Robert L. Burgett



Decision Review Officer Decision March 27, 2007

INTRODUCTION

The records reflect that you are a veteran of the Vietnam Era. You served in the Air Force from May 26, 1966 to March 27, 1970 and the Marine Corps from January 8, 1971 to December 11, 1972. We received a Notice of Disagreement from you on January 25, 2007 about one or more of our earlier decisions. Based on a review of the evidence listed below, we have made the following decision(s) on your claim. This decision is considered under the de nova review process.

DECISION

 Service connection for eancer of the larynx with laryngectomy and hemithyroidectomy is granted with an evaluation of 100 percent effective May 17, 2006.
 This is considered a full grant of benefits sought on appeal and is now closed.

2. Service connection for scar of the neck, residuals of laryngectomy and hemithyroidectomy is granted with an evaluation of 10 percent effective May 17, 2006.

 Entitlement to special monthly compensation based on complete organic aphonia with constant inability to communicate by speech is granted from May 17, 2006. 4. Basic eligibility to Dependents' Educational Assistance is established from May 17, 2006.

EVIDENCE

- All evidence contained in claims file to include numerous medical records from private and VA facilities, lay statements, military personnel records, service medical records 5/66 to 3/70 and 1/71 to 12/72
- Reopened claim received May 17, 2006
- · Copies of prior BVA decisions
- Numerous articles on Agent Orange and chemicals used in Vietnam, Guam, and the Pacific
- VA Medical Centers Lexington and Huntington treatment records dated 11-12-02 through 3-13-07
- Informal Conference held on March 27, 2007
- Statement in Support of Claim dated 2-6-07
- Election of post decision review process dated 2-6-07
- Notice of Disagreement received 1-25-07
- Statements from Jimmy Young, Vancil Sanderson, Donald Martin, and Roger Richmond
- · Statement from claimant received 7-14-06
- · Copies of photographs

REASONS FOR DECISION

1. Service connection for cancer of the larvnx with larvngectomy and hemithyroidectomy.

Review of evidence from the NPRC shows that you were on TDY and were stationed at Anderson AFB, Guam for the period March 5, 1968 to September 4, 1968 and June 7, 1969 to September 18, 1969. AF Form 7 shows you were a material facility specialist. It also shows that you were on TDY from July 13, 1967 to October 15, 1967, but does not specify where your TDY was performed. You stated while stationed in Guam, you moved chemical stored in drums from one part of the storage area to another and periodically the drums would drop and chemicals would spray on you. It is also noted that while serving in Guam chemicals around the base was used to control the weeds.

Report dated June 23, 2006, Petition for Justice and Peace for Guam and the Pacific reported that soldiers stationed on Guam who have handles Agent Orange in the late 1960's have become ill and symptoms of dioxin poisoning became apparent in the general population of the island, according to the Dow Chemical Investor Risk Report. It as also noted new information has surfaced as the Guam legislature prepares for introduction of a

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resolution to ask Congress to include the island in the investigation into the chemical or biological warfare testing projects secretly conducted by the Department of Defense in various locations from 1954 to 1973. It is noted that the Dow Chemical Report that dioxin contamination has been measured at up to 1,900 ppm in some areas of Anderson Air Force Base. Evidence reviewed shows Agent Orange on Guam was confirmed. During the Vietnam War car, Guam was used as a storage facility for Agent Orange, a kind of chemical herbicide used in Vietnam in 1968 and 1969. A CBS News Report on June 12, 2005 stated that Agent Orange was sprayed on Guam from 1955 to 1960's. Report from Dr. Uis Szyfred noted problem with contamination of Guam with toxic chemicals is very complex due to the amount of chemicals, the dispersion factors (evaporation, rain, infiltration, winds, etc), the mechanisms of human exposure (infiltration, food, water, skin etc) but most of all because of government's censorship/cover up. More than 2,000 documents and obtained evidence of contamination of food, water, plants etc. Reports also noted extreme limited number of Air Force records that do not refer to the use of Agent Orange or other chemicals in routine base maintenance activities such as spaying along railroad tracks, weed control on tifle ranges, etc. Information on such does not exist.

Your military occupation duties as a material facility specialist requiring you to handle storage barrels at the Anderson Air Force Base and supporting photographs verifying your handling of these barrels as well as the numerous reports of herbicides used and stored at the Air Force Base, it is conceded you were exposed to herbicides while on TDY in Guam.

Numerous medical statements and treatment records show treatment for larynx cancer which required total laryngectomy and hemithyroidectomy in 1993. You currently use a prosthesis for verbal communication. On December 31, 2003 it is noted you are 10 years status post TL and XRT for laryngeal cancer. You are currently doing well and dysphagia complaints are completely resolved with GERD treatment.

Service connection may be granted for specific diseases or conditions which are presumed to have been caused by service if manifested to a compensable degree following military discharge. Although not shown in service, service connection for cancer of the larynx with laryngectomy and hemithyroidectomy has been granted on the basis of presumption. Although you do not meet the requirement of service in the Republic of Vietnam for application of the presumption of exposure to herbicides, the overwhelming evidence does suggests you were exposed to herbicides while stationed in Guam. You are also shown to have a medical diagnosis of larynx cancer which is recognized as being associated with herbicide exposure, under 38 CFR 3.309e. Therefore, service connection for cancer of the larynx, status post laryngectomy and hemithyroidectomy is granted with an evaluation of 100 based on total laryngectomy and hemithyroidectomy.

Hi Van

I have been getting your e-mails, and I have replied to you, but mine have been returned with a message saying your e-mail is full. You may want to check the space in your e-mail, or check with your Internet provider. You may have too many messages, and need to delete some, or else save them to a different file on your hard drive.

I got a few pictures that I want you to look at; they were all taken at GUAM when I was over there.

Picture # 2 is one of the supply yards. The drums are marked orange rings and orange tops for AO, white rings and white tops for Agent White and blue rings and tops for agent Blue, you will see all kinds in these pictures. Picture # 3 the handsome guy on the forklift is me.

Picture # 4 is a field after we sprayed; we were making a supply yard. Picture # 5 shows the drums of Agent White.

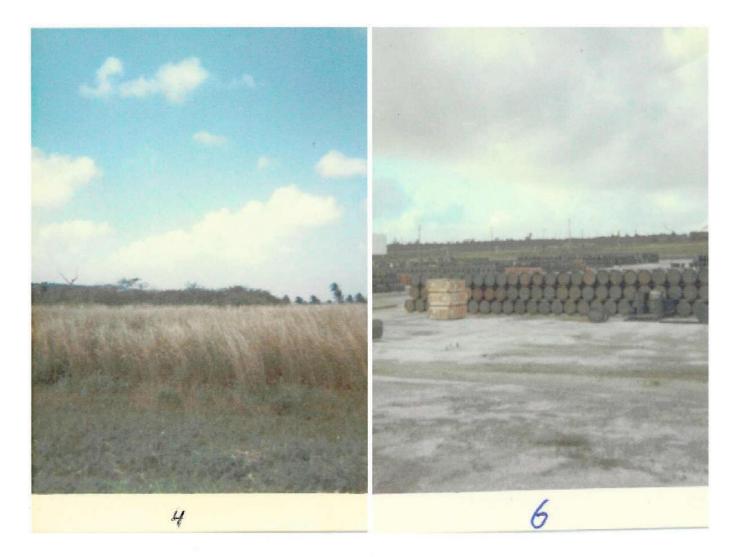
Picture # 6 shows more of drums of Agent Orange.

These are just a few of the pictures that I have.

I e-mailed a few senators and representatives, but none have gotten back to me. I still need to find a way to prove I was exposed, I need Air Force records.

If you come up with anything else or talk to anyone that may have other information that may help let me know. Good luck with your claim.

Robert Burgett P.O. Box 533 Belfry, KY. 41514 606-237-4511







July 5, 2007 Department of Veterans Affairs Veterans Appeals Board Washington, DC

Dear Sir:

I served in the Air Force in 1967, 1968, and 1969, and I was sent TDY to Guam three times. I was assigned to supplies, and my job consisted of supervising the supply yard. Supplies were sent to Guam, and then loaded on planes to send to Vietnam. These supplies included Agent Orange. I frequently used a fork lift, and drove a tractor trailer to transport the drums of Agent Orange.

Agent Orange was shipped to Guam, and the Air Force unloaded the ships, hauled the chemicals to the stock yard, and later loaded the air planes to send Agent Orange to Vietnam. We also used Agent Orange to spray around Andrews Air Force base to contain the weeds. We did not know the health hazards that these chemicals could cause, so we did not take precautions. We were not given protective clothing, and due to the heat, we often took our shirts off. It was not unusual for the fork lifts to puncture drums, causing the chemical to spray out on us.

I suffer from numerous health problems due to my exposure to Agent Orange. I have had throat cancer, skin cancer, chloracne, and lung disease. If you would like further information, please do not hesitate to contact me.

Sincerely, Robert Burgett

606-237-4511

Roger Richmond 120 Double R Lane Daniels, WV 25832

November 21, 2002

Department of Veterans Affairs Louisville Regional Office 545 South Third Street Louisville Ky 40202

Dear Sir,

I am writing on behalf of Robert Burgett. We were stationed together at Pease Air Force Base in New Hampshire. We were sent TDY to Guam sometime during 1967,68, or 1969. We both worked in the supplies. One part of our job included loading, unloading, and stockpiling drums of Agent Orange and other hazardous chemicals. We also transported them in trucks from the supply yard to airplanes.

I have seen the photographs that Robert has of the supply yard, and can state that these photographs were taken in Guam. I am also in one of the photographs; I am driving a forklift.

Sincerely,

Roger Richmond

Jimmy Dale Young P.O. Box 324 Sidney, Ky. 41564

January, 15, 2003

Dear Sir:

My name is Jimmy Dale Young, I live at Sidney, Kentucky. Bob Burgett has been a friend of mine since high school. Bob and I were stationed at Pease Air Force Base in New Hampshire. We were sent to Guam in Feb, 1969. While in Guam we both were in supplies. I was a truck driver and my job was to pick up truck loads of Agent Orange. and other hazardous chemicals, and haul them to the air craft. I unloaded the drums from the truck and put them on the airplanes.

I have gone to the supply yard and picked up these chemicals from Bob Burgett, I have seen him loading the chemicals in the same supply yard where I worked. I have also seen the pictures that were taken of the supply yard, and know that these photos were actually taken in Guam.

Sometimes we dropped the drums, or ran a forklift through one, but this was not something we reported. We did not know the danger of the chemicals at that time.

The military recognizes that Agent Orange was used in Vietnam, but they are overlooking the fact that someone had to store the chemicals, and load the chemicals in order to get them transported to Vietnam.

I will be happy to answer any questions you have that would help Mr. Burgett.

Sincerely yours,

Timmy D. Young Ommy D. Jour

38 CFR 3.102 - Reasonable doubt.

3.102 - Reasonable doubt.

It is the defined and consistently applied policy of the Department of Veterans Affairs to administer the law under a broad interpretation, consistent, however, with the facts shown in every case. When, after careful consideration of all procurable and assembled data, a reasonable doubt arises regarding service origin, the degree of disability, or any other point, such doubt will be resolved in favor of the claimant. By reasonable doubt is meant one which exists because of an approximate balance of positive and negative evidence which does not satisfactorily prove or disprove the claim. It is a substantial doubt and one within the range of probability as distinguished from pure speculation or remote possibility. It is not a means of reconciling actual conflict or a contradiction in the evidence. Mere suspicion or doubt as to the truth of any statements submitted, as distinguished from impeachment or contradiction by evidence or known facts, is not justifiable basis for denying the application of the reasonable doubt doctrine if the entire, complete record otherwise warrants invoking this doctrine. The reasonable doubt doctrine is also applicable even in the absence of official records, particularly if the basic incident allegedly arose under combat, or similarly strenuous conditions, and is consistent with the probable results of such known hardships.

(Authority: 38 U.S.C. 501) [50 FR 34458, Aug. 26, 1985, as amended at 66 FR 45630, Aug. 29, 2001]

Read more: http://cfr.vlex.com/vid/3-102-reasonable-doubt-19776129#ixzz0rAiVsqDP