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5905-501

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

AUG 20 1997

Judy Oldham-Smith
Helena Chemical Company
6075 Poplar Avenue
Suite 500
Memphis, TN 38119

Dear Ms. Oldham-Smith:

SUBJECT: Weed-RHAP A-4D
EPA Registration No. 5905-501
Your Application Dated July 24, 1997

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable with the following comments:

1. The subject product is labeled for use on pastures and rangelands at rates which exceed the maximum rates allowed by the October 30, 1992, 2,4-D exposure Reduction Agreement. You must reduce the application rate for "Control of Southern Wild Rose" on rangeland on page 12, so that it does not exceed the maximum allowable rate for 2,4-D on this site of 2.0 lbs. of 2,4-D acid equivalent (ae) per acre. The rate given of up to 6.0 quarts (5.7 lbs. ae) per acre exceeds this limit. The maximum allowable rate should be 4.2 pints per application.

A stamped copy is enclosed for your records. Please submit one (1) final printed copy for the above mentioned label with the required revision before releasing the product for shipment.

Sincerely yours,

Joanne I. Miller
Product Manager (23)
Herbicide Branch
Registration Division (7505C)

Enclosure

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WEED RHAP A-4D

2,4-D AMINE HERBICIDE

ACTIVE INGREDIENT:	BY WT.
Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid	46.7%
INERT INGREDIENTS:	53.3%
TOTAL	100.0%

Equivalent to 38.8% of 2,4-Dichlorophenoxyacetic acid or 3.8 lb/gal.
 Isomer specific by AOAC Method 6.275, 13th Ed, 1980.

ACCEPTED
 with COMMENTS
 In EPA Letter Dated
 AUG 20 1997
 Under the Federal Insecticide,
 Fungicide, and Rodenticide Act
 as amended, for the pesticide
 registered under EPA Reg. No.
 5905-501

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

STATEMENT OF PRACTICAL TREATMENT

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF SWALLOWED: Call a doctor or get medical attention. Do not induce vomiting. Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol.

IF INHALED: Move victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

EPA REG. NO. 5905-501
 EPA EST. NO.

NET CONTENTS:

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RECD EPA/OPP/DPD1

**MANUFACTURED BY
 HELENA CHEMICAL COMPANY
 MEMPHIS, TN 38119**

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

Corrosive. Causes irreversible eye damage. Harmful if swallowed or absorbed through skin. Do not get in eyes or on clothing. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

Long-sleeved shirt and long pants

Waterproof gloves

Shoes plus socks

Protective eyewear

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be re-used until it has been cleaned.

Engineering Controls Statements

If this container contains 5 gallons or more in capacity, do not open pour. A mechanical system (such as probe and pump or spigot) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4)], the handler PPE requirements may be reduced or modified as specified in the WPS.

When handlers used enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from target area. Spray equipment used in applying this product should be thoroughly cleaned before

using for any other purpose. Use repeated flushing with soap and warm water or suitable chemical cleaner. It is best to use a separate sprayer for application of insecticides and fungicides. Do not contaminate water by cleaning of equipment or disposal of washwaters. This product will kill or seriously injure many desirable forms of vegetation. Do not apply directly to flowers, fruits, vegetables, grapes, ornamentals, cotton or other desirable plants. Do not use when there is hazard from drifting mists. (Coarse sprays are less likely to drift.) Vapors from this product may injure susceptible plants in the immediate vicinity. Avoid contamination of water used for domestic purposes and irrigation purposes. Excessive amounts of this product in the soil may temporarily inhibit seed germination and plant growth.

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. Do not apply directly to water except as specified on this label. Do not contaminate water when disposing of equipment washwaters.

GROUNDWATER CONTAMINATION

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

Long-sleeved shirt and long pants
 Waterproof gloves
 Shoes plus socks
 Protective eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR, Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treatment areas until spray has dried.

CHEMIGATION PROHIBITION

Do not apply this product through any type of irrigation system.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Protect from freezing. If stored below 32°F and crystals form, warm to 72°F for 24 hours, periodically rolling drum to reconstitute.

PESTICIDE DISPOSAL:

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate, is a violation of Federal Law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

Metal Containers - Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Plastic Containers - Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

RETURNABLE - REFILLABLE CONTAINER (Drum):

After use, return the container to the point of purchase or designated locations. This container must only be filled with WEED RHAP A-4D. **DO NOT RE-USE THIS CONTAINER FOR ANY OTHER PURPOSE.** Prior to refilling, inspect thoroughly for damage such as cracks, punctures, abrasions, and damaged or worn out threads on closure devices. Do not refill or transport damaged or leaking containers. Check for leaks after refilling and before transportation. If the container is not being refilled, return to the point of purchase.

GENERAL INFORMATION

Performance of this product may be affected by local condition, crop varieties, and application

method. User should consult local extension service, agricultural experiment, or university weed specialists, and state regulatory agencies for recommendations in your area.

Best results are obtained when product is applied to young succulent weeds that are actively growing. Application rates lower than recommended will be satisfactory on susceptible annual weeds. For perennial weeds and conditions such as the very dry areas of the western states, where control is difficult, the higher recommended rates should be used.

When product is used for weed control in crops, the growth stage of the crop must be considered.

Some plants and weeds, especially woody varieties, are difficult to control and may require repeat applications. Application rates should be 1 to 5 gallons of total spray by air or 5 to 25 gallons by ground equipment unless otherwise directed. In either case, use the same amount of 2,4-D recommended per acre. For crop uses, do not mix with oil, surfactants, or other adjuvants unless specifically recommended on label. To do so may reduce herbicides selectivity and could result in crop damage.

Aerial application should be used only when there is no danger of drift to susceptible crops. Many states have regulations concerning aerial application of 2,4-D formulations. Consult local regulatory authorities before making applications. This product contains the Dimethylamine salt of 2,4-D, one of the least volatile forms of 2,4-D. Vapors released by this product are insufficient to cause damage to adjacent susceptible crops.

Because coarse sprays are less likely to drift than fine, do not use equipment (such as hollow cone small orifice nozzles) or conditions (such as high pressure) that produce such sprays.

Product should not be allowed to come into contact with desirable, susceptible plants such as beans, cotton, fruit trees, grapes, legumes, ornamentals, peas, tomatoes, and other vegetables. Product should not be used in greenhouses. Excessive amounts of this product in the soil may temporarily inhibit seed germination and all plant growth.

Users should note that herbicide treatment of public water requires a permit from appropriate state agencies in most states. Your state Conservation Department, or Game and Fish Commission will aid you in securing a permit in your state.

If stored below freezing, it may be necessary to warm product to 70°F and agitate before using. This does not affect the efficiency of the product.

Spray equipment used to apply 2,4-D should not be used for any other purpose until thoroughly cleaned with a suitable chemical cleaner.

Spray Preparation: Add the recommended amount of Weed Rhap A-4D to approximately one-half the volume of water to be used for spraying. Agitate well, then add the remainder of the water. Continue agitation during application until spray tank is empty.

Use in Liquid Nitrogen Fertilizer: Weed Rhap A-4D may be combined with liquid nitrogen fertilizer suitable for foliar application of corn, grass, pastures, or small grains in one operation. Use Weed Rhap A-4D according to directions on this label for those crops. Use liquid nitrogen fertilizer at rates

recommended by supplier or extension service specialist. Mix the product and fertilizer according to the following instructions:

Fill the spray tank approximately 1/2 full with the liquid nitrogen fertilizer. In a separate container, mix the amount of Weed Rhap A-4D to be used with an equal amount of water. Add Weed Rhap A-4D mixture to the spray tank while agitating. Add the remainder of the fertilizer while continuing to agitate. Apply immediately, maintaining agitation during application until tank is empty. **DO NOT APPLY DURING COLD (NEAR FREEZING) WEATHER.** Spray mixture must be used immediately and may not be stored.

NOTE: Pre-mixing the product with an equal amount of water is important.

WHERE TO USE

This product is used to control broadleaf weeds in cereal crops, corn, sorghum, weeds and brush in rangeland, pastures, rights-of-way, and similar noncrop uses, tree injection, and for aquatic weed control.

RECOMMENDED RATE OF WEED RHAP A-4D PER ACRE**
By Air or Ground

Crop	Normal Rates (usually safe to crop)	Higher rates for Special Situations* (more likely to injure crop)
<i>Small Grains</i>		
Spring Postemergent wheat, barley, rye	2/3 to 1-1/3 pints	2 to 3 pints
oats	1/2 to 1 pint	1 1/2 to 2 pints
Preharvest (dough stage) wheat, barley, oats	1 to 2 pints	2 to 3 pints
<i>Corn</i>		
Preplant	1 to 2 pints	
Preemergent	2 to 4 pints	
Emergent	1 pint	1 1/2 pints
Postemergent- up to 8 inches tall	1/2 to 1 pint	
8 inches to tasseling (use only directed spray)	1 pint	1 1/2 to 2 1/2 pints
Preharvest	1 to 2 pints	
<i>Sorghum</i>		
Postemergent 6 to 8 inches tall	2/3 to 1 pint	
8 to 15 inches tall (use only directed spray)	1 pint	1 1/2 to 2 pints
<i>Rice</i>	1 to 2 1/2 pints	2 to 3 pints
<i>Sugarcane</i>	2 to 4 pints	

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Note: The higher rates as recommended above may be necessary to control difficult weed problems, such as dry conditions in the Western States. They should not be used, however, unless possible crop injury is acceptable. User should consult local Extension Service or Agriculture Experiment Station Weed Specialist for recommendations on special conditions.

*Arizona, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming.

**If band treatment is used, base the dosage rate on the actual area sprayed.

WEEDS CONTROLLED

- | | | |
|---------------------|---------------------|--------------------|
| ALDERS | GUMWEED | SHEPHERDSPURSE |
| ALLIGATOR WEED | *GROUND IVY | SICKLEPOD |
| AMERICAN LOTUS | HEALALL | *SMARTWEEDS |
| ARROWHEAD | HEMP | SNEEZEWEED |
| ASTER | HENBIT | SOUTHERN WILD ROSE |
| ARTICHOKE | *HOARY CRESS | SOW THISTLE |
| AUSTRIAN FIELDCRESS | HORSETAIL | SPANISH NEEDLES |
| *BEGGARTICKS | HONEYSUCKLE | SPATTERDOCK |
| BIDEN | INDIGO | ST. JOHNSWORT |
| *BINDWEED | INDIAN MALLOW | STINGING NETTLES |
| BITTERSWEET | *IRONWEED | STINKWEED |
| BITTERWEED | JERUSALEM ARTICHOKE | SUMAC |
| BITTER WINTERCRESS | JEWELWEED | SUNFLOWER |
| BLACKEYED SUSAN | JIMSONWEED | SWEET CLOVER |
| BLESSED THISTLE | *KNOTWEED | TANWEED |
| BLUE LETTUCE | KOCHIA | TARWEED |
| BOX ELDER | LAMBSQUARTERS | THISTLES |
| BROOMWEED | LOCOWEED | TOADFLAX |
| BUCKHORN | LUPINES | TUMBLEWEED |
| BULLTHISTLE | *MALLOW | VELVETLEAF |
| BULRUSH | MARIJUANA | VENICEMALLOW |
| BURDOCK | MARSHELDER | *VERVAINS |
| BUR RAGWEED | MEXICAN WEED | VETCHES |
| BUTTERCUP | MORNINGGLORY | VIRGINIA CREEPER |
| *CANADA THISTLE | *MUSKTHISTLE*** | WATER HYACINTH |
| CARPETWEED | MUSTARDS | WATER LILY |
| CATNIP | *NETTLES | WATER PLANTAIN |
| CHICKWEED | NUTGRASS | WATER PRIMROSE |
| CHICKORY | *ORANGE HAWKWEED | WATER SHIELD |
| CINQUEFOIL | PARROT FEATHER | WILD CARROT |
| COCKLE | PARSNIP | *WILD GARLIC |
| COCKLEBUR | PENNYCRESS | WILD LETTUCE |
| COFFEEBEAN | PENNYWORT | *WILD ONION |
| COFFEEWEED | PEPPERGRASS | WILD PARSNIP |
| CREEPING JENNY | PEPPERWEED | WILD RADISH |
| CROTON | **PIGWEEDS | WILD RAPE |
| CURLY INDIGO | PLANTAINS | WILD STRAWBERRY |
| DANDELION | POISON HEMLOCK | WILD SWEET POTATO |
| DEVIL'S CLAW | POISON IVY | WILLOW |
| *DOCKS | POKEWEED | WITCHWEED |
| *DOGBANE | POORJOE | WOODWORM |
| DUCKWEED | POVERTYWEED | WORMSEED |
| ELDERBERRY | PRICKLY LETTUCE | YELLOW ROCKET |
| FLEABANE | PRIMROSE | |
| FIXWEED | PUNCTURE VINE | |
| FLORIDA PUSLEY | PURSLANE | |
| FRENCHWEED | RADISH | |
| GALINSOGA | RAGWEED | |
| GOATSBEARD | RUSH | |
| *GOLDENROD | *RUSSIAN THISTLE | |
| GOOSEFOOT | SAGEBRUSH | |
| | SALSIFY | |

*These species may require repeated applications and/or use of the higher rate recommended on this product label even under ideal conditions.

**Control of pigweeds in the High Plains area of Texas and Oklahoma may not be satisfactory with this product.

***Not registered for control of muskthistle in CA.

CROPS

SMALL GRAINS NOT UNDERSEEDED WITH A LEGUME (BARLEY, OATS, WHEAT, RYE): See table for recommended use rates.

Spray when weeds are small after grain begins tillering but before boot stage (usually 4 to 8 inches tall). Do not apply before the tiller stage nor from early boot through milk stage. To control large weeds that will interfere with harvest or to suppress perennial weeds, preharvest treatment can be applied when the grain is in the dough stage. Best results will be obtained when soil moisture is adequate for plant growth and weeds are growing well.

Spring Planted Oats: Apply in sufficient water to give good coverage. Apply after the fully tillered stage, except during the boot to dough stage.

Fall Planted Oats: Apply after full tillering but before early boot stage. Some difficult weeds may require higher rates of 1 to 1 1/2 pints per acre for maximum control, but injury may result. Do not spray during or immediately following cold weather.

Note: Oats are less tolerant to 2,4-D than wheat or barley and more likely to be injured. Do not forage or graze treated grain fields within 2 weeks after treatment with 2,4-D. Do not feed treated straw to livestock.

Spring Wheat and Durum: Weed Rhap A-4D may be used when the crop is in the three leaf stage but before the booting stage.

Emergency Weed Control in Wheat: For control of perennial broadleaf weeds, apply 3 pints per acre when weeds are approaching bud stage. Do not spray grain in the boot to dough stage. The 3 pint per acre application can produce injury to wheat. Balance the severity of your weed problem against the possibility of crop damage. Where perennial weeds are scattered, spot treatment is suggested to minimize the extent of crop injury. Use lower rate if small annual and biennial weeds are the major problem. Use the higher rate if perennial weeds or annual and biennial weeds are present which are in the hard-to-kill categories as determined by local experience. The higher rates increase the risk of grain injury and should be used only where the weed control problem justifies the grain damage risk. Do not apply to grain in the seedling stage. For aerial application, apply 1-5 gallons of water per acre; for ground application, use a minimum of 5 gallons of water per acre

CORN: See table for recommended use rates.

Preplant: Apply 7 to 14 days before planting corn to control emerged broadleaf weed seedlings or existing cover crops. Do not use on light, sandy soil or where soil moisture is inadequate for normal weed growth. Use the higher rate for less susceptible weeds or cover crops such as alfalfa.

Preemergence: Apply Weed Rhap A-4D from 3 to 5 days after planting but before corn emerges.

Do not use on very light, sandy soils. Use the higher rates on heavy soils. Plant corn as deep as practical.

Post Emergence: Best results are usually obtained when weeds are small and corn is 5 to 18 inches tall. When corn is over 8 inches tall, use drop nozzles. Do not apply from tasseling to dough stage. If corn is growing rapidly and temperature and soil moisture content is high, use $\frac{1}{2}$ pint per acre rate to reduce possibility of crop damage. Delay cultivation for 8 to 10 days to prevent stalk breakage due to temporary brittleness caused by 2,4-D. Application rates of up to 1 pint/acre may be used to control some hard to control weeds. However, the possibility of injury to the corn is increase.

If corn is over 8 inches tall, use drop nozzles to keep spray off corn foliage as much as possible. Do not use with oil, atrazine, or other adjuvants. Since the tolerance to 2,4-D of individual hybrids varies, consult your local Extension Service, Agricultural Experiment Station, or University Weed Specialist for information.

Pre-Harvest: After the hard dough or denting stage, apply 1 to 2 pints of Weed Rhap A-4D per acre by air or ground equipment to suppress perennial weeds, decrease weed seed production, and control tall weeds such as bindweed, cocklebur, dogbane, jimsonweed, ragweed, sunflower, velvetleaf, and vines that interfere with harvesting. Do not forage or feed corn fodder to livestock for 7 days following application.

SORGHUM (Milo): See table for recommended rate. Apply to sorghum when crop is 4 to 12 inches high with secondary roots well established. Use drop nozzles when crop is over 10 inches high. Do not apply from flowering to dough stage. Rates of up to 1 pint per acre may be used to control some hard to control weeds. However, the chance of crop injury is increased with the higher rates. Do not use with oil. Use lower rate if conditions of high temperature and high soil moisture exist.

Note: Corn & Sorghum hybrids vary in tolerance to 2,4-D. Some are easily injured. Spray only varieties known to be tolerant. Consult the seed company or your Agricultural Experiment Station or Extension Service Weed Specialist for this information.

RICE: See table for recommended rate.

Apply in the late tillering stage of development, at the time of first joint development (first to second green ring), usually 6 to 9 weeks after emergence. Do not apply after panicle initiation, after rice internodes exceed $\frac{1}{2}$ inch, at early seedling, early panicle, boot, flowering, or early heading growth stages. **Note:** 2,4-D can injure some rice varieties. Before spraying, consult local Extension Service or University specialists for appropriate rates and timing of sprays.

SUGARCANE: See table for recommended rate.

Apply as a pre- or post-emergent spray in the spring after canes merge and through lay-by. Consult local Agricultural Experiment or Extension Service Weed Specialists on specific use of this product, or in combination with Dowpon M, to control broadleaf weeds.

ORNAMENTAL TURF: Use 1 to 4 pints in enough water to give good coverage to one acre of weeds when weeds are young and actively growing. Perennial weeds should be near the bud stage,

but not flowering at application. Do not use on susceptible Southern grasses such as St. Augustine. Do not apply to newly seeded areas until grass is well established. Bentgrass, clover, legumes, and dichondra may be injured by this treatment.

NOTES FOR ALL TURF SITES (excluding sod farms): The maximum number of broadcast applications per treatment site is 2 per year.

GRASSES IN CONSERVATION RESERVE PROGRAM AREAS: To control actively, growing annual broadleaf weeds, use 1/2 -1 pint per acre when weeds are small; use higher rate on older weeds. Excessive injury may result if applied to young grasses with fewer than 6 leaves or prior to grasses being well established. To control biennial and perennial broadleaf weeds in established grasses, apply to actively growing weeds at a rate of 2-4 pints per acre. Treat when biennial weeds are in the seedling to rosette stage and before flower stalks are apparent. Treat perennial weeds in the bud to bloom stage.

Note: Use at least 2 gallons of water per acre by air and 5 gallons of water per acre by ground. Do not harvest or graze treated Conservation Reserve Program areas. Do not apply to grasses in the boot to dough stage if grass seed production is desired.

GRASS SEED CROPS: Apply 1 to 4 pints of Weed Rhap A-4D per acre in the Spring or Fall to control broadleaf weeds in grass being grown for seed. Do not apply from early boot to milk stage. Spray seedling grass only after the five leaf stage, using 3/4 to 1 pint per acre to control small seedling weeds. After the grass is well established, higher rates of up to 4 pints per acre can be used to control hard-to-kill annual or perennial weeds. For best results, apply when soil moisture is adequate for good growth. Do not use on Bent unless injury can be tolerated. Keep dairy animals off treated areas for 7 days. Do not cut grass for hay for 30 days after treatment. Remove meat animals from treated areas 3 days prior to slaughter.

CROP STUBBLE AND FALLOW LAND: To control annual broadleaf weeds, apply 1-2 pints per acre. Use the lower rate when weeds are small (2-3" tall) and actively growing. Use the higher rate on older and drought-stressed plants. To control biennial broadleaf weeds, apply 2-4 pints per acre. Spray while musk thistles or other biennial species are in the seedling to rosette stage and before flower stalks become apparent. The lower rate can be used in the spring during rosette stage. Use the highest rate in the fall or after flower stalks have developed. To control perennial broadleaf weeds such as Canada thistle and field bindweed, apply 2-6 pints per acre. Spray weeds in bud to bloom stage or while in good vegetative growth. Do not disturb treated areas for at least 2 weeks after treatment or until weed tops are dead. To control wild garlic and onion, apply 4-6 pints per acre to prevent regrowth in the fall following harvest. **Note:** Do not plant any crop for 3 months after treatment or until chemical has disappeared from the soil.

ESTABLISHED PASTURES AND RANGELANDS: Use 1 to 4 pints of Weed Rhap A-4D in sufficient water to give good coverage to one acre. Use the light rate on more easily injured grasses. For small areas, use 3/4-1 fluid ounce (1 1/2-2 tablespoons) per 1,000 square feet; mix 1-3 gallons of water and apply uniformly over the area. Preferably apply when weeds are small and actively growing before bud stage. Fall or spring is the best time to treat. Repeated treatments may be needed for less susceptible weeds. Treatment will kill or injure alfalfa, sweet clover and other legumes. White clover (including Ladino) may be injured by light application, but recovers; repeated applications will kill it. Some dichondra, bentgrass, carpet, buffalo, and St. Augustine grasses may be injured. Usually colonial bents are more tolerant than creeping types; velvets are most easily injured. Where bentgrass

predominates, make 2 applications of 1 pint per acre at 3 week intervals. Keep dairy animals off treated areas for 7 days. Do not cut grass for hay for 30 days after treatment. Remove meat animals from treated areas 3 days prior to slaughter.

CONTROL OF SOUTHERN WILD ROSE: On rangelands, roadsides, and fencerows, use 1 gallon of product plus 4-8 fluid ounces of an agricultural surfactant per 100 gallons of water and spray thoroughly as soon as foliage is well developed. Two or more treatments may be required. On rangeland, apply a maximum of 6 quarts of product per acre per application. Do not graze dairy animals on treated areas within 7 days of application.

GENERAL WEED CONTROL: (Airfields, roadsides, vacant lots, drainage ditch banks, fence rows, industrial sites and similar areas): Use 1 to 3 quarts of Weed Rhap A-4D per acre. Usually 2 quarts per acre will give adequate control. Do not use on herbaceous ground covers or creeping grass such as Bent. Legumes will usually be damaged or killed. Deep-rooted perennials may require repeat applications. Do not use on freshly seeded turf until grass is well established. Delay reseeding for 3 months or until 2,4-D has disappeared from soil.

SPOT TREATMENT IN NON-CROP AREAS: To control broadleaf weeds in a small area with a handsprayer, use ½ pint of product in 3 gallons of water and spray to thoroughly wet all foliage.

RIGHTS-OF-WAY: Apply up to 2 gallons of product per acre for the control of perennial broadleaf weeds and susceptible woody species. For less susceptible perennial broadleaf weeds and difficult to control woody species, use a combination of 2 gallons of product plus 1-4 quarts of Garlon®3A herbicide per acre. For ground application, apply in 20-400 gallons of water, depending on the height of the weeds and brush. Use the higher volumes of up to 400 gallons per acre for dense brush 6 feet tall or higher. For aerial application, use 10-3- gallons per acre total spray volume. Garlon® is a registered trademark of DowElanco.

APPLES, PEARS, STONE FRUIT AND NUT ORCHARDS (DO NOT USE IN CA): To control annual broadleaf weeds on the orchard floor, apply 3 pints per acre using coarse sprays and low pressure in sufficient volume of water to obtain thorough wetting of weeds. Treat when weeds are small and actively growing. Do not use on light, sandy soil.

Note: Do not apply to bare ground as injury may result. Do not apply immediately before irrigation and withhold irrigation for 2 days before and for 3 days after treatment. Do not allow spray to drift onto or contact foliage, fruit, stems, trunks of trees or exposed roots since injury may result. Do not apply to newly established or young orchards; trees must be at least 1 year old and in vigorous condition. Do not apply during bloom. Do not graze or feed cover crops from treated orchards. Do not make more than 2 applications per year. Do not harvest stone fruit within 40 days and nuts within 60 days of application.

WOODY PLANT CONTROL: To control woody plants susceptible to 2,4-D, such as alder, buckbrush, elderberry, sumac, and willow on non-crop areas, use 2 to 3 quarts of Weed Rhap A-4D per acre in 100 gallons of water. Wet all parts of the plants thoroughly, including stem and foliage, to the point of run off. Higher volumes of up to 400 gallons per acre are necessary where the brush is very dense and over 6 to 8 feet high. Applications are more effective when made on actively growing plants. Treatment should not be made during time of severe drought or in early Fall when leaves lose their green color. Hard to control species may require re-treatment next season.

TREE INJECTION: For the control of unwanted hardwoods such as elm, oak, hickory, and sweetgum in forest and other non-crop areas, apply undiluted Weed Rhap A-4D by injecting 1 ml through the bark, using one injection per inch of trunk diameter measured at breast height (4 ½ feet). For harder to control species (ash, maple, dogwood), use 2 ml of undiluted Weed Rhap A-4D per injection. All injections should be as near the root collar as possible and should be evenly spaced around the trunk. Injections may be made at any time of the year but are most effective during the growing season. Maples should not be treated during the spring sap rise. For dilute injections, mix 1 gallon of product in 19 gallons of water.

Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.

WEED AND BRUSH ON IRRIGATION CANAL DITCHBANKS - *Seventeen Western States:* Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, Nevada, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, Wyoming.

For control of annual and perennial broadleaf weeds, apply 1 to 2 quarts of Weed Rhap A-4D per acre in approximately 20 to 100 gallons of total spray. Treat when weeds are young and actively growing before the bud or early bloom stage. For harder to control weeds, a repeat spray may be needed after 3 to 4 weeks for maximum results, using the same rates.

Apply no more than 2 treatments per season. For woody brush and patches of perennial broadleaf weeds, mix one gallon of Weed Rhap A-4D in 150 gallons of water. Wet foliage thoroughly, using approximately 1 gallon of spray solution per square rod.

Spraying Instructions: Low pressure (10 to 40 psi) power spray equipment should be used and mounted on a truck, tractor, or boat. Apply while traveling upstream to avoid accidental concentration of chemical into water. Spray when the air is calm, 5 mph or less. Do not use on small canals (less than 10 CFS) where water will be used for drinking purposes.

Boom spraying onto water surface must be held to a minimum and no cross-stream spraying to opposite banks should be permitted. When spraying shoreline weeds, allow no more than 2-foot overspray onto water with an average of less than one-foot overspray to prevent introduction of greater than negligible amounts of chemical into the water.

Do not allow dairy animals to graze on treated areas for at least 7 days after spraying. Water within treated banks should not be fished.

AQUATIC WEED CONTROL

Notice to Applicators: Before application, coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for such use.

Fish breathe oxygen in the water and a water/oxygen ratio must be maintained. Decaying weeds use up oxygen. To avoid fish kill from decaying plant material, do not treat more than one half the lake or pond at one time. For large bodies of weed infested waters, leave buffer strips of at least 100 feet wide and delay treatment of these strips for 4 to 5 weeks or until the dead vegetation has decomposed.

Ground or Surface Application: Do not apply when wind speeds are at or above 10 mph.
Air Application: Do not apply when wind speeds are at or above 5 mph. The restrictions do not apply to subsurface applications used in weed control programs.

Delay the use of treated waters for irrigation for three weeks after treatment unless an approved assay shows that the water does not contain more than 0.1 ppm 2,4-D acid. Do not treat irrigation ditches in areas where water will be used to overhead sprinkler irrigate susceptible crops especially grapes, tomatoes and cotton.

Delay the use of treated water for domestic purposes for a period of three weeks or until such time as an approved assay shows that the water contains no more than 0.1 ppm 2,4-D acid.

FOR AQUATIC WEEDS IN LAKES, PONDS, RESERVOIRS, MARSHES, BAYOUS, DRAINAGE DITCHES, CANALS, AND RIVERS AND STREAMS THAT ARE QUIESCENT OR SLOW MOVING: Use 2 ½ to 4 ½ pints of Weed Rhap A-4D in 50 to 100 gallons of water per acre. Spray to wet foliage thoroughly. Application should be made when leaves are fully developed above water line and plants are actively growing. Your State Conservation Department or Game and Fish Commission will assist you in determining the best time and rate for application under local conditions. Perennial and other hard to control weeds may require a repeat application to give adequate control.

WATER HYACINTH (*Eichornia crassipe*): For control of actively growing plants with surface and air applications, use 4 to 8 pints per acre. **Spray the weed mass only.** Use 8 pints when plants are matured or when the weed mass is dense. Repeat as necessary to kill regrowth and hyacinth plants missed in the previous application.

Surface Application: Use power sprayers operated with a boom or spray gun mounted on a boat, tractor, or truck. Thorough wetting of foliage is essential for maximum control. Use 100 to 400 gal/A of spray mixture. Special precautions such as the use of low pressure, large nozzles and thickening agents should be taken to avoid spray drift in areas of sensitive crops. For DIRECTASPRA™ operation, use with 1 pint of drift control agent in 50 to 100 gallons of water. For other applications, follow the drift control agent label for mixing directions. **Air Application:** Use drift control spray equipment or thickening agents mixed into the spray solution. Apply 1.0 gallon per acre through standard boom systems with a minimum of 5 gallons of spray mix per acre. For MICROFOIL® drift control spray systems, apply in 12 to 15 gallons spray mix per acre.

WATER MILFOIL (*Myriophyllum spicatum*): In programs conducted by the Tennessee Valley Authority in dams and reservoirs of the TVA system, Weed Rhap A-4D will control Eurasian Water Milfoil with surface, subsurface and air applications.

To control water milfoil when less than 5 gallons of concentrate per acre is recommended, dilute the concentrate with water to apply a minimum of 5 gallons of spray mix per acre. Do not treat within ½ mile of potable water intakes. Shoreline areas should be treated by sub-surface injection applied by boat to avoid aerial drift. Do not apply when weather conditions favor drift from target area.

Open Water Areas: To reduce contamination and prevent undue exposure to fish and other aquatic organisms, do not treat water areas that are not infested with aquatic weeds. Apply 2.5 to 10 gallons per acre. The higher rate is used in areas of greater water exchange. These areas may require a

repeat application. For best results, apply in spring or early summer when milfoil starts to grow. The timing can be checked by sampling the lake bottom in areas heavily infested with weeds the year before.

Subsurface Application: Apply 2.5 to 10 gallons per acre as a concentrate directly into the water through boat mounted distribution systems.

Surface Application: Apply 2.5 to 10 gallons per acre in a minimum spray volume of 5 gallons mix per acre.

Air Application: Use drift control spray equipment or thickening agents mixed into the spray solution. Apply 2.5 to 10 gallons per acre through standard boom systems with a minimum of 5 gallons of spray mix per acre. For MICROFOIL® drift control spray systems, apply in 12 to 15 gallons spray mix per acre.

CONDITIONS OF SALE - LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

The directions on this label are believed to be reliable and should be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions, the failure to follow the label directions, or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man, or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damage and in no event shall damages or any other recovery of any kind against the Company exceed the price of the product which causes the alleged loss, damage, injury, or other claim. The Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income.

The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability, and remedies.