

WEED RHAP® LV-4

2,4-D LV ESTER HERBICIDE

For selective control of many broadleaf weeds in certain crops, including cereal grains (wheat, barley, millet, oats and rye), corn (field corn, popcorn and sweet corn), fallow land and crop stubble, sorghum (grain and forage sorghum), and soybeans (preplant burndown application only), forests, rangeland and established grass pastures, including Conservation Reserve Program (CRP) acres, listed non-cropland areas, grasses grown for seed or sod, and ornamental turfgrass.

Active Ingredient:

2,4-Dichlorophenoxyacetic Acid, 2-Ethylhexyl Ester	65.9%
Other Ingredients	34.1%
Total	100.0%

Contains petroleum distillates
 Acid Equivalents: 2,4-dichlorophenoxyacetic acid: 44.1% – 3.8 lb/gal

KEEP OUT OF REACH OF CHILDREN
CAUTION

First Aid	
If swallowed:	Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
If on skin or clothing:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment.
If in eyes:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Note to Physician: Contains petroleum distillate – vomiting may cause aspiration pneumonia.	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.	

Refer to label booklet for Additional Precautions and Directions for Use.

EPA Reg. No. 5905-600
 EPA Est. No. 5905-IA-1

AD 100316
 NET CONTENTS:

MANUFACTURED FOR
 HELENA CHEMICAL COMPANY
 225 SCHILLING BOULEVARD, SUITE 300
 COLLIERVILLE, TENNESSEE 38017

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

CAUTION. Harmful If Swallowed or Absorbed Through Skin • Causes Moderate Eye Irritation • Prolonged or Frequently Repeated Skin Contact May Cause Allergic Skin Reactions in Some Individuals

Avoid contact with skin, eyes, or clothing.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are made of Barrier Laminate, Nitrile Rubber \geq 14 mils, Neoprene Rubber \geq 14 mils, or Viton \geq 14 mils.

All mixers, loaders, applicators, flaggers, and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves (except pilots), and
- Chemical resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

See engineering controls for additional requirements

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protections 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.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)].

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE 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.

Physical Chemical Hazards

Do not mix or allow in contact with oxidizing agent. Hazardous chemical reaction may occur.

Environmental Hazards

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

FOR ALL TANK MIXTURES: It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

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. 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 enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 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:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

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 enter or allow people (or pets) to enter the treated area until sprays have dried.

Product Information

Weed Rhap LV-4 herbicide is intended for selective control of many broadleaf weeds in certain crops, including, cereal grains (wheat, barley, millet, oats and rye), corn (field corn, popcorn and sweet corn), fallow land and crop stubble, sorghum (grain and forage sorghum), and soybeans (preplant burndown application only), forests, rangeland and established grass pastures including Conservation Reserve Program (CRP) acres, non-cropland, grasses grown for seed or sod, and ornamental turfgrass.

Apply Weed Rhap LV-4 as a water or oil-water spray during warm weather when weeds or woody plants are actively growing. Application under drought conditions will often give poor results. Use low spray pressure to minimize drift. Generally, the lower dosages specified on this label are satisfactory for young, succulent growth of susceptible weed species. For less susceptible species and under conditions where control is more difficult, use higher specified rates. Deep-rooted perennial weeds, such as Canada thistle and field bindweed and many woody plants, usually require repeated applications for satisfactory control. Consult your State Agricultural Experiment stations or Extension Service Weed Specialists for recommendations from this label that best fit local conditions.

Use Precautions and Restrictions

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

Excessive amounts of 2,4-D in the soil may temporarily inhibit seed germination and plant growth.

Use of this product in certain portions of California, Oregon and Washington is subject to the January 22, 2004 Order for injunctive relief in Washington Toxics Coalition, et al. v. EPA, C01-0132C, (W.D. WA). For further information, please refer to EPA Web site: <http://www.epa.gov/esp>.

Spray Drift Management

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with active ingredients that require a coarse or coarser spray, apply only as a coarse or coarser spray (ASABE Standard 572) or a volume mean diameter of 385 microns or more for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a medium or more fine spray, apply only as a medium or coarser spray (ASABE Standard 572) or a volume mean diameter of 300 microns or more for spinning atomizer nozzles.

Wind Speed

Do not apply at wind speeds more than 15 mph. Apply this product only if the wind direction favors on-target deposition and there are not sensitive areas (including residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a medium spray, leave one swath unsprayed at the downwind edge of the treated field.

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if: a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include cotton, okra, flowers, fruit trees, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that may not be visible may injure susceptible broadleaf plants.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

Equipment

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Aerial Application

The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications.

When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this by adjusting the path of the aircraft upwind.

Ground Boom Application

Do not apply with a nozzle height greater than 4 feet above the crop canopy.

2,4-D esters may volatilize during conditions of low humidity and high temperatures. Do not apply during conditions of low humidity and high temperatures.

Mixing Directions

1. Fill the spray tank about half full with water, then add the required amount of Weed Rhap LV-4 with agitation, and finally the rest of the water.
Note: Weed Rhap LV-4 in water forms an emulsion that tends to separate unless the mixture is kept agitated.
2. If oil is added, first mix the Weed Rhap LV-4 and the oil and then add this mixture to the water. However, with adequate agitation, the oil can be added after Weed Rhap LV-4 is mixed with water.
3. If straight oil is used, a solution is formed and separation does not occur. Do not allow any water to get into the oil-herbicide mixture to avoid formation of an invert emulsion.

Note: Adding oil, wetting agent, or other surfactant to the spray mixture may increase effectiveness on weeds, but also may reduce selectivity in crops resulting in crop damage.

Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed specified application rates. Do not tank mix with another pesticide product that contains the same active ingredient as this product unless the label of either tank mix partner specifies the maximum dosages that may be used.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of this product and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing with Liquid Nitrogen Fertilizer

This product may be combined with liquid nitrogen fertilizer suitable for foliar application to accomplish broadleaf weed control and fertilization of corn, small grains or pastures in a single operation. Use Weed Rhap LV-4 in accordance with directions for these crops provided in this label. Use liquid fertilizer at rates specified by the supplier or Extension Service Specialist. Test for mixing compatibility by mixing spray ingredients in correct proportions in a clear glass jar before mixing in spray tank. A compatibility aid such as Unite or Compex may be needed in some situations. Compatibility is best with liquid fertilizer solutions containing only nitrogen. Mixing with N-P-K solutions may not be satisfactory, even with the addition of a compatibility aid. Pre-mixing Weed Rhap LV-4 with 1 to 4 parts water may help in situations when mixing difficulty occurs.

Fill the tank about half full with the liquid fertilizer, then add the required amount of Weed Rhap LV-4 with agitation. Maintain agitation and complete filling the tank with liquid fertilizer. Apply immediately and continue agitation in spray tank during application. Do not store the spray mixture. Application during very cold weather (near freezing) is not advisable.

Sprayer Equipment Clean-Out

To avoid injury to desirable plants, thoroughly clean equipment used to apply this product before re-use or applying other chemicals.

1. Rinse and flush application equipment thoroughly after use at least three times with water. Dispose of all rinse water by application to treatment area or apply to non-cropland area away from water supplies.
2. During the second rinse, add 1 quart of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Remove nozzles and screens and clean separately.
6. If equipment is to be used to apply another pesticide or agricultural chemical to a 2,4-D susceptible crop, additional steps may be required to remove all traces of 2,4-D, including cleaning of disassembled parts and replacement of hoses or other fittings that may contain absorbed 2,4-D.

Application Directions

Spray Volume

Apply with calibrated air or ground equipment using sufficient spray volume to provide adequate coverage of target weeds or as otherwise directed in specific use directions. For broadcast application, apply the specified rate of this product in a spray volume of 2 gallons or more per acre by air and 10 gallons or more per acre for ground equipment. Use low-pressure sprays to minimize drift. Where states have regulations that specify minimum spray volumes, they must be observed. In general, increase spray volume as crop canopy, height and weed density increase in order to obtain adequate spray coverage. Do not apply less than 2 gallons total spray volume per acre.

Application Rates

Generally, lower rates in specified rate ranges are satisfactory for more sensitive weeds species, when weeds are small, and when environmental conditions are favorable for rapid growth. Use higher rates in the specified rate range for less sensitive species and under less favorable growing conditions. For crop uses, do not mix with oil or other adjuvants unless specifically directed to do so on this label. Deep-rooted perennial weeds, such as Canada thistle and field bindweed and many woody plants, usually require repeated applications for effective control.

Spot Treatments

To prevent misapplication, apply spot treatments with a calibrated boom or with hand sprayer using a fixed spray volume per 1000 sq ft as indicated below.

Hand-Held Sprayers: Hand-held sprayers may be used for spot applications of Weed Rhap LV-4 in labeled crops. Take care to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based upon a treatment area of 1000 sq ft. Mix the amount of Weed Rhap LV-4 (fl oz or mL) corresponding to the desired broadcast rate in 1 gallon or more of spray. To calculate the amount of Weed Rhap LV-4 required for larger areas, multiply the table value (fl oz or mL) by the number of thousands of sq ft of area to be treated. An area of 1000 sq ft is approximately 10.5 X 10.5 yards (strides) in size.

Rate Conversion Table for Spot Treatment:

Label Broadcast Rate (pt/acre)						
1/2	2/3	3/4	1	2	3	4
Equivalent Amount of Weed Rhap LV-4 per 1000 sq ft						
1/5 fl oz (5.5 mL)	1/4 fl oz (7.3 mL)	1/3 fl oz (8.3 mL)	3/8 fl oz (11 mL)	3/4 fl oz (22 mL)	1 fl oz (33 mL)	1 1/2 fl oz (44 mL)

Band Application

Weed Rhap LV-4 may be applied as a band treatment. Use the formulas below to determine the appropriate rate and volume per treated acre.

Band width in inches

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Band rate per treated acre}$$

Band width in inches

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Band volume per treated acre}$$

Weeds Controlled

Annual or Biennial Weeds

beggarticks ¹	kochia	ragweed, common
bittercress, smallflowered ²	lambsquarters, common	ragweed, giant
bitterweed	lettuce, prickly ^{1, 2}	rape, wild
broomweed, common ¹	lettuce, wild	rocket, yellow
burdock, common	lupines	salsify, common ¹
buttercup, smallflowered ^{1, 2}	mallow, little ¹	salsify, western ¹
carpetweed	mallow, Venice ¹	shepherdspurse
cinquefoil, common ²	marshelder	sicklepod
cinquefoil, rough ²	morningglory, annual	smartweed (annual species) ^{1, 2}
cocklebur, common	morningglory, ivy	sneezeweed, bitter
coffeeweed	morningglory, woolly	sowthistle, annual
copperleaf, Virginia ²	mousetail ²	sowthistle, spiny
croton, Texas	mustards (except blue mustard)	spanishneedles
croton, woolly	parsnip, wild	sunflower
flixweed	pennycress (fanweed)	sweetclover
galinsoga	pepperweeds (<i>Lepidium</i> spp.) ^{1, 2}	tansymustard
geranium, Carolina ²	pigweeds (<i>Amaranthus</i> spp.) ¹	thistle, bull
hemp, wild	poorjoe	thistle, musk ¹
horseweed (marestalk) ²	primrose, common	thistle, Russian (tumbleweed) ¹
jewelweed	purslane, common ²	velvetleaf
jimsonweed	pusley, Florida	vetches
knotweed ¹	radish, wild	

Perennial Weeds

alfalfa ^{1, 2}	clover, red ^{1, 2}	ivy, ground ¹
artichoke, Jerusalem ¹	coffeeweed	Jerusalem-artichoke
aster, many-flower ¹	cress, hoary ¹	loco, bigbend
Austrian fieldcress ¹	dandelion ¹	nettles (including stinging) ¹
bindweed (hedge, field and European) ^{1, 2}	docks ¹	onion, wild ¹
blue lettuce	dogbanes ¹	pennywort
blueweed, Texas	eveningprimrose, cutleaf ²	plantains
broomweed	garlic, wild ¹	ragwort, tansy ¹
bullnettle ^{1, 2}	goldenrod	sowthistle, perennial
carrot, wild ¹	hawkweed, orange ¹	thistle, Canada ^{1, 2}
catnip	healal	vervains ¹
chicory	ironweed, western ²	wormwood

¹ These weeds are only partially controlled and may require repeat applications and/or use of higher specified rates of this product even under ideal conditions of application.

² This product may not be used to control this weed species in the state of California.

Crop Uses

Agricultural Use Requirements for Crops: For the following crop uses, follow PPE and Reentry instructions in the "Agricultural Use Requirements" section of this label.

Cereal Grains (Wheat, Barley, Millet, Oats, Rye) (Not Underseeded with Legumes)

Application Timing	Weed Rhap LV-4 (pt/acre)	Specific Use Directions
wheat, barley, millet, rye		Postemergence: Apply after crop is fully tillered (usually 4 to 8 inches tall), but not forming joints in the stem.
annual and biennial broadleaf weeds	1/2 to 2 ¹	
perennial broadleaf weeds	1 to 2 ¹	
oats		Postemergence: Apply after crop is fully tillered but (usually 4 to 8 inches tall), but not forming joints in the stem.
spring seeded	1/2	
fall seeded southern	3/4 to 1 1/4 ¹	
preharvest application (all cereals)	1	Apply using air or ground equipment to control weeds that could interfere with harvest, or to suppress perennial weeds. Apply when grain is in dough stage. Do not apply from early boot through the milk stage of growth.

¹ Use the lower rate in the rate range if small annual or biennial weeds are the major problem. Use the higher rate if perennial weeds or annual or biennial weeds are present which are considered to be hard to kill as determined by local experience. Up to 2.5 pints per acre may be applied postemergence to wheat, barley, rye and millet. However, there is greater risk of crop injury at rates greater than 1 1/3 pints per acre and such rates should be used only when the need for weed control justifies additional risk to the crop. Do not apply Weed Rhap LV-4 at the crop seedling stage of growth. Consult state agricultural experiment station or extension service weed specialists for recommendations or suggestions to fit local conditions.

Restrictions:

- Preharvest Interval: Do not apply within 14 days before hay or grain harvest.
- For postemergence: Do not apply more than 2.63 pints of Weed Rhap LV-4 (1.25 lbs. of acid equivalent) per acre per application.
- For preharvest: Do not apply more than 1.05 pints of Weed Rhap LV-4 (0.5 lb of acid equivalent) per acre per application.
- Do not apply more than 3.68 pints of Weed Rhap LV-4 (1.75 lb of acid equivalent) per acre per year.
- Do not make more than one postemergence application and one preharvest application per crop cycle.

Corn (Field Corn, Popcorn and Sweet Corn)

Application Timing	Weed Rhap LV-4 (pt/acre)	Specific Use Directions
preplant (burndown) preemergence field corn, popcorn, sweet corn	1-2	General: For best results, growth conditions should be favorable for active weed growth. Use high rate in rate range for less susceptible weeds, cover crops such as alfalfa, weeds in advanced stages of development, or under less favorable growth conditions. Preplant: Apply 7 to 14 days before planting corn to control emerged broadleaf weed seedlings or existing cover crops. Preemergence: Apply any time after planting, but before corn emerges to control broadleaf weed seedlings or existing cover crops. Do not use on light sandy soils.
postemergence field corn, popcorn, sweet corn annual broadleaf weeds		Apply when weeds are small and corn is less than 8 inches tall (to top of canopy). If corn is more than 8 inches tall, use drop nozzles to keep spray off of foliage. Treat perennial weeds when they are in bud to bloom stage. Do not tank mix with atrazine, oil or other adjuvants. Do not apply from tasseling to hard dough stage. Note: Corn treated with 2,4-D may become temporarily brittle. Wind or cultivation may cause stem breakage during the period of time that corn is brittle. Sweet Corn: To minimize potential for crop injury, use only lowest rate in rate range.
crop up to 8 inches tall	1/2-1	
crop 8 inches tall to tasseling (directed spray only)	1	
perennial broadleaf weeds	1	
preharvest field corn and popcorn only	up to 3	Apply after corn is in hard dough (or denting) stage. Do not apply to sweet corn.

Precautions:

- Corn hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties known to be tolerant to 2,4-D. Consult the seed company or your Agricultural Experiment Station or Extension Service Weed Specialist for this information.
- After postemergence application, delay cultivation for 8 to 10 days to allow corn to overcome any temporary brittleness.

Restrictions (Field Corn and Popcorn):

- Preharvest Interval: Do not apply within 7 days before grain or fodder harvest.
- For Preplant or preemergence: Do not apply more than 2.10 pints of Weed Rhap LV-4 (1.0 lb acid equivalent) per acre per application.
- For Postemergence, Do not apply more than 1.05 pints of Weed Rhap LV-4 (0.5 lb acid equivalent) per acre per application.
- For Preharvest: Do not apply more than 3.15 pints of Weed Rhap LV-4 (1.5 lb acid equivalent) per acre per application.
- Do not apply more than 6.3 pints of Weed Rhap LV-4 (3.0 lb acid equivalent) per acre per year.
- Do not make more than one preplant or preemergence application, one postemergence application, and one preharvest application per year.

Restrictions (Sweet Corn):

- Preharvest Interval: Do not apply within 45 days before harvest.
- For Preplant or preemergence: Do not apply more than 2.10 pints of Weed Rhap LV-4 (1.0 lb acid equivalent) per acre per application.
- For Postemergence, Do not apply more than 1.05 pints of Weed Rhap LV-4 (0.5 lb acid equivalent) per acre per application.
- Do not apply more than 3.1 pints of Weed Rhap LV-4 (1.5 lb acid equivalent) per acre per year.
- Do not permit meat or dairy animals to forage or graze treated area within 7 days after application.

- Do not make a postemergence application any less than 21 days after a prior application.
- Do not make more than one preplant or preemergence application, and one postemergence application per year.

Fallowland and Crop Stubble

Fallowland is idle land, postharvest to crops or between crops.

Type of Weeds	Weed Rhap LV-4 (pt/acre)	Specific Use Directions
annual broadleaf weeds	1-2	Use lower rate in rate range when weeds are small (2 to 3 inches tall) and conditions are favorable for active growth and a higher rate when weeds are larger and/or growing conditions are less favorable.
biennial broadleaf weeds	2-4	Apply when musk thistles or other biennial species are in the seedling to rosette stage and before development of flower stalks. Use lower rates in the spring during the rosette stage and the higher rate in the fall or when flower stalks have developed.
perennial broadleaf weeds	2-4	Apply when perennial weeds are in bud or bloom stage and actively growing. Do not disturb treated areas for at least two weeks after application or until top growth is dead.
wild garlic and onion in crop stubble	4	Apply to new regrowth of wild garlic or onion that occurs in the fall after harvest of other crops.

Precaution:

- For best weed control results, do not cultivate for at least two weeks after application or until top growth is dead.

Restrictions:

- Preharvest Interval: Do not apply within 7 days before cutting forage or hay from treated areas.
- Do not apply more than 4 pints of Weed Rhap LV-4 (2.0 lb acid equivalent) per acre per application.
- Do not apply more than 8 pints of Weed Rhap LV-4 (4.0 lb acid equivalent) per acre per year.
- Do not re-apply within 30 days of a previous application.
- Do not make more than two applications per season.

Planting in Treated Areas

Labeled Crops: Within 29 days after an application of this product, plant only those crops listed on this or other registered 2,4-D labels. Follow more specific limitations, if any, provided in directions for specific crops. Labeled crops may be at risk of crop injury or loss if planted soon after application, especially during the first 14 days. Consider degradation factors described below in weighing this risk.

Other Crops: All other crops may be planted 30 days or more after application without concern for illegal residues in the planted crop. However, under certain conditions, there may be a risk of injury to susceptible crops. Consider degradation factors described below in weighing this risk. Under average conditions, any crop may be planted without risk of injury if at least 90 days of soil temperatures above freezing have elapsed since application.

Degradation Factors: When planting into treated areas, the risk of crop injury is less if lower rates of product were applied and conditions following application have included warm, moist soil conditions that favor rapid breakdown of 2,4-D. Risk is greater if higher rates of product were applied and soil temperatures have been cold and/or soils have been excessively wet or dry in the days following application. Consult your local agricultural extension service for information about susceptible crops and typical conditions in your area.

Sorghum [Grain Sorghum (Milo) and Forage Sorghum]

Application Timing	Weed Rhap LV-4 (pt/acre)	Specific Use Directions
postemergence ¹		Apply when sorghum is 6 to 15 inches tall. If sorghum is more than 8 inches tall (top of canopy), use drop nozzles to keep spray off foliage. Do not use with oil or other adjuvants. Do not treat during boot, flowering or dough stage.
crop 6-8 inches tall	1/2-1 ¹	
crop 8-15 inches tall (directed spray only)	3/4-1	

¹ Temporary crop injury can be expected under conditions of high soil moisture and high air temperatures. If it is necessary to apply Weed Rhap LV-4 under these conditions, use no more than 2/3 pint per acre.

Precautions:

- Sorghum hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties known to be tolerant to 2,4-D. Consult the seed company or your agricultural experiment station or extension service weed specialist for this information.

Restrictions:

- Preharvest Interval: Do not apply within 30 days of grain harvest.
- Do not apply more than 1 pint of Weed Rhap LV-4 (0.5 lb of acid equivalent) per acre per crop cycle.
- Do not permit meat or dairy animals to consume treated crop as fodder or forage for 30 days after application.
- Do not apply more than one postemergence application per year.

**Soybeans (Preplant Burndown Application Only)
(Not for Use in California)**

Application Timing	Weed Rhap LV-4 (pt/acre)	Specific Use Directions
preplant (burndown)	3/4-1	Apply not less than 7 days before planting soybeans. See Precautions and Restrictions below.
	1-2	Apply not less than 15 days before planting soybeans. See Precautions and Restrictions below.
<p>General: Use Weed Rhap LV-4 to control emerged broadleaf weeds or existing cover crops. For best results, apply when weeds are small and actively growing. Use the higher rate in the rate range for larger weeds and when perennials are present. Compatible crop oil concentrates, agricultural surfactants and fluid fertilizers approved for use on growing crops may be added to spray mixtures to increase the herbicidal effectiveness on certain weeds. Read and follow all directions and precautions on this label and on the label of each product added to the spray mixture.</p>		

Precautions:

- **Important Notice:** Unacceptable injury to soybeans planted in treated fields may occur. Whether soybean injury occurs and the extent of such injury will depend upon weather (temperature and rainfall) from herbicide application until soybean emergence and agronomic factors, such as the amount of weed vegetation and previous crop residue present at the time of application. Injury is more likely under cool rainy conditions and where there is less weed vegetation and crop residue present.
- In treated fields, plant soybean seed as deep as practical, but not less than 1 inch deep. Adjust the planter, if necessary, to ensure that planted seed is adequately covered.

Restrictions:

- Do not disturb treated soil through tillage between application and planting of soybeans.
- Do not use on sandy soils with less than 1% organic matter.
- Do not make more than one application per season regardless of the application rate used.
- Do not apply Weed Rhap LV-4 as a preplant application in soybeans unless you are prepared to accept the results of soybean injury, including possible stand loss and/or yield reduction.
- During the growing season following application, do not replant treated fields with crops other than those labeled for use with Weed Rhap LV-4.
- Do not apply more than 2 pints of Weed Rhap LV-4 (1.0 lb acid equivalent) per acre per year.

Forestry, Rangeland, Established Pasture, and Non-Cropland Uses

Agricultural Use Requirements for Forests (Except Tree Injection Use): For use in forests, follow PPE and Reentry instructions in the "Agricultural Use Requirements" section of this label.

Agricultural Use Requirements for Rangeland, Pasture, Forest (Tree Injection Only) and Non-Cropland Areas: When this product is applied to rangeland and established pastures not harvested for hay or seed; non-cropland areas, and when applied by tree injection method only in forest sites, follow reentry requirements given in the "Non-Agricultural Use Requirements" section of this label.

Forests

Forest site preparation, forest roadsides, brush control, established conifer release (including Christmas trees and reforestation areas)

Method of Application	Weed Rhap LV-4	Specific Use Directions
annual weeds	2-4 pt/acre	Apply before the bud stage when weeds are small and growing actively. Apply before flower stalks appear, when biennial and perennial species are in the seedling to rosette stage. For difficult to control perennial broadleaf weeds and woody species, use up to 4 quarts of Weed Rhap LV-4 plus 1 to 4 quarts of Garlon® 3A herbicide per acre. For conifer release, apply in early spring before budbreak of conifers when weeds are small and actively growing.
biennial and perennial broadleaf weeds and susceptible woody plants	4-8 pt/acre	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	Note: To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rate specified for this treatment site and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or

		backpack sprayer. To improve coverage, add a nonionic surfactant. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
conifer release: species such as white pine, ponderosa pine, jack pine, red pine, black spruce, white spruce, red spruce, and balsam fir	1 1/2-3 qt/acre	To control competing hardwood species such as alder, aspen, birch, hazel, and willow, apply from mid- to late summer when growth of conifer trees has hardened off and woody plants are still actively growing. Apply with ground or air equipment using sufficient spray volume to ensure complete plant coverage. Because this treatment may cause occasional conifer injury, do not apply if such injury cannot be tolerated.
directed spray: conifer plantations including pine	4 qt/100 gal	Apply when brush or weeds are actively growing by directing the spray so as to avoid contact with conifer foliage. Apply in oil, oil-water, or water carrier in a spray volume of 10 to 100 gallons per acre.
basal spray (may also be used in rangeland, pastures, and noncropland)	8 qt/100 gal or	Thoroughly wet the base and root collar of all stems until the spray begins to accumulate around the root collar at the ground line. Wetting stems with the mixture may also aid in control.
surface of cut stumps (may also be used in rangeland, pastures, and noncropland)	2.5 fl oz/gal of water	Apply as soon as possible after cutting trees. Thoroughly wet the cambium layer of the cut surface, being careful to wet the entire circumference.
frill and girdle (may also be used in rangeland, pastures, and noncropland)		Cut frills (overlapping V-shaped notches cut downward through the bark in a continuous ring around the base of the tree) using an axe or other suitable tool. Saturate the freshly cut frills with the 2,4-D mixture.
tree injection (may also be used in rangeland, pastures, and noncropland)	1-2 mL per injection site	To control and prevent resprouting of unwanted hardwood trees such as elm, hickory, oak, and sweetgum in forests and other noncrop areas, apply by injecting at a rate of 1 mL of undiluted Weed Rhap LV-4 per inch of trunk diameter as measured at breast height (DBH), approximately 4 1/2 ft above the ground. Injection sites, however, should be as close to the root collar as possible and the injection bit must penetrate the inner bark. One application may be made per year, but for best results apply between May 15 and October 15. Do not treat maples during the spring sap flow. For hard to control species such as ash, maple, and dogwood, use 2 mL of undiluted Weed Rhap LV-4 per injection site. Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.

Restrictions:

- Do not allow sprays to contact conifer shoot growth (current year's new growth) or injury may occur.
- Do not apply to nursery seedbeds.
- For conifer release, do not use on plantations where larch is among the desired species.
- Limited to 1 broadcast application per year.
- For broadcast applications, do not apply more than 8 pints of Weed Rhap LV-4 (4.0 lb acid equivalent) per acre per 12-month period.
- Limit of one basal spray or cut surface application per year
- For basal spray, cut surface stumps, and frill applications, do not apply more than 16.84 pints of Weed Rhap LV-4 (8 lb of acid equivalent) per 100 gallons of spray solution.
- Injection:
- Limit to one injection application per year. Maximum of 2 mL of Weed Rhap LV-4 per injection site.

Rangeland, Established Grass Pastures (Including Perennial Grasslands not in Agricultural Production, Such as Conservation Reserve Program Acres)

Target Weeds or Woody Plants	Weed Rhap LV-4 (pt/acre)	Specific Use Directions
annual broadleaf weeds	2	For best results, apply before the bud stage when weeds are small and growing actively. Apply when musk thistles or other biennial species are in the seedling to rosette stage and before flower stalks appear. Refer to the Weeds Controlled section for a listing of susceptible weed species and weeds that may be only partially controlled and require repeat applications and/or use of higher specified rates, even under ideal conditions of application.
biennial and perennial broadleaf weeds	2-4	
spot treatment to control broadleaf weeds	1.5 fl oz/gal of Weed Rhap LV-4 per 1,000 sq. ft.	Note: To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rates specified for this treatment site and spray to thoroughly wet all foliage. To improve coverage, add a nonionic surfactant. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
basal spray, cut surface, frill and girdle, and tree injection application methods		Refer to the Forests section for specific use instructions for these application methods.
wild garlic and wild onion	4	Make two applications per year starting in late fall or early spring.
broadleaf weed control in newly sprigged coastal bermudagrass	2-4	Applications may be made postemergence. Follow specific use directions for Rangeland and Established Grass Pastures above.
sand shinnery oak sand sagebrush	2	Sand shinnery oak: Apply by aircraft between May 15 and June 15. Sand sagebrush: Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre.
big sagebrush rabbitbrush	4	Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre. Re-treatment may be needed.
chamise, manzanita, buckbrush, coastal sage, coyotebrush, and chaparral species.	4	Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use water or a 1:4 oil-water emulsion as carrier and a spray volume of 5 to 10 gallons per acre. Re-treatment may be needed.
southern wild rose		Broadcast: Apply in a spray volume of 5 gallons or more per acre by aircraft or 10 gallons or more per acre by ground equipment. Spot treatment: Apply when foliage is well developed. Thorough coverage is required. To improve coverage, add a nonionic surfactant. Two treatments or more may be required. Do not exceed 4 pints per acre per application.
broadcast application	up to 4	
spot treatment	1.5 fl oz/gal of Weed Rhap LV-4 per 1,000 sq. ft.	
CRP acres	For program lands such as CRP, consult program rules to determine whether grass or hay may be used. The more restrictive requirements of the program rules or this label must be followed.	

Restrictions:

- Preharvest Interval: Do not apply within 7 days before forage or hay harvest. If grass is to be cut for hay, Agricultural Use Requirements for the Worker Protection Standard are applicable.
- Do not use on bentgrass, alfalfa, clover, or other legumes.
- Do not use on newly seeded areas until grass is well established.
- Do not use from early boot to milk stage where grass seed production is desired.
- For susceptible annual and biennial weeds: Do not apply more than 2 pints of Weed Rhap LV-4 (1 lb acid equivalent) per acre per application.

- For moderately susceptible biennial and broadleaf weeds, difficult to control weeds and woody plants: Do not apply more than 4 pints of Weed Rhap LV-4 (2 lb acid equivalent) per acre per application.
- Spot Treatment: Do not apply more than 4 pints of Weed Rhap LV-4 (2 lb acid equivalent) per acre per application.
- Do not make more than two applications per year
- The maximum application rate is 8 pints of Weed Rhap LV-4 (4 lb acid equivalent) per acre per year from all combined sources.
- The minimum re-treatment interval is 30 days.

Non-Cropland

fencerows, hedgerows, roadsides, rights-of way, utility power lines, and railroads

Treatment Site or Method of Application	Weed Rhap LV-4 (pt/acre)	Specific Use Directions
annual broadleaf weeds	2-4	Apply before the bud stage when annual weeds are small and growing actively. Biennial and perennial weeds should be rosette to bud stage, but not flowering at the time of application. For difficult to control perennial broadleaf weeds and woody species, tank mix up to 4 quarts of Weed Rhap LV-4 plus 1 to 4 quarts of Garlon 3A per acre. Oil or wetting agent may be added to the spray, if needed, for increased effectiveness. Ground application: For high volume sprays, apply a total spray volume of 100 to 400 gallons per acre. For low volume sprays, apply in a total spray volume of 10 to 100 gallons per acre. Helicopter: Apply a total spray volume of 5 to 30 gallons per acre.
biennial and perennial broadleaf weeds	4	
susceptible woody plants on rights-of-way	4-8	
spot treatment to control broadleaf weeds	1.5 fl oz of Weed Rhap LV-4 per 1,000 sq. ft.	Note: To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rates specified for this treatment site and spray to thoroughly wet all foliage. To improve coverage, add a nonionic surfactant. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
basal spray, cut surface, frill and girdle, and tree injection application methods		Refer to the Forests section for specific use instructions for these application methods.
southern wild rose		Broadcast: Apply in a spray volume of 5 gallons or more per acre by aircraft or 10 gallons or more per acre by ground equipment. Apply when foliage is well developed. Thorough coverage is required. To improve coverage, add a nonionic surfactant. Two treatments or more may be required.
broadcast application	up to 4	
spot treatment	1.5 fl oz of Weed Rhap LV-4 per 1,000 sq. ft.	

Precautions:

- Bentgrass, St. Augustine, clover, legumes and dichondra may be severely injured or killed by this treatment.

Restrictions:

- Do not apply to newly seeded areas until grass is well established.
- **Woody plants:** Do not apply more than 8 pints of Weed Rhap LV-4 (4 lb of acid equivalent) per acre per year. Do not make more than one application per season.
- **Annual and perennial weeds:** Do not apply more than 4 pints of Weed Rhap LV-4 (2 lb of acid equivalent) per acre per application or make more than two applications per season.
- Do not reapply to a treated area within 30 days of a previous application.

Turfgrass Uses

Grasses Grown for Seed or Sod

Agricultural Use Requirements: When used in grass grown for seed or sod farms, follow PPE and reentry instructions in the "Agricultural Use Requirements" section of this label.

Treatment Site and Application Timing	Weed Rhap LV-4 (pt/acre)	Specific Use Directions
grasses grown for seed postemergence use		Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth. Do not apply to newly seeded grasses until well established (five-leaf stage or later) and then use a maximum of 1 pint per acre. Cool season grasses are more tolerant to higher rates. Do not apply to grass in the early boot through milk stage if seed production is desired. When grass is well established, higher rates of up to 4 pints per/acre may be applied for control of hard to kill annual or perennial weeds.
seedling grass five-leaf stage or later	3/4-1	
well-established grasses	1-4	
sod farms postemergence	2-4	Deep-rooted perennials, such as bindweed and Canada thistle, may require a repeat application. Avoid mowing sod farms for 1 to 2 days before or after application. Delay irrigation until the day following application.

Precautions:

- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall, and with fall application, reseed in the spring.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days before cutting grass for hay from treated areas.
- Do not use on creeping grasses, such as bentgrass, except for spot treatment.
- Do not use on susceptible southern grasses, such as St. Augustinegrass.
- Do not use on dichondra or other herbaceous groundcovers; legumes may be damaged or killed.
- Do not reapply to a treated area within 21 days of a previous application.
- Do not apply more than 4 pints of Weed Rhap LV-4 (2 lb acid equivalent) per acre per application.
- Do not make more than two applications of Weed Rhap LV-4 per year.
- Do not apply more than 8 pints of Weed Rhap LV-4 (4.0 lb acid equivalent) per acre per year from all combined sources.

Ornamental Turfgrass (Excluding Grasses Grown for Seed or Sod Farms)

includes lawns, golf courses, cemeteries and parks, airfields, roadsides and vacant lots

Use Requirements for Ornamental Turf Areas: When this product is applied to ornamental turf areas, follow PPE and reentry instructions in the "Non-agricultural Use Requirements" section of this label.

Treatment Site and Application Timing	Weed Rhap LV-4 (pt/acre)	Specific Use Directions
ornamental turfgrass postemergence		Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth.
seedling grass (five-leaf stage or later)	3/4-1	
well-established turfgrass	2-3	
biennial and perennial broadleaf weeds	3	Deep-rooted perennial weeds, such as bindweed and Canada thistle, may require repeat applications. Do not apply to newly seeded grasses until well established (five-leaf stage or later) and then use a maximum of 1 pint per acre. Cool season turfgrasses are tolerant of higher rates.

Precautions:

- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall, and with fall application, reseed in the spring.

Restrictions:

- Do not use on creeping grasses, such as bentgrass, except for spot treatment.
- Do not use on susceptible southern turfgrasses, such as St. Augustinegrass.

- Do not use on dichondra or other herbaceous groundcovers; legumes may be damaged or killed.
- Do not make more than two broadcast applications per treatment site per year (does not include spot treatments).
- Do not apply more than 3 pints of Weed Rhap LV-4 (1.5 lb acid equivalent) per acre per application.
- Do not apply more than 6 pints of Weed Rhap LV-4 (3.0 lb acid equivalent) per acre per season from all combined sources.

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

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.

Nonrefillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons:

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Nonrefillable containers larger than 5 gallons:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

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

Read the Conditions of Sale—Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.

The directions on this label are believed to be reliable and must 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 or 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. To the extent consistent with applicable law, 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 shall be limited to, at Helena Chemical Company's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent allowed by law, 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.