

74530-48

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Washington, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

APR 20 2011

Bert Volger
Helm Agro US, Inc.
8275 Tournament Drive, Suite 340
Memphis, TN 38125

Subject: Label Amendment (incorporate supplemental label)
Helmquat 3SL
EPA Reg. No. 74530-48
Application Dated March 22, 2011

Dear Mr. Volger:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable.

A stamped copy of your label is enclosed for your records. This label supersedes all previously accepted labels. You must submit one (1) copy of the final printed label before you release the product for shipment. Products shipped after eighteen (18) months from the date of this letter or the next printing of the label, whichever occurs first, must bear the new revised label. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA §6(e). Your release for shipment of the product constitutes acceptance of these conditions.

If you have any questions, please contact Mindy Ondish at (703)605-0723 or at ondish.mindy@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Kable Bo Davis".

Kable Bo Davis
Product Manager 25
Herbicide Branch
Registration Division (7505P)

RESTRICTED USE PESTICIDE
DUE TO ACUTE TOXICITY
FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

HELMQUAT 3SL

A Weed, Grass and Harvest Aid Desiccant/ Defoliant Herbicide

| | | |
|---|--|-----------------|
| Active Ingredient | | % BY WT. |
| Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride)..... | | 43.8% |
| Other Ingredients..... | | 56.2% |
| Total..... | | 100.0% |

Contains 3.0 pounds paraquat cation per gallon as 4.14 pounds salt per gallon.
Contains stench (odor) and emetic.

EPA Reg. No. 74530-48
Net Contents: 2.5 gallons

EPA Est. No. 62171-MS-01

KEEP OUT OF REACH OF CHILDREN
DANGER/PELIGRO
POISON



ACCEPTED
APR 20 2011
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 74530-48

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

- NEVER PUT INTO FOOD, DRINK, OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTIONS AS PRESCRIBED IN FIRST AID, SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE STENCHING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.
- DO NOT USE OR STORE IN OR AROUND THE HOME.

| FIRST AID | |
|-------------------------------|--|
| If swallowed: | <ul style="list-style-type: none"> • SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite, or Fuller's Earth. • Call a poison control center or doctor immediately for treatment advice. • Do not give anything by mouth to an unconscious person. • Have person sip glass of water if able to swallow. • Do not induce vomiting unless told to by a poison control center or doctor. |
| If inhaled | <ul style="list-style-type: none"> • Move person to fresh air. • The odor of this product is from the stenching agent, which has been added, not from the paraquat. • If person is not breathing, call 911 or an ambulance • Call a poison control center or doctor for further treatment advice. |
| In eyes: | <ul style="list-style-type: none"> • 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. |
| If on skin or clothing | <ul style="list-style-type: none"> • Take off contaminated clothing • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for further treatment advice. |

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
Note to Physician: Administer either activated charcoal (100g for adults or 2g/kg body weight in children)/ **NOTE:** The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.

HOTLINE NUMBERS
For Chemical Emergency call CHEMTREC 1-800-424-9300

Manufactured for:



Helm Agro US, Inc.
8275 Tournament Drive, Suite 340
Memphis, TN 38125
Tel. 901-312-1525

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER/PELIGRO
POISON**

May be fatal if swallowed. Fatal if inhaled. Wear a dust/mist respirator as specified in the PPE section of this label. Corrosive. Causes irreversible eye damage. Wear protective eyewear. Harmful if absorbed through skin. Do not breathe spray mist. Do not get in eyes, or on skin or clothing. **IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

Personal Protective Equipment (PPE)

Applicators and other handlers (other than mixers and loaders) must wear:

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear (goggles, face shield, safety glasses)
- Chemical Resistant Gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC), or Viton.

A NIOSH approved particulate filtering respirator equipped with N, R or P class filter media. The respirator should have a NIOSH approval number prefix TC-84A.

Mixers And Loaders Must Wear:

- Long-sleeved shirt and long pants
- Chemical resistant apron
- Shoes plus socks
- A NIOSH approved particulate filtering respirator equipped with N, R or P class filter media. The respirator should have a NIOSH approval number prefix TC-84A. Chemical Resistant Gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC), or Viton.
- Face shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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, 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 requirement may be reduced or modified as specified in the WPS.

| |
|--|
| <p>User Safety Recommendations USERS SHOULD:</p> <ul style="list-style-type: none"> • 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. |
|--|

ENVIRONMENTAL HAZARDS

This product is toxic to wildlife. 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 contaminate water when cleaning equipment or disposing of equipment wash waters.

HELMQUAT 3SL is a contact herbicide than desiccates all green plant tissue. Paraquat dichloride, the active ingredient in this product is toxic to nontarget crops and plants if off-target movement occurs because it desiccates all green plant tissue. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Refer to the local and state laws, regulations, guidelines, and spray drift information contained in the "Directions for Use" section for proper application to avoid off-target movement. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion.

PHYSICAL AND CHEMICAL HAZARDS

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

DIRECTIONS FOR USE

RESTRICTED USE PESTICIDE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. 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. **DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSES, OR PLAYGROUNDS.**

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.

Chemical Fallow, Early Postemergence Broadcast in Peanuts and Dormant Season Applications, and "Between Cutting"

Applications in Alfalfa: Do not enter or allow worker entry into the treated areas during the restricted-entry interval (REI) of 12 hours.

For Harvest Aid and Desiccation Applications, Preplant or Preemergence (Broadcast or Banded), and Postemergence Directed

Spray: Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 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
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC), or Viton

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 others to enter the treated areas until sprays have dried. AVOID working in spray mist.

Keep all unprotected persons out of operating areas or vicinity where there may be danger of drift. Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

SPRAY DRIFT INFORMATION

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
 2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.
- Where states have more stringent regulations, they shall be observed.

Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see **Wind, Temperature and Humidity, and Temperature Inversions**).

Controlling Droplet Size

- Volume—Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure—Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles—Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation—Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type—Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications must not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance must increase with increasing drift potential (higher wind, smaller drops, etc.).

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application must be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications must not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide must only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

PRODUCT INSTRUCTIONS AND INFORMATION

Formulation: The HELMQUAT 3SL formulation contains 3 pounds of active ingredient per gallon. It has a strong nontoxic odor and contains an emetic which will cause vomiting if the product is accidentally swallowed. The strong odor is intentionally part of the formulation to help prevent accidental ingestion of HELMQUAT 3SL.

Mode of Action: HELMQUAT 3SL is a contact herbicide that is rapidly absorbed by green plant tissue. Once absorbed the active ingredient interacts with the photosynthetic process to produce superoxides that destroy the plant cells. HELMQUAT 3SL must be applied to green plant tissue to be effective, therefore, excellent and complete coverage of all green foliage is necessary for effective weed control and effective leaf drop, desiccation and defoliation. Activity of HELMQUAT 3SL is reduced when it is applied to drought stressed weeds, weeds with little green foliage or to the mature woody bark of trees and vines. HELMQUAT 3SL is tied up rapidly by clay soils and organic matter so it has no residual soil activity.

Spectrum of Activity: As a contact herbicide, HELMQUAT 3SL will control most small broadleaf and grass weeds, as well as suppress perennial weeds through the destruction of green foliage. HELMQUAT 3SL can also be used at harvest as a desiccant or defoliant.

Best weed control is achieved when HELMQUAT 3SL is applied to emerged weeds that are still small (1 to 6 inches tall). Larger weeds are more difficult to control. Allow weeds that have been grazed or mowed to grow to 2 to 4 inches tall before applying HELMQUAT 3SL. Also, during harvesting of forage or grain crops before spraying, weeds present in the field are also cut. Therefore, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height allowing sufficient green foliage to remain for applications.

When HELMQUAT 3SL is used for control of grass cover crops or volunteer cereals, application should be made prior to tillering or after the boot stage especially with a wheat cover crop or volunteer wheat. Application of HELMQUAT 3SL between tillering and the boot stage may not provide acceptable control. HELMQUAT 3SL will not provide complete control of perennial cover crops.

Replanting: Rotational crops may be planted after the last application of HELMQUAT 3SL. Since HELMQUAT 3SL has no soil activity, crops planted after the last application are not affected.

Spray Adjuvants: It is important to always add a nonionic surfactant (NIS) or crop oil concentrate (COC) with HELMQUAT 3SL. Otherwise, reduced activity of HELMQUAT 3SL will result.

For ground applications, use a NIS containing 75% or more active ingredient at 0.125% v/v (1 pt./100 gals), OR use a NIS containing 50-74% active ingredient at 0.25% v/v (2 pts./100 gals.) of finished spray volume. If a COC is used, select a nonphytotoxic COC containing 15-20% approved emulsifier at 1.0% v/v (1 gal./100 gals) of finished spray volume. A COC should not be used with HELMQUAT 3SL when it is applied as a cotton harvest aid.

For aerial applications, use a NIS at 0.25% v/v (2 pts./100 gals) of the finished spray volume. Or, use a COC at 1 pint per acre. A COC should not be used with HELMQUAT 3SL when it is applied as a cotton harvest aid.

Weather Considerations: Although HELMQUAT 3SL is effective under most environmental conditions, some conditions such as cool weather (below 55° F), cloudy or overcast weather will slow its activity. HELMQUAT 3SL is rapidly absorbed by plant foliage and becomes rainfast soon after application. If rain comes 30 minutes or more after application, activity of HELMQUAT 3SL will not be affected.

Dosage: Specific application rates for HELMQUAT 3SL are provided below under APPLICATION INSTRUCTIONS. Always follow the specified rates listed for each use. Higher label rates should be used to control or suppress large or dense weeds. Also, when using HELMQUAT 3SL as a harvest aid, use the higher label rates when crop vegetation is dense. For broadcast application with backpack sprayers, do not exceed more

than 0.50 lb ai/A in a minimum of 30 gallons of spray solution per acre.

Application: Thorough coverage of target weeds is critical for good weed control since HELMQUAT 3SL is a contact herbicide. Thorough coverage is also critical for good crop desiccation and defoliation. Unacceptable weed control, desiccation or defoliation will result from poor coverage and application to large, stressed or mown weeds. Specific application instructions are provided below.

Spray volume varies with different uses. Always follow the spray volume instructions provided in the APPLICATION INSTRUCTIONS. Only minimum spray volumes are provided. Increase spray volumes to insure thorough coverage of target weeds or plants without runoff from the foliage. If a spray volume of 20 gallons of spray carrier per acre is used, target weeds should not exceed 6 inches tall.

Spray carrier selection is very important to maximize effectiveness of HELMQUAT 3SL. Always use clean water (no mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers with HELMQUAT 3SL. Fertilizers or water containing clay can inactivate HELMQUAT 3SL. It is important, therefore, to never use muddy water or suspension type fertilizers containing clay as the spray carrier. Use the higher rate of HELMQUAT 3SL and surfactant when the spray carrier is a clear liquid fertilizer containing high levels of phosphate. Always use a nonionic surfactant when using liquid fertilizers such as 28% N as a spray carrier. Liquid fertilizer carriers cannot substitute for surfactant.

Nozzle selection is very important when making applications of HELMQUAT 3SL. Flat-fan nozzles provide the most effective application, whereas flood nozzles are usually not as good because they produce large uneven droplets. Inadequate coverage and reduced weed control can occur if flood nozzles are used. Only use flat-fan nozzles if the spray carrier is less than 20 gallons per acre. Information on nozzles, pressures and setup are shown in the table below.

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

When HELMQUAT 3SL is applied at less than 10 gallons of finished spray volume per acre, a drift control or spray deposition additive should be used. Refer to the additive label for use directions.

Table 1. Application Setup*

| Nozzle Type | Maximum Size | Spray Pressure (at nozzle) | Maximum Nozzle Spacing | Direction Of Spray Pattern | Maximum Speed | Spray Overlap (at each edge) |
|-------------|--------------|----------------------------|------------------------|----------------------------|---------------|------------------------------|
| Flat-Fan | 8 | 30-50 psi | 30" | Down | 10 mph | 30% |
| Flood | 15 | 30-50 psi | 40" | Down | 10 mph | 50% |

*Reduced weed control result if nozzles, pressures or setups different from those in this table are used.

Spot Spraying: Sometimes it is necessary to spray small areas with labeled applications. To accomplish this, it may be necessary to mix small quantities of HELMQUAT 3SL.

| If the Broadcast rate per acre for HELMQUAT 3SL Herbicide is: | Add the Following Amount of HELMQUAT 3SL Herbicide to 1 gallon of water |
|---|---|
| 1 1/2 pints | 1/3 fluid ounce |
| 2 pints | 3/8 fluid ounce |
| 2 1/2 pints | 1/2 fluid ounce |
| 3 pints | 2/3 fluid ounce |

Always add 1/3 to 1/2 fl oz of NIS to each gallon of spray. During the spot spraying operation, spray plants thoroughly in order to wet the foliage, but not to the point of runoff.

HOODED SPRAYERS AND WICK BAR APPLICATORS

This product can be used in hooded sprayers and wick bar applicators for post emergent control of escaped weeds in cotton and soybean such as pigweed and other weeds listed in the weeds controlled section of the label. This product will injure or kill any plant surface it contacts so do not allow the product to be sprayed or drip onto the crop or desirable vegetation. Care must be taken to keep hoods and wick bars in good operating condition. This product will control glyphosate resistant weeds.

USE INSTRUCTIONS: This product will control many troublesome weeds when applied under a hood or in a wick bar in a manner where the target weed is contacted and the desirable vegetation or crop is protected.

HOODED SPRAYERS: Apply this product at a rate of 1 pint per acre in at least 5-10 gallons of water. Use a spray surfactant of at least 80% active at a rate of 0.25% v/v, or a crop oil concentrate at 0.5% v/v. Do not allow spray to come into contact with desirable crop or vegetation. Take care to get as much coverage on the target weed as possible.

WICK BAR APPLICATORS: Apply this product thru a wick bar applicator in a solution of at least 50% v/v. Do not allow the solution to drip onto desirable vegetation. Use a surfactant of at least 80% activity at a rate of 0.25%.

TANK MIX COMBINATIONS FOR HOODED SPRAYER APPLICATION: This product may be applied in combination with products such as Caparol® (prometryn), Diuron, Cotoran® (fluometuron). See the manufacturer's label for appropriate rates by weed species and weed size.

PRECAUTIONS/RESTRICTIONS: DO NOT ALLOW THESE APPLICATIONS TO CONTACT DESIRABLE VEGETATION OR CROPS. DO NOT MAKE MORE THAN 3 APPLICATIONS PER YEAR.

Tank Mixing for Improved Burndown of Difficult Weeds and Residual Weed Control: HELMQUAT 3SL can be tank mixed with certain other herbicides in order to obtain greater control of hard to control weeds. Best control is obtained when other photosynthetic inhibitor (PSI) herbicides are added with HELMQUAT 3SL. These herbicides will cause the activity of HELMQUAT 3SL to be slower, thus allowing it more time to distribute throughout the treated leaf. Weed control will generally be greater than when HELMQUAT 3SL is applied alone.

The following PSI herbicides may be tank mixed with HELMQUAT 3SL: AAtrex® Herbicide or other atrazine-containing products; Bleep MAGNUM® Herbicide; Bicep Lite II MAGNUM® Herbicide; Canopy® Herbicide; Lariat® Herbicide; Lexone® Herbicide; Linex® Herbicide; Lorox® Herbicides; Lorox Plus® Herbicide; MANA Parallel™ Herbicide; MANA Parallel™ Plus Herbicide; MANA Parallel™ PCS Herbicide; Princep® Herbicide; Sencor® Herbicide or other metribuzin-containing products; and Triangle™ Herbicide. Be sure to read the respective product label(s) for rates of application, directions for use, limitations, precautions, and for a list of weeds controlled.

Control of the following difficult to control broadleaf and grassy weeds will be enhanced by the addition of a PSI herbicide with HELMQUAT 3SL: barnyardgrass, broadleaf signalgrass, cheatgrass, cocklebur, fall panicum, giant ragweed, knotweed, Kochia, lambsquarters, malva (cheeseweed), marehail, morningglory, Pennsylvania smartweed, perennial weeds (suppression only), prickly lettuce, sedges, tansymustard, velvetleaf and volunteer wheat. For best results, make a second application.

Improved control of perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc. or difficult to control annual broadleaf weeds such as giant ragweed or morningglory will result when HELMQUAT 3SL is tank mixed with 2,4-D ester (low volatile), 2,4-DB, or Banvel® Herbicide. Reduced grass control may result if the amine formulation of 2,4-D is applied as a tank mix with HELMQUAT 3SL.

Mixing Order: When tank mixing other products with HELMQUAT 3SL the following order should be followed: (1) fill spray tank 112 full with clean water or other approved carriers as discussed above; (2) begin tank agitation and continue agitation throughout the mixing and spraying operations; (3) add dry formulations (WP, DF, WDG, etc.) to the tank; (4) add liquid formulations (SC, EC, L, F, etc.) to the tank; (5) add HELMQUAT 3SL to the tank; (6) add spray surfactant to the tank; and (7) fill the remainder of the spray tank. Carefully read the labels of other pesticide products for mixing directions and precautions that may be different. Physical compatibility of any tank mix combination of HELMQUAT 3SL with other herbicides should be checked by performing a jar test.

PRODUCT PRECAUTIONS AND RESTRICTIONS

Equipment: Since HELMQUAT 3SL is corrosive to aluminum, all aluminum spray equipment and aluminum aircraft structures exposed to spray solution or spray drift should be flushed with water immediately after use.

Dusty Leaf Surfaces: If weed or plant leaves are extremely dusty (due to high winds, equipment tires, etc.), activity of HELMQUAT 3SL can be reduced. Avoid applying HELMQUAT 3SL in extremely dusty conditions.

Limitations and Precautions:

1. Do not graze livestock in treated fields or feed treated foliage in cotton when using HELMQUAT 3SL for a cotton harvest aid.
2. Use around home gardens, schools, recreational parks, or play grounds is PROHIBITED.
3. Do not apply to soils lacking clay, i.e., peat, muck, pure sand and artificial planting media if using HELMQUAT 3SL in preplant or preemergence (to the crop) uses.
4. Prepare seedbeds and plantbeds well ahead of planting and treatment to permit maximum weed and grass emergence prior to treatment.
5. Do not disturb the soil any more than necessary during seeding or transplanting.
6. Use caution when applying HELMQUAT 3SL for preplant weed control over the top of plastic mulch. Transplants may be damaged if they come in contact with treated plastic mulch. Sprinkler irrigation or rainfall may be needed to wash off the herbicide from the plastic to prevent damage to the crop.
7. HELMQUAT 3SL will not control or suppress broadleaf or grassy weeds that emerge after treatment.
8. Unless otherwise indicated crop plants that are emerged at the time of application and contacted by sprays of HELMQUAT 3SL will be injured or killed.

APPLICATION INSTRUCTIONS

The following tables contain information on use patterns, rates, minimum spray volumes, preharvest intervals, and other precautions, restrictions and comments specific to each crop. Read and follow directions carefully.

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|--|---------------------------------------|---|
| ALFALFA New Seedlings (CA only) | 0.7 – 1.3 pts. Also see Table 2 below | During late winter or early spring, make a broadcast application using the specified rate in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Alfalfa foliage present at the time of application will be burned; stands will be reduced and replanting may be necessary. |
| | | <ul style="list-style-type: none"> • Do not make more than 1 application per year. • Do not cut or harvest within 70 days of application, • Do not apply to seedling alfalfa grown for seed. |
| ALFALFA (No-till or conventional planting) (preplant or preemergence) | 1.7 – 2.7 pts. | Apply preplant or preemergence either broadcast or banded over the row using the specified rate in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Apply prior to the emergence of the crop as plants that come in contact with the spray will be killed. Seeding should be done with a minimum of soil disturbance. |
| | | Do not make more than 2 applications per year |
| ALFALFA Dormant season on established planting Region A ¹ (See | 1.3 – 2.0 pts | Make a broadcast application using the specified rate in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. After the crop is dormant, apply to established stands (at least one year old); alfalfa present at the time of application will be burned which may reduce the yield of the first cutting. HELMQUAT 3SL controls weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, |

| | | |
|---|--|--|
| chart at end of alfalfa section for list of states in each region) | | tansymustard, London rocket, sowthistle, rescue brome, wild oats, and other winter annuals and suppresses perennial weeds. Tank mixes with metribuzin products such as Lexone or Sencor may improve burndown of existing vegetation and improve residual control. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply |
| <ul style="list-style-type: none"> • Do not cut or harvest within 42 days of application. • Do not make more than 1 application per year. • Do not apply if spring regrowth is more than 2" or fall regrowth following last fall cutting is greater than 6". | | |
| ALFALFA Dormant season Tank Mix with Velpar® L Herbicide Region A' | 0.7-1.3 pts. mixed with 1-2 qts. of Velpar L | Make one broadcast application to established alfalfa stands during the dormant season using the specified rate in a minimum of 10 gallons of spray per acre by ground or 10 gallons of spray per acre by air. Use the lower rate of HELMQUAT 3SL when weeds are less than 4" tall. HELMQUAT 3SL controls weeds such as chickweed, downy brome, and tansymustard. Use the lower rate of Velpar L on loamy sands or sandy loams. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. Temporary chlorosis may occur on alfalfa regrowth. Plant stress due to disease, insects, winterkill, frost or drought, low fertility, and overcutting may increase the chance of crop injury. |
| <ul style="list-style-type: none"> • Do not apply if spring regrowth is more than 2" or fall regrowth following last fall cutting is greater than 6". • Do not apply to alfalfa during the first season after seeding. • Do not use on gravelly or rocky soils, exposed subsoils, hardpan, sand, or poorly drained alkaline soils as crop injury including mortality may result. • Do not cut or harvest within 42 days of application. • Do not make more than 2 applications per year. | | |
| ALFALFA Dormant | See rate below based on geographical region | Make a broadcast application during the late fall or winter months after the last fall cutting and before the first spring cutting using the specified rate in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. HELMQUAT 3SL is used for desiccation of weeds including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals and suppression of perennial weeds. <i>In California only, HELMQUAT 3SL is used for desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle, and groundsel; use the higher specified rate if ryegrass, shepherdspurse, sowthistle, or groundsel are present.</i> |
| On established plantings: Region B2 | 0.7-1.3 pts | Applications to alfalfa that is not dormant or has broken dormancy may result in stand reduction or yield reductions. Replanting may be necessary. Foliage present at the time of application will be burned. Tank mixes with metribuzin products such as Lexone or Sencor may improve burndown of existing vegetation and improve residual control in dormant established alfalfa (at least 1-year old), but do not use on newly established alfalfa (less than 1-year old). When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. If there is a severe weed infestation, total hay yield of first cutting may be reduced in alfalfa fields and the reduction is typically directly proportionate to the loss of weed weight. |
| On fall-seeded, newly established stands less than 1-year-old: Region A' | 0.7-1.3 pts | |
| On fall-seeded, newly established stands less than 1-year-old: Region B2 | 0.5-0.8 pt. | |
| <ul style="list-style-type: none"> • Do not apply more than 1 application per year. | | |
| <ul style="list-style-type: none"> • Do not apply within 60 days of harvest. | | |
| <ul style="list-style-type: none"> • Do not apply if spring regrowth after grazing or cutting is more than 2" in the California counties of Orange, Riverside, and all California counties north of these counties. | | |
| <ul style="list-style-type: none"> • Do not apply if regrowth after grazing or cutting is more than 2" in all other areas within Region B. | | |

¹Region A includes: AK, CA: (Counties of Del Norte, Siskiyou, Modoc, Shasta, Lassen, Plumes, Sierra, Nevada), CO, CT, DE, ID, IL, IN, IA, KS, KY, ME, MD, MA, MI, MN, MO, MT, NE, NV, NH, NJ, NY, ND, OH, OR, PA, RI, SD, UT, VT, VA, WA, WV, WI, WY

²Region B includes: AL, AZ, AR, CA: (All other counties not listed in Region A), FL, GA, HI, LA, MS, NM, NC, OK, SC, TN, TX

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|--|--|---|
| ALFALFA Between cuttings treatment in established plantings (includes first year alfalfa) (All states east of the Rocky Mountains) | 0.7 pt. | Apply the specified rate as a broadcast application using a minimum of 10 gallons of spray per acre by ground immediately after alfalfa has been removed for hay or silage. In and areas where moisture is limited, when weeds beyond the seedling stage, and stubble of weeds cut off during harvest will be less affected by this treatment and control may be affected. First year alfalfa stands and yields may be reduced if alfalfa is allowed to regrow more than 2". Crop foliage present at the time of application will be burned. |
| | | <ul style="list-style-type: none"> Do not treat more than 5 days after cutting. Do not make more than 3 applications per year during the growing season. These sprays are in addition to a dormant application, but do not apply more than twice during the first growing season of first year alfalfa. Do not cut or harvest within 30 days of application |
| ALFALFA (For use only in the following states> ID, MT, NV, OR, UT, WA WY) | 1.7 – 2.7 pts. (for desiccation of alfalfa to facilitate harvest of alfalfa seed) 1.3-2.7 pts. HELMQUAT 3SL = 2 pts. Reglone | Apply the specified rate as a broadcast application in a minimum of 20-25 gallons of spray per acre by ground or 5-10 gallons of spray per acre by air. All alfalfa seed treated with HELMQUAT 3SUSReglone tank mix is to be tagged at processing plants NOT FOR HUMAN CONSUMPTION." It shall be the grower's responsibility to notify the processing plants of any seed crop treated with HELMQUAT 3SUSReglone tank mix. Screenings from alfalfa seed processing are prohibited from feed channels. All HELMQUAT 3SL/Reglone treated alfalfa seed screenings must be removed from the feed market. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. |
| | | <ul style="list-style-type: none"> Do not harvest until at least 4 days after application. Do not apply when weather conditions favor drift from the treated areas. Do not apply by ground within 25 ft. or by air within 75 ft. of lakes; reservoirs; permanent streams, marshes, or natural ponds, estuaries; and commercial fish farm ponds. Do not use on fields producing alfalfa for livestock feed; use only in fields producing alfalfa seed. No portion of the treated field (including seed, seed screenings, hay forage, or stubble) may be used for human or animal feed. Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crop. Do not use treated alfalfa seed for sprouting. Do not make more than 2 applications per year. |

ALFALFA

Table 2. New Seedlings--Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (CA only).

| For Control of: | Rate/Acre* | |
|---|-------------------|-------------------|
| | For Suppression | For Control |
| Spikeweed (4 inches tall or less) | 5.4 fl. oz. | 10.7-16.0 fl. |
| Volunteer Small Grain (8 inches tall or less) | 5.4-10.7 fl. oz. | 21.3 fl. oz. |
| Fiddleneck (6 inches tall or less) | 5.4-10.7 fl. oz. | 21.3 fl. oz. |
| Shepherdspurse | 10.7-21.3 fl. oz. | — |
| Annual Bluegrass | — | 10.7-21.3 fl. oz. |
| Chickweed | — | 10.7-21.3 fl. oz. |
| Red Maids (6 inches tall or less) | — | 10.7-21.3 fl. oz. |

*Do not use the 5.4 fl. oz. rate unless the alfalfa has at least 3 trifoliate leaves; do not use the 10.7 fl. oz. rate unless the alfalfa has 6 trifoliate leaves; or do not use rates over 10.7 fl. oz. unless there are 9 trifoliate leaves.

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|--------------------------|------------------------|--|
| ALMONDS | 0.8-2.7 pts. | Apply the specified rate as a directed spray in a minimum of 10 gallons of spray per acre by ground. Use a shield or wrap the plant when spraying around young trees. Mature woody weeds, perennial weeds, late germination weeds, and green suckers may need retreatment or spot treatments. |
| | | <ul style="list-style-type: none"> Do not graze treated areas Do not apply when nuts to be harvested are on the ground. Do not feed cover crops grown in treated areas to livestock. Spray to contact green stems (except suckers) or foliage. Do not make more than 5 applications per year. |
| ARTICHOKE (GLOBE) | 1.7-2.7 pts. | Apply the specified rate as a directed spray in a minimum of 20-100 gallons of spray per acre by ground. Allow an interval of 7 days between applications. |
| | | <ul style="list-style-type: none"> Do not make more than 3 applications per season nor apply more than 8 pts per acre per season. Do not harvest within 1 day of application. |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|--|--|--|
| ASPARAGUS | 1.7-2.7 pts. (preplant or preemergence) | Apply the specified rate as a preplant or preemergence application either broadcast or banded over the row in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Plants that have emerged at the time of application will be killed. Applications should be made before crop emergence. Preemergence to established plantings at least 2 years old: Apply the specified rate prior to emergence of crop or after last harvest either broadcast or banded over the row in a minimum of 10 gallons of spray per acre by ground. Plants that have emerged at the time of application will be killed. Do not apply within 6 days of harvest. |
| | 1.7-2.7 pts. (Preemergence to established plantings at least 2 years old) | |
| <ul style="list-style-type: none"> •Do not make more than 3 applications per year for preplant or preemergence application. | | |
| BEANS, DRY , PEAS, DRY² (See footnote in "Comments" section for list of approved commodities) Not for use in California | 0.8-1.3 pts. | Apply the specified rate as a harvest aid in a minimum of 20 gallons of spray per acre by ground or 5 gallons of spray per acre by air when the crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 40% (bush type peas or beans) or 30% (vine type peas or beans) of the leaves still green. Add a nonionic spreader at 1 qt. per 100 gallon. For vining-type beans or bush-type with lush growth, make a single application at the higher specified rate. If making a split application, do not make more than 2 applications or exceed a total of 1.3 pts. per acre. The split application may improve vine coverage. Sweet lupin, White sweet lupin, White lupin, Grain lupin, Adzuki beans, Asparagus beans, Black beans, Broad beans, Field beans, Garbanzo beans, Kidney beans, Lablab beans, Lima beans, Moth beans, Mung beans, Navy beans, Pinto beans, Rice beans, Tepary beans, Urd beans, Guar beans ² Blackeyed peas, Chickpeas, Cowpeas, Crowder peas, Southern peas, Catjang peas |
| <ul style="list-style-type: none"> •Do not apply when weather conditions favor drift. Adding a drift control agent may reduce spray drift. •This use is not registered on dry beans or dry peas in California. •Do not make more than 2 applications. •Do not apply within 7 days of grazing or harvest. | | |
| BERRIES' (See footnote in "Comments" section for list of approved commodities) | 1.3-2.7 pts. | Apply specified rate in a minimum of 50 gallons of spray per acre by ground. Apply as a postemergence directed spray. Apply before emergence of new canes or shoots or crop injury can occur. Apply a coarse spray to avoid injury from a fine spray mist. |
| | | 'Blackberries, Blueberries, Boysenberries, Currant, Elderberries, Gooseberries, Huckleberries, Loganberries, Raspberries |
| <ul style="list-style-type: none"> •Do not make more than 5 applications per year. | | |
| CACAO (Not for use in California) | 1.3-2.7 pts. | Apply as a directed spray in a minimum of 50-200 gallons of spray per acre by ground when the weeds are succulent and growth is from 1' - 6'. For mature woody weeds, perennial weeds, late germinating weeds, and grasses, retreatment or spot treatments may be needed but do not exceed 5 applications per year. Protect young plants with a shield to prevent spray from contacting plants as injury may result. |
| <ul style="list-style-type: none"> •Do not spray under windy conditions. •Do not graze treated areas or feed treated cover crops to livestock. •Do not apply within 1 day of harvest. •Do not exceed more than 5 applications per year. | | |
| CASSAVAS, TANIERS, YAMS (Puerto Rico only) | 1.3 pts. | Apply as a shielded post directed spray in a minimum of 50 gallons of spray per acre by ground when the weeds are succulent and growth is from 1" - 6". |
| <ul style="list-style-type: none"> •Do not make more than 3 applications per year on cassavas and taniers or more than 2 applications per year on yams. •Do not allow spray to contact crop or injury may occur. •Do not spray under windy conditions. •Do not graze treated areas nor feed treated forage to livestock. •Do not apply within 90 days of harvest. | | |
| CHEMICAL FALLOW Information | See below for specific rates depending on use site | For all chemical fallow applications, apply in a minimum of 5-10 gallons of spray per acre by air or 5-60 gallons of spray per acre by ground. If applying at less than 10 gallons per acre by ground, also follow these additional precautions: 1. Do not apply with floaters or exceed speed of 10 mph. 2. Apply with flat-fan nozzles only at 30-40 psi. 3. Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./acre. Use higher spray volumes for better coverage as density of stubble, crop residue, or weeds increase. To control volunteer wheat or downy brome, fall-applied treatments generally work best with HELMQUAT 3SL. If possible, tank mix with atrazine for maximum burndown and residual control. Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment. Cut wheat as high as possible to avoid cutting weeds too short and allow the weeds to grow at least 2-3" after harvest before applying HELMQUAT 3SL. The addition of dicamba (Banvel) or 2,4-D ester (low volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds. |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|---|--|---|
| CHEMICAL FALLOW Information <i>(continued)</i> | See below for specific rates depending on use site | Refer to 2,4-D ester (low volatile), Banvel, or residual herbicide label(s) for rates. Additionally, when tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. For extended weed control during the fallow period, tank mixes with registered residual herbicide combinations other than those listed on this label are permissible. Weeds taller than 6" may not be controlled. Weeds and grasses emerging after application will not be controlled. Crop plants emerged at the time of application will be killed. |
| CHEMICAL FALLOW Continuous Wheat 2-3 Month Recropping Interval | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. | Make a broadcast application in a minimum of 5 gallons of spray per acre by ground or air at least 45 days before seeding. For volunteer wheat or downy brome control in the spring, use at least 1.3 pts. per acre with a PSI herbicide (see section of the label entitled "Tank Mixing For Improved Burndown of Difficult Weeds and Residual Weed Control" for additional details). Refer to the section above entitled "Chemical Fallow; Information" for additional instructions, restrictions, and precautions. |
| • Do not make more than 3 applications per year. | | |
| CHEMICAL FALLOW Wheat— Fallow Wheat Rotations (Fall applied after harvest; seeded 12-14 months later) | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. | Make a broadcast application in a minimum of 5 gallons of spray per acre by ground or air before weeds produce seed. Volunteer wheat and downy brome are best controlled with late August or early September applications. Tank mix with atrazine, Marksman® Herbicide or Command® Herbicide (or similar product) for enhanced burndown and residual weed control. Tank mixes with metribuzin products such as Lexone or Sencor may improve burndown of existing grass and broadleaf weeds and improve residual control. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. Refer to the section above entitled "Chemical Fallow; Information" for additional instructions, restrictions, and precautions. |
| • Do not make more than 3 applications per year. | | |
| CHEMICAL FALLOW Wheat— Fallow Wheat Rotations (Spring applied; seeded 3-5 months later) | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. | Make a broadcast application in a minimum of 5 gallons of spray per acre by ground or air. Apply March 1 to April 15 prior to spring rains to conserve moisture. Volunteer wheat is easier to control after the boot stage, but soil moisture loss will be greater. For volunteer wheat or downy brome control in the spring, use at least 1.3 pts. per acre with a PSI herbicide (see section of the label entitled "Tank Mixing For Improved Burndown of Difficult Weeds and Residual Weed Control" for additional details). Refer to the section above entitled "Chemical Fallow; Information" for additional instructions, restrictions, and precautions. Tank mixes with metribuzin products such as Lexone or Sencor may improve burndown of existing grass and broadleaf weeds and improve residual control. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. |
| • Do not make more than 3 applications per year. | | |
| CHEMICAL FALLOW Wheat— Annual Crop—Wheat Rotations (Fall applied in wheat stubble) | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. | Make a broadcast application in a minimum of 5 gallons of spray per acre by ground or air after wheat harvest but before weeds produce seed. If foxtail or barnyardgrass recover, respray before they seed. Late August through November applications are more effective for control of volunteer wheat and downy brome. Tank mix with atrazine or Marksman Herbicide for enhanced burndown and residual weed control. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. Refer to the section above entitled "Chemical Fallow; Information" for additional instructions, restrictions, and precautions. Approved annual crops are grain sorghum, corn, wheat, and proso millet. |
| • Do not make more than 3 applications per year. | | |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|--|--|---|
| CHEMICAL FALLOW Wheat—Annual Crop—Wheat Rotations (Spring applied prior to planting an annual crop') (See footnote in "Comments" section for list of approved crops) | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts, | Make a broadcast application in a minimum of 5 gallons of spray per acre by ground or air. Tank mix with atrazine for enhanced burndown and residual weed control noting the atrazine instructions regarding pH and recropping intervals. For volunteer wheat or downy brome control in the spring, use at least 1.3 pts. per acre with a PSI herbicide (see section of the label entitled "Tank Mixing For Improved Burndown of Difficult Weeds and Residual Weed Control" for additional details): When tank-mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. Refer to the section above entitled "Chemical Fallow; Information" for additional instructions, restrictions, and precautions. ¹ Approved annual crops are grain sorghum, corn, wheat, and proso millet. |
| • Do not make more than 3 applications per year. | | |
| CLOVER AND OTHER LEGUMES' (See footnote in "Comments" section for list of approved crops) | See rate below for specific geographical region | For dormant season application only, HELMQUAT 3SL will desiccate weeds including London rocket, sowthistle, rescue brome, wildoats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals and suppression of perennial weeds. In California, this product may be used for desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle, and groundsel. In California, use higher specified rate if ryegrass, shepherdspurse, sowthistle, or groundsel is present. Applications should be made in the late fall or winter months after the last fall cutting but before the first spring cutting. Applications to clover or other legumes that are not dormant or have broken dormancy may result in stand and/or yield reductions. Replanting may be necessary. Green clover or other legumes foliage present at the time of application will be burned, discolored and/or temporarily stunted. Total hay yield of first cutting may be reduced in clover or other legumes fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight. ² Other legumes include velvet bean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch. |
| 1.3-2.1 pts. (On established plantings in Region A ²) | | Make a broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. |
| <ul style="list-style-type: none"> • Do not make more than 1 application per year. • Do not apply if regrowth after grazing or cutting is more than 2". • Do not harvest within 60 days of application. | | |
| 0.7-1.3 pts. (On established plantings in Region B') | | Make a broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. |
| <ul style="list-style-type: none"> • Do not make more than one application per year. • Do not apply if regrowth after grazing or cutting is more than 2". • Do not harvest within 60 days of application. | | |
| 0.7-1.3 pts. (On fall seeded newly established stands less than 1 year old in Region A ²) | | Make a broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. |
| <ul style="list-style-type: none"> • Do not make more than 1 application per year. • Do not apply if regrowth after grazing or cutting is more than 2". • Do not harvest within 60 days of application. | | |
| 0.5-0.8 pts. (On fall seeded newly established stands less than 1 year old in Region B ³) | | Make a broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. |
| <ul style="list-style-type: none"> • Do not make more than 1 application per year. • Do not apply if regrowth after grazing or cutting is more than 2". • Do not harvest within 60 days of application. | | |

²Region A includes: AK, CA: (Counties of Del Norte, Siskiyou, Modoc, Shasta, Lassen, Plumes, Sierra, Nevada), CO, CT, DE, ID, IL, IN, IA, KS, KY, ME, MD, MA, MI, MN, MO, MT, NE, NV, NH, NJ, NY, ND, OH, OR, PA, RI, SD, UT, VT, VA, WA, WV, WI, WY

³Region B includes; AL, AZ, AR, CA: (All other counties not listed in Region A), FL, GA, HI, LA, MS, NM, NC, OK, SC, TN, TX

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|--|--|---|
| CORN': (Used alone) (See footnote in "Comments" section for list of approved crops) | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. | Apply preplant or preemergence either broadcast or banded over the row using the specified rate in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Apply prior to the emergence of the crop as plants that come in contact with the spray will be killed. Seeding should be done with a minimum of soil disturbance and seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence. Applications made after weeds have emerged will not be controlled. Includes field, fresh sweet, forage, fodder, seed, and popcorn. |
| <ul style="list-style-type: none"> Do not make more than three applications per year. | | |
| CORN Tank Mixes for No-Till/ Reduced Till | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. | Apply preplant or preemergence either broadcast or banded over the row using the specified rate in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Ensure that any tank mix partners allow application by air. Apply before, during, or after planting, but prior to the emergence of the crop as plants that come in contact with the spray will be killed. For improved burndown or residual control, HELMQUAT 35L may be tank mixed with the following herbicides: 2,4-D ester (low volatile), Harness®, AAtrex/Atrazine, Harness® Xtra, Banvel, Lasso® Herbicide, Bicep MAGNUM, Linex, Bicep Lite II MAGNUM, Lorox, Dual MAGNUM®, MANA Parallel, MANA Parallel Pius, MANA Parallel PCS, Princep, Frontier®, Prowl® Herbicide, Guardsman®, simazine, Harmony® Extra Herbicide (Preplant Only), Surpass® EC, Surpass® 100, Topnotch®. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. HELMQUAT 35L may also be tank mixed with Ambush® insecticide or other permethrin products. |
| <ul style="list-style-type: none"> Do not make more than three applications per year. | | |
| FIELD CORN, POPCORN, SWEET CORN, SEED CORN (Post-emergence directed spray) | 0.7-1.3 pts. | Apply specified dosage in a minimum of 10 gallons of spray per acre by ground as a postemergence directed spray with or without a hooded or shielded sprayer. Use the higher rate on hard to control weeds; weeds 6" or more tall may not be controlled. Corn plants that come in contact with the spray may be severely damaged or may be killed, Apply when weeds are actively growing. With hooded or shielded sprayers: Use hooded or shielded sprayers with skids or wheels on the Direct the spray between the rows ensuring that the hooded or shielded spray prevents contact with corn plants. Without hooded or shield sprayers: When making a directed application without hooded or shielded sprayer, apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of the corn stalks. If corn is 20" tall or more, arrange nozzles so they spray no higher than the lower 1/3 of the corn stalks. Corn plants shorter than 10' may be injured and not recover. Injury to corn foliage will occur if sprayed; however, corn will recover and develop normally. Corn height is measured from soil surface to top of whorl. |
| <ul style="list-style-type: none"> Do not make more than 3 applications per year. | | |
| FIELD CORN, POPCORN, SEED CORN | 0.8-1.3 pts. | Apply specified dosage as a harvest aid broadcast application in a minimum of 20 gallons of spray per acre by ground or 5 gallons of spray per acre by air after the corn is mature. A black layer at the base of the kernels indicates maturity. Consult your local agricultural authority with help in identifying the black layer. Add nonionic surfactant containing at least 75% surface I active ingredient at 0.25% v/v. Use the higher specified rate to desiccate mature broadleaf weeds and grasses or on broadleaf weeds and grasses taller than 18". Drought stressed plants (especially <u>broadleaf</u> weeds) can be difficult to kill and desiccation may not be complete. |
| <ul style="list-style-type: none"> Do not apply within 7 days of harvest. | | |
| <ul style="list-style-type: none"> Make only 1 application per year. | | |
| FIELD CORN ONLY (grain, fodder, forage) | 1.3 pts. | For use in the USDA Witchweed Eradication Program, apply specified dosage by post-emergence directed spray in a minimum of 10 gallons of spray per acre by ground. If regrowth occurs, initiate sprays in late June to early July and repeat in early August. Follow application instructions in post-emergence directed spray section above. |
| <ul style="list-style-type: none"> Do not make more than 3 applications per year. | | |
| FIELD CORN ONLY (grain, fodder, forage) 2, 4-D Amine Tank Mix | 5.41 oz. + 0.5 lb. 2,4-D Amine AE | For use in the USDA Witchweed Eradication Program, make applications at the specified dosage in a minimum of 10 gallons of spray per acre as a post-emergence directed spray to grassy weeds and witchweed before witchweed blooms. Reapply if regrowth occurs. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. Follow application instructions in post-emergence section above. |
| <ul style="list-style-type: none"> Do not make more than 3 applications per year. | | |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
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| COTTON (Used alone) | 1.7-2.7 pts. | Apply preplant or preemergence at the specified rate in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air prior to, during, or after planting but before crop emergence. For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence before an application of HELMQUAT 3SL. When seeding, a minimum amount of soil disturbance should occur. • Do not make more than 3 applications per year. |
| COTTON (Used alone) (California only) | 5.4-10.7 fl. oz. | Apply specified dosage in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air as a preplant application. This application is used to control volunteer barley in preformed seedbeds. • Do not make more than 3 applications per year. |
| COTTON Goal®/ Galigan®Herbicide Tank Mix | 1.7-2.7 pts. | Apply specified dosage in a minimum of 10 gallons of spray per acre by ground or air as a preplant or fallow bed broadcast application. Add Goal or Galigan according to the rate on the product label. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. • Do not make more than 3 applications per year. |
| COTTON Other Tank Mixes | 1.7-2.7 pts. | Apply specified dosage as a preplant or preemergence broadcast spray in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air before, during, or after planting, but before crop emergence. For improved burndown and residual control, HELMQUAT 3SL may be tank mixed with the following herbicides: Cotoran® Herbicide, Meturon® Herbicide, Cotton-Pro® Herbicide, Caparol® Herbicide, diuron herbicides. Harmony Extra (Preplant Only), MSMA herbicides, Zorial® Herbicide, Dual MAGNUM, MANA Parallel PCS, MANA Parallel, Prowl. When <i>tank mixing</i> with Cotoran DF or Meturon DF, follow the mixing instructions on the respective labels and maintain constant agitation. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. • Do not make more than 3 applications per year. |
| COTTON Harvest aid | See rate below for specific rate based on geographical region | HELMQUAT 3SL may be used as a harvest aid in cotton growing areas of the US. Repeat application if necessary, but do not exceed 4 applications per year or 1.3 pints per acre per year. This product may be tank mixed with other cotton harvest aid materials known to be effective by local experience. Unless otherwise instructed in this label, refer to tank mix product label for rates, directions, limitations, and precautions. HELMQUAT 3SL can also be applied in a tank mix with methyl parathion and/or Karate Z or Silencer® insecticides. Nodes above cracked boils (NACB) timing is for guidance and is not intended to restrict local experience. |
| | 5.4 fl. oz + 1 pt. phosphate or 1 gal. chlorate (southern cotton) | Use in southern cotton to aid in the defoliation and opening of mature bolls. Tank mix with phosphate and chlorate defoliant. Apply specified dosages by broadcast application when 80% or more of the bolls are open and the remaining bolls to be harvested are mature in a minimum of 10 gallons of spray per acre by ground and 5 gallons of spray per acre by air. Use of this tank mix will inhibit the development of immature bolls. Do not apply within 7 days of harvest and grazing. |
| | 2.1-3.3 fl. oz. (southern cotton) | Use in southern cotton to aid in the defoliation and opening of mature bolls at specified rate as a broadcast application in 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. HELMQUAT 3SL may be mixed with Accelerate®, Defoliant, Def® Defoliant, Dropp® Defoliant, Ethephon Plant Growth Regulator, Folex® Defoliant, Harvade® Harvest Growth Regulator, and Prep™ PGR. Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. |
| | | <ul style="list-style-type: none"> • When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. • Do not pasture livestock in treated fields or feed treated foliage. • Do not exceed a total of 1.3 pts/A as a harvest aid. • Do not make more than 4 applications per year. |
| | 0.7-1.3 pts. (southern cotton) | Use in southern cotton as a post defoliation treatment to aid in opening of mature bolls and in the desiccation of green weeds. Apply at the specified rate by broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air when 75% or more of the bolls are open and the remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. To avoid leaf sticking, apply |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
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| COTTON Harvest aid <i>(continued)</i> | 0.7-1.3 pts. (southern cotton) | HELMQUAT 3SL as a desiccant approximately 3-7 days after defoliation or a conditioning application. If weed infestation is heavy or dense, use the higher specified rate. |
| | | <ul style="list-style-type: none"> • When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. • Do not pasture livestock in treated fields or feed treated foliage. • Do not exceed a total of 1.3 pts/A as a harvest aid. • Do not make more than 4 applications per year. • Do not apply within 3 days of harvest or grazing. |
| | 3.7-5.4 fl. oz. + phosphate or sodium chlorate and/or other compatible harvest aid products (western cotton) | Use in western cotton to aid in boll opening and for early defoliation. Use the higher specified rate on rank cotton. Early defoliation occurs when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB). Do not use more than 5.4 fl. oz. of HELMQUAT 3SL for early defoliation as excessive desiccation may occur. Development of immature bolls will be inhibited. When using sodium chlorate, do not use more than 4 lbs. of actual defoliant per acre at this early defoliation timing. Make a broadcast application minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Do not graze or harvest within 7 days of application when following this schedule. |
| | | <ul style="list-style-type: none"> • When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. • Do not pasture livestock in treated fields or feed treated foliage. • Do not exceed a total of 1.3 pts/A as a harvest aid. • Do not make more than 4 applications pr year. |
| | 5.4-10.7 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliant and/or other compatible harvest aid products (western cotton) | For use in western cotton for boll opening and as a mid- to late-defoliation treatment. Mid- to late-defoliation timing is when 75% or more of the bolls are opening and the remaining bolls to be harvested are mature (approximately 3 or fewer NACB). Development of immature bolls will be inhibited. In desert cotton or on rank vigorous cotton, use the higher specified rate of HELMQUAT 3SL. Make a broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. |
| | | <ul style="list-style-type: none"> • When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. • Do not pasture livestock in treated fields or feed treated foliage. • Do not exceed a total of 1.3 pts/A as a harvest aid. • Do not make more than 4 applications per year. • Do not apply within 3 days of harvest or grazing |
| | 2.1-7.5 fl. oz. (stripper or spindle harvested) | Stripper or Spindle Harvested: Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature. Make a broadcast application at the specified dosage in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air for defoliation and boll opening. It is advisable to apply the range of rates on a small block of cotton to determine the rate that best fits your environmental and plant conditions. Development of immature bolls will be inhibited. Slice bolls and inspect seed for maturity. HELMQUAT 3SL may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant, Folex Defoliant, Def Defoliant, Harvade Harvest Growth Regulant, Dropp Defoliant, Prep PGR, Ethephon Plant Growth Regulator or other products containing ethephon. Split applications may be made but do not exceed a total of 1.3 pints per acre. To avoid leaf sticking, apply HELMQUAT 3SL as a desiccant approximately 3-7 days after defoliation or a conditioning application and 7-14 days before harvest. Cooler temperatures may cause a longer waiting period between application of HELMQUAT 3SL as a desiccant and defoliation/conditioner. Lower rates in the range may be necessary south of 1-10 in Texas where temperatures are typically higher during defoliation. |
| | | <ul style="list-style-type: none"> • When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. • Do not pasture livestock in treated fields or feed treated foliage. • Do not exceed a total of 1.3 pts/A as a harvest aid. • Do not make more than 4 applications per year. • Do not apply within three days of harvest or grazing. |

| CROP | CROP (RATE PER ACRE) | COMMENTS |
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| COTTON Harvest aid (continued) | 0.7-1.3 pts. (late season desiccation) | Late season desiccation: Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature. Apply specified dosage by broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. It is advisable to apply the range of rates on a small block of cotton to determine the rate that best fits your environmental and plant conditions. Development of immature bolls will be inhibited. Slice bolls and inspect seed for maturity. Split applications may be made but do not exceed a total of 1.3 pints per acre. To avoid leaf sticking, apply HELMQUAT 3SL as a desiccant approximately 3-7 days after defoliation or conditioning. Lower rates in the range may be necessary south of 1-10 in Texas where temperatures are typically higher during defoliation. |
| | | <ul style="list-style-type: none"> • When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. • Do not pasture livestock in treated fields or feed treated foliage. • Do not exceed a total of 1.3 pts/A as a harvest aid. • Do not make more than 4 applications per year. • Do not a. oil within 3 days of harvest or grazing. |
| | 0.75-1.25 pts. (desiccation of regrowth) | Apply as a broadcast application in 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Use to desiccate regrowth occurring after defoliation or desiccation. Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete. Use the higher specified rate if regrowth is excessive. Because regrowth is difficult to control, thorough coverage with the full rate is necessary. |
| | | <ul style="list-style-type: none"> • When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. • Do not pasture livestock in treated fields or feed treated foliage. • Do not exceed a total of 1.3 pts/A as a harvest aid. • Do not make more than 4 applications per year. • Do not apply within 3 days of harvest or grazing. |
| EASTER LILIES (Field grown) | 1.7-2.7 pts. | Apply preemergence in a minimum of 10 gallons of spray per acre by ground. |
| | | • Do not make more than 2 applications per year. |
| FALLOW LAND Prior to planting of any crops | 1.0-2.7 pts. | Apply specified dosage as a broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansymustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals, and for suppression of perennial weeds or sedges. Use the higher specified rate for weeds approaching the maximum size of 6". Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes. For best results, allow maximum weed emergence prior to application. Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label. |
| | | Do not make more than 2 applications during the fallow period. |
| GRASSES (For Seed) (For Use in Seedbed Preparation) | 1.3-2.7 pts. | Apply specified dosage preplant, at planting, or preemergence in 10 gallons of spray per acre by ground. Prepare the seedbeds and allow weeds to germinate. When weeds are at the 3-5 leaf stage, apply HELMQUAT 3SL. Repeat applications as necessary prior to grass emergence, but not exceed 3 applications per year. |
| | | Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding. Do not make more than 3 applications per year. |
| GUAR | 1.3 pts. | Apply specified dosage for preharvest desiccation in a minimum of 10 gallons of spray per acre by ground after the pods are fully mature |
| | | Do not graze treated areas or use the treated forage for animal feed. Do not make more than 3 applications per year. Do not apply within 4 days of harvest or grazing. |
| GUAVA | 2.5 pts | Apply specified dosage as a directed spray in a minimum of 10 gallons of spray per acre by ground. Retreatment and/or spot spraying may be necessary for mature woody weeds, germinating weeds and grasses, and perennials. |
| | | Do not make more than 4 applications per year. Do not allow spray to contact green stems, fruit, or foliage. Do not graze treated areas. Do not feed cover crops grown in treated areas to livestock. |

| CROP | CROP (RATE PER ACRE) | COMMENTS |
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| HOPS (ID, OR, & WA only) | 1.3 pts. | <p>Apply specified dosage as a directed spray in a minimum of 10 gallons of spray per acre by ground. For suckering and stripping, spray only the basal 2 ft. of the vines. Repeat as necessary, but do not exceed 3 applications per year. Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using HELMQUAT 3SL on varieties other than these, test on a small number of vines of each variety to determine sensitivity to injury and do not use on unlisted varieties if unacceptable crop injury occurs. For chemical pruning to bum back existing vines and obtain even emergence of subsequent vines, spray when vines are less than 3 ft. tall. Unacceptable injury may occur when applications are made to vines less than 6 ft, tall.</p> <ul style="list-style-type: none"> • Do not apply within 14 days of harvest or grazing. • Do not apply more than 3 times per year. • Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result. • Do not allow animals to graze in treated hopyards, but hop vine refuse and silage may be fed to livestock. |
| LENTILS (Not for use in California) | 0.8-1.3 pts. | <p>Apply specified dosage as a harvest aid in a minimum of 20 gallons of spray per acre by ground and 7 gallons of spray per acre by air plus a nonionic surfactant at 0.25% v/v (2 pts. per 100 gallons) of the finished spray volume. Apply when the crop is mature and at least 80% of the pods are yellowing and mostly ripe. No more than 30% of the leaves should still be green in color. To improve coverage, a split application may be made.</p> <ul style="list-style-type: none"> • Do not apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift. • Not registered for use on lentils in California. • Do not apply more than 2 applications per year nor exceed a total of 1.3 pts. per acre. • Do not apply within 7 days of harvest. |
| MINT (Peppermint, Spearmint) | 1.3-2.0 pts. | <p>Apply during the dormant season before spring growth when weeds are less than 6" tall using the specified dosage in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Use for the suppression of weeds such as Italian ryegrass, prickly lettuce, groundsel, chickweed, downy brome and bluegrass. This product may be tank mixed with Sin-bar® Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce, and groundsel. Apply this tank mixture no more than once per season. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply.</p> <ul style="list-style-type: none"> • Do not apply more than 2 pts. per acre per dormant season. • Do not make more than 2 applications per year. |
| ONIONS (seeded), GARLIC | 1.7-2.7 pts. | <p>Apply specified dosage preplant or preemergence in a minimum of 10 gallons of spray per acre by ground. The higher specified rate should be used for heavy infestations or for wild oat control. Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence.</p> <ul style="list-style-type: none"> • Do not apply within 60 days of harvest in all states except California. In California, do not apply within 200 days of harvest. • Do not apply more than 2.7 pts. Per acre per year nor apply more than once per year. |
| PASSION FRUIT | 2.5 pts. | <p>Make a directed spray at the specified rate in a minimum of 10 gallons of spray per acre by ground. If bark is still green at the time of application, use a shield or wrap the vine. If making applications close to or during harvest, pick all fruit off the ground prior to application. Retreat as necessary, up to 5 times per year.</p> <ul style="list-style-type: none"> • Do not make more than 5 applications per year. • Do not allow animals to graze in treated areas. |
| PEANUTS | 5.4-10.8 fl. oz. | <p>Apply specified dosage as a broadcast application in a minimum of 10 gallons of spray per acre at ground cracking. A second application may be made up to 28 days after ground crack. This application will control or suppress small (1" - 6") emerged annual grass and broadleaf weeds. For at ground crack use, HELMQUAT 3SL can be tank mixed with Pursuit Herbicide, MANA Parallel PCS, or Dual MAGNUM for residual weed control. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</p> <ul style="list-style-type: none"> • Do not apply by air. • Do not make more than 2 applications per season nor apply a total of more than 10.8 fl. oz. of product per acre per season. |

| CROP | CROP (RATE PER ACRE) | COMMENTS |
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| PEANUTS Basagran® Herbicide Tank Mix | 5.4-10.8 fl. oz. + 1 pt. Basagran | Apply specified dosage as a broadcast application in a minimum of 10 gallons of spray per acre at ground crack stage of peanuts. A second application may be made up to 28 days after ground crack. A tank mix application of HELMQUAT 3SL with Basagran will improve control of cocklebur, bristly starbur, smartweed, and prickly sida. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. |
| | | <ul style="list-style-type: none"> Do not apply by air. Do not make more than 2 applications per season nor apply a total of more than 10.8 fl. oz of product per acre per season. Do not apply this tank mix if peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment as injury may be enhanced and/or prolonged. Do not apply this tank mix during prolonged periods of drought or unseasonably cold weather as unsatisfactory weed control may result. |
| PEANUTS Butyrac® Herbicide or Butoxone® 200 Herbicide Tank Mix | 5.4-10.8 fl. oz. + 8-16 oz. (0.125- 0.25 lbs.) Butyrac or Butoxone 200 | Apply as a broadcast postemergence application at the specified dosage in a minimum of 10 gallons of spray per acre by ground. A tank mix application of HELMQUAT 3SL with Butyrac or Butoxone 200 will improve control of weeds such as cocklebur, sicklepod, and morningglory. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. |
| | | <ul style="list-style-type: none"> Do not apply by air. Do not make more than 2 applications per season nor apply a total of more than 10.8 fl. oz. of product per acre per season. |
| PERSIMMON (Not for use in CA unless accompanied by a supplemental label) | 2.5 pts. | Apply specified dosage as a directed spray in a minimum of 10 gallons of spray per acre by ground. Mature woody weeds, late-germinating weeds and grasses, and perennials may need spot spraying or retreatment, but do not exceed 5 applications per year. |
| | | <ul style="list-style-type: none"> Do not allow spray to contact green stems, fruit, or foliage. Do not graze treated areas. Do not feed cover crops grown in treated areas to livestock. Do not make more than 5 applications per year. |
| PIGEON PEAS (Puerto Rico only) | 1.3 pts. | Apply specified dosage as a directed spray in a minimum of 10 gallons of spray per acre by ground. Avoid contact with crop foliage. |
| | | <ul style="list-style-type: none"> Do not make more than 1 application per season or per year. Do not graze treated areas or feed treated forage to livestock. Cannery waste can be fed to livestock. Do not apply within 60 days of harvest. |
| PINEAPPLE | 1.3-2.7 pts | Apply specified dosage as a directed spray in a minimum of 10 gallons of spray per acre by ground. On mature or hard to control weeds, retreatment may be necessary, but do not exceed 3 applications per year. |
| | | <ul style="list-style-type: none"> Do not make more than 3 applications per season. Do not apply within 20 days of harvest. |
| POTATO | 0.7-1.3 pts. | Apply specified dosage as a preplant or preemergence broadcast spray in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Applications may be made up to ground cracking but before potatoes have emerged. |
| | | <ul style="list-style-type: none"> Do not make more than 3 applications per year. |
| POTATO (Used alone) (CA, WA, ID, OR | 0.4-0.7 pt. | Apply specified dosage as a preplant broadcast spray in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. This application is used for volunteer barley control in preformed seedbeds. |
| | | <ul style="list-style-type: none"> Do not make more than 3 applications per year. |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
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| POTATO (Fresh market potatoes only) (see "Comments" section for list of states) | 0.7-1.3 pts. | Apply specified dosage for preharvest vine killing and weed desiccation as a broadcast spray in a minimum of 20 gallons of spray per acre by ground. When quick vine kill is desired, use 1.3 pts. per acre. When vine growth is dense, use 2 applications at 0.6 pt per acre. Allow a minimum of 5 days between split applications. Fresh Market Potatoes include potatoes that are sent directly from the field to a consumer, grocery store, or processor for use. Potatoes must be harvested promptly after desiccation and consumed or processed immediately. Begin application when leaves begin to turn yellow. Immature potato foliage is tolerant to HELMQUAT 3SL; however, desiccation will not be complete under this condition. For Use Only in the states of: CO, DE, ID, IL, IN, KS, ME, MD, MA, MI, MN, NE, NV, NJ, NY, ND, OH, OR, PA, SD, UT, WA, WI, WY |
| | | <ul style="list-style-type: none"> • Do not use on potatoes that will be stored as tuber decomposition may result. • Do not apply to drought stressed potato vines. • Do not use to desiccate the vines of seed potatoes as seed pieces may fail to germinate and grow normally. • Do not pasture livestock in treated potato fields. • Do not exceed 2.6 pts./A per season. • Do not make more than 2 applications per year. • Do not apply within 3 days of harvest. |
| RICE | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. | Apply as a broadcast spray before, during, or after planting but before crop emergence in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Use higher specified rates and spray volumes when vegetation is dense. Seeding should be done with a minimum amount of soil disturbance. Weeds and grasses emerging after application will not be controlled, but crop plants exposed to application will be killed. For improved or extended weed control, HELMQUAT 3SL may be tank mixed with other herbicides registered for this use- When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. |
| SAFFLOWER | 1.7-2.7 pts. | Apply broadcast or banded over row before, during, or after planting but before crop emergence in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. |
| SAFFLOWER (CA only) | 0.7 pt. | Apply as a preplant broadcast spray in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. This application is effective for control of volunteer barley in preformed seedbeds. |
| SMALL GRAINS (Barley, Wheat) | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. | Apply specified dosage preplant or preemergence in a minimum of 5 gallons of spray per acre by ground or air. |
| SMALL GRAINS (Wheat Only) Hoelon® 3EC Tank Mix | Weeds 1-3": 1.3-1.7 pts. Weed 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts- | Apply specified dosage preplant or preemergence in a minimum of 10 gallons of spray per acre by ground and 5 gallons of spray per acre by air. A tank mix with Hoelon 3EC applied when weeds are 1" - 6" in height and are actively growing will improve grass control. Weeds 6" or taller may not be controlled. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. |
| SORGHUM (Grain) | Weeds -3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. | Apply specified dosage preplant or preemergence in a minimum of 10 gallons of spray per acre by ground and 5 gallons of spray per acre by air as a broadcast or banded application. Seedbeds should be formed as far ahead of planting as possible to allow maximum weed and grass emergence. Seeding should be done with a minimum of soil disturbance. |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
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| SORGHUM (Grain) Atrazine & 2,4-D ester [low volatile] Tank Mix | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts Weeds 6": 2.0-2.7 pts | For preplant or preemergence application, HELMQUAT 3SL may be tank mixed with atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (low volatile) may aid in the suppression of perennial and annual broadleaf weeds emerged at the time of application. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. |
| <ul style="list-style-type: none"> • Do not make more than 3 applications per year. • Do not apply within 48 days of harvest for grain and 20 days of harvest for forage. | | |
| SORGHUM (Grain) Harmony Extra Tank Mix | 1.3-2.5 pts. | Make a preplant application at the specified dosage in a minimum of 10 gallons of spray per acre by ground. HELMQUAT 3SL may be tank mixed with Harmony Extra for improved weed control. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. |
| <ul style="list-style-type: none"> • Do not make more than 3 applications per year. • Do not apply within 48 days of harvest for grain and 20 days of harvest for forage. | | |
| SORGHUM (Grain) | 0.7-1.3 pts. | Apply specified dosage as a postemergence directed spray (including hooded or shielded) in 10 gallons of spray per acre by ground when weeds are actively growing. Use higher specified rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled. Because spray can severely damage and/or kill sorghum plants, applications should be made with either hooded or shielded sprayers or as a directed spray as outlined below. To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height. Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants. If applying without a hooded or shielded sprayer, apply when sorghum is at least 12" tall when naturally standing. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Use precision directed spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray. Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions. |
| <ul style="list-style-type: none"> • Do not exceed 2 postemergence-directed applications or exceed a total of 5.3 pts. HELMQUAT 3SL per season or per year. • Do not apply within 48 days of harvest for grain and 20 days of harvest for forage. | | |
| SOYBEANS | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts. | Apply specified dosage as a broadcast spray before, during, or after planting but before crop emergence in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. HELMQUAT 3SL may be tank mixed with the following herbicides for improved burndown or residual control: 2,4-D\$, Canopy, Dual MAGNUM, Goal or Galigan, Harmony Extra (Preplant Only), Lasso, Lexone, Linex, Lorox, Lorox Plus, Prowl, Pursuit, Scepter® Herbicide, Sencor, Surflan® Herbicide, Turbo® Herbicide. The rate of HELMQUAT 3SL to be used in these tank mixtures is dependent on weed height and growing conditions. Use the highest specified rate of HELMQUAT 3SL under dry conditions or where the weed canopy is dense. The lower rate may be used when weeds are less than 4" tall and a selective postemergence spray or cultivation will be made within 3 weeks after planting. Seeding should be done with a minimum amount of soil disturbance. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. |
| <ul style="list-style-type: none"> • Do not exceed a total of 4.0 pts. of HELMQUAT 3SL per season. • Do not make more than 3 applications per year. • Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod). | | |
| SOYBEANS 2,4-D ester (low volatile) Tank Mix | Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2.0-2.7 pts. + 0.35-0.475 lb.a.i. 2,4-D ester (low volatile) at least 7 days prior to planting or + 0.475- 0.95 lb. a.i. 2,4-D ester (low volatile) at least 30 days prior to planting | Apply preplant or preemergence at the specified dosage in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. |
| <ul style="list-style-type: none"> • Do not make more than 3 applications per year. • Do not use the amine formulation of 2,4-D as the activity of HELMQUAT 3SL may be reduced. • Do not apply 2,4-D ester (low volatile) prior to planting soybeans if soybean injury, including possible loss of stand and yield, are not acceptable. | | |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|--------------|--|--|
| SOYBEANS | 3.0-5.3 fl. oz. (post-emergence directed spray: includes hooded or shielded) | <p>Apply specified dosage as a postemergence directed spray (includes hooded or shielded) in 'a minimum of 10 gallons of spray per acre by ground when weeds are actively growing. Use the lower rate to control seedling johnsongrass, crabgrass, goosegrass, brachiaria, Texas millet, and pigweed less than 2" tall. Use the highest rate for control of 2-4" red rice, brachiaria, barnyard grass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, fall panicum, 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed. Add 2,4-D at rates specified on the label of the product you are using for control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice. If necessary, a second application may be made 7-14 days later. Hooded or shielded sprayers should be used by directing spray between the rows to prevent spray contact with crop plants. Use higher specified rate on larger (< 6") or hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray intentionally or accidentally (including drift of fine droplets) contacts the plants. If making applications without hooded or shielded sprayers, use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Do not treat if soybeans are less than 8" tall. Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions. When tank mixing with 2,4-D, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply.</p> <ul style="list-style-type: none"> • Do not make more than 3 applications per year. • Do not graze or harvest for forage of hay. |
| SOYBEANS | 5.4-10.7 fl. oz. | <p>Harvest Aid: Apply specified rate in a minimum of 20 gallons of spray per acre by ground or 5 gallons of spray per acre by air. On indeterminate varieties, apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less. On determinate varieties, apply when plants are mature, i.e., beans are fully developed, 112 of leaves have dropped, and remaining leaves are yellowing. Immature soybeans will be injured. Use the higher specified rate for cocklebur control. Mature cocklebur, especially drought-stressed plants, are tolerant to HELMQUAT 3SL and desiccation will not be complete.</p> <ul style="list-style-type: none"> • Do not apply within 15 days of harvest. • Do not make more than 3 applications per year. • Do not graze or harvest for forage or hay. |
| STRAWBERRIES | 1.3 pts. | <p>Apply as a postemergence directed spray in a minimum of 20 gallons of spray per acre by ground directing the spray between the rows and using shields to prevent contact with the crop.</p> <ul style="list-style-type: none"> • Do not allow spray to contact strawberry plants as injury or excessive residues may result. • Do not apply more than 3 times per season or per year. • Do not graze livestock in treated areas. • Do not apply within 21 days of harvest. |
| SUGAR BEETS | 1.3-2.7 pts. | <p>Apply specified dosage preplant or preemergence in a minimum of 10 gallons of spray per acre by ground and 5 gallons of spray per acre by air. Use the higher specified rate for heavier weed infestations. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence with a minimum amount of soil disturbance when seeding or transplanting occurs. Crop plants emerged at time of application will be killed. This application may be used in fallow bed/stale seedbed for weed control.</p> <ul style="list-style-type: none"> • Do not make more than 3 applications per year. |
| SUGARCANE | See rate below based on geographical area to be treated | For all sugarcane growing areas, the following general comments are applicable. Apply as a hooded, shielded, or directed post-emergence spray to avoid contact with cane foliage to prevent leaf burn and yield reduction. Make a second and final application, if necessary, when new weed growth is 2-6" high. |
| | 1.3 pts. (FL only) | In Florida, apply specified rate in a minimum of 50 gallons of spray per acre by ground in early spring (March-April) when weeds are small. Do not apply after June 1 as cane growth may be stunted and yields reduced. |
| | 1.3 pts. (HI only) | In Hawaii, apply specified rate in a minimum of 20 gallons of spray per acre by ground but do not apply after the cane rows have closed in. |
| | | <ul style="list-style-type: none"> • Do not graze treated areas or feed treated forage to livestock. • Do not make more than 2 applications per year. |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
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| SUGARCANE (continued) | 0.7-2.0 pts. (LA only) | In Louisiana, apply specified rate in a minimum of 20 gallons of spray per acre by ground. Apply when tillers are less than 18" high for tiller control. Use the higher specified rate for tiller control and when heavier weed infestations are present. |
| | | <ul style="list-style-type: none"> Do not graze treated areas or feed treated forage to livestock. Do not harvest within 30 days of application. Do not make more than 2 applications per year. |
| | 0.4-0.7 pt. (FL and TX only) | In Florida and Texas, apply the specified rate in 5 gallons of spray per acre by air. Use the higher specified rate when cool cloudy weather exists. Apply 3-14 days before burning and harvest. |
| | | <ul style="list-style-type: none"> Do not graze treated areas or feed treated forage to livestock. Do not make more than 1 application per year. |
| SUNFLOWER | 1.7-2.7 pts. (preplant or preemergence) | Apply specified dosage before, during, or after planting but before crop emergence in a minimum of 10 gallons of spray per acre by ground and 5 gallons of spray per acre by air either broadcast or banded over the row. |
| | | <ul style="list-style-type: none"> Do not make more than 3 applications per year. |
| | 0.8-1.3 pts. (preharvest desiccation) | Preharvest desiccation: Apply specified dosage as a broadcast spray for preharvest desiccation in a minimum of 10 gallons of spray per acre by ground and 5 gallons of spray per acre by air. Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this is the same time when the back of the heads are yellow and the bracts are turning brown. Use the higher specified rate when crop stands or weed infestations are heavy. |
| | | <ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not apply within 7 days of harvest. Do not graze treated areas or feed treated forage to livestock. |
| TARO, DRYLAND (HI Only) | 1.3-2.1 pts. | Apply specified dosage as a postemergence directed spray in a minimum of 10 gallons of spray per acre by ground. Make the first application when weed growth is 1" - 4" high. If weeds emerge after application, they will not be controlled. A single retreatment may be made; however, do not harvest dryland taro within 6 months of last application. |
| | | <ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not allow spray to contact taro plants as injury may result. Do not harvest within 6 months (180 days) of last application. |
| TREE PLANTATION ESTABLISHMENT Deciduous and Conifers | 1.3-2.7 pts. | Apply specified dosage prior to planting as a broadcast application in 20 gallons of spray per acre by ground equipment. Be careful to minimize soil disturbance when planting. Use the higher specified rate for heavier weed infestations. For improved burndown or residual control, tank mix HELMQUAT 3SL with other herbicides labeled for this use. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. Do not apply in less than 10 gallons per acre, as weed control will be reduced. Prepare ground early to allow maximum emergence of weeds. |
| | | <ul style="list-style-type: none"> Do not make more than 3 applications per year. |
| TREES AND VINES Orchards, Vineyards, Windbreaks, Shade & Ornamental Trees' (See footnote in "Comments" section for list of approved uses) | 1.7-2.7 pts. | Apply specified dosage as a directed spray in a minimum of 10 gallons of spray per acre by ground. Treat when sucker growth is no longer than 8" on grapes. Late season applications to weeds should be made to prevent contact with desirable grape foliage. Spot treatments or retreatment may be needed for perennial weeds, mature woody weeds, late germinating weeds, and green suckers. Use a shield or wrap plant when spraying around young trees or vines. HELMQUAT 3SL may be used as a directed spray in tank mix combination with the following herbicides: Devrinol®, Goal or Galigan, Karmex® or Diuron herbicides, Krovar®, Princep, Sinbar or Metribuzin 75DF, Solicam® or Oryzalin 4 A.S.. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. 'Acerola, Apples, Apricots, Avocados, Bananas, Beechnut, Brazil Nut, Butternut, Calamondin, Cashew, Cherries, Chestnut, Chinquapin, Citrus Citron, Coffee, Figs, Filberts, Grapefruit, Grapes, Hickory Nut, Kiwi Fruit, Kumquat, Lemon, Lime, Macadamia Nuts, Mandarin, Nectarines, Olives, Orange (sour & sweet), Papayas, Peaches, Pears, Pecans, Pistachios, Plums, Prunes, Pummelo, Satsuma Mandarin, Walnuts, other shade and ornamental trees such as Arborvitae, Ash, Elm, Fir, Oak, Pine, etc. |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|---|------------------------|--|
| TREES AND VINES Orchards, Vineyards, Windbreaks, Shade & Ornamental Trees' (See footnote in "Comments" section for list of approved uses) (continued) | 1.7-2.7 pts | (continued) <ul style="list-style-type: none"> Do not apply more than 5 post-emergence directed applications per year except for apricots 3 post-emergence Do not apply more than 5 directed applications per year, cherries (3 post-emergence directed applications per year), kiwi fruit (3 applications per year), nectarines (3 post-emergence directed applications per year), olives (4 post-emergence directed applications per year), peaches (3 post-emergence directed applications per year), pistachios (5 applications per year total but only 2 after shells split), plums (3 post-emergence directed applications per year). Do not apply within 28 days of harvest for apricots, 28 days of harvest for cherries, 13 days of harvest for figs, 14 days of harvest for kiwi fruit, 28 days of harvest for nectarines, 13 days of harvest for olives, 14 days of harvest for peaches, 7 days of harvest for pistachios, 28 days of harvest for plums. Do not graze treated areas. Do not allow spray to contact fruit, foliage, or green stems except for suckers. Do not feed cover crops grown in treated areas to livestock. Do not apply when figs, nuts, or olives to be harvested are on the ground. |
| TYFON (NH only) | 1.7-2.7 pts. | Apply specified dosage preplant or preemergence in a minimum of 10 gallons of spray per acre by ground. Crop plants that have emerged at the time of application will be injured. Weeds and grasses emerging after treatment may not be controlled. Seeding should be done with a <ul style="list-style-type: none"> Do not make more than 3 applications per year. |
| VEGETABLES: Seeded or Transplanted' (See footnote for list of approved crops) | 1.3-2.7 pts. | Apply specified dosage preplant or preemergence in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Applications can be made as a banded or broadcast treatment before, during, or after planting but prior to the crop emergence. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence. Use the higher specified rate for heavier weed infestations. Seeding or transplanting should be done with a minimal amount of soil disturbance. Crop plants emerged at time of application will be killed. HELMQUAT 3SL may be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal/Galigan. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. 'Beans (Lima, Snap), Broccoli, Cabbage, Cantaloupe, Carrots, Cauliflower, Chayote Fruit, Chinese Cabbage, Chinese Waxgourd, Citron Melon, Collards, Cucumber, Eggplant, Endive (Escarole), Gherkin, Edible Gourd, Groundcherry, Lettuce, Momordica spp., Musk Melons, Peas, Pepino, Peppers, Pumpkin, Squash, Sweet Corn, Tomatillo, Turnips, Tomatoes, Watermelons <ul style="list-style-type: none"> Do not harvest tomatoes within 30 days after application. Do not apply more than 3 applications per season. |
| VEGETABLES: Eggplant, Tomatoes, Peppers | 1.3 pts. | Apply specified dosage as a directed spray between the row after crop establishment in a minimum of 10 gallons of spray per acre by ground to control or suppress emerged weeds. Use precision directed spray equipment (not exceeding 30 psi nozzle pressure) adjusted to prevent spray contact with crop. Do not spray under conditions which may cause excessive drift. Apply when weeds are succulent and when weed growth is less than 6". <ul style="list-style-type: none"> Do not apply more than 3 applications per season. Do not allow animals to graze in treated areas. Do not harvest within 30 days of application on tomatoes. |
| VEGETABLES: Tomatoes | 1.6-2.5 pts. | After Final Harvest: Apply specified dosage after final harvest in 40-120 gallons of spray per acre (0.62-0.93 lb. a.i./A) by ground. Add NIS containing 75% or more surface active agent at 0.125% v/v (1 pt./100 gals. Spray solution). Thorough coverage of the tomato vines is required to ensure maximum herbicide burndown. Use of dirty or muddy water may deactivate HELMQUAT 3SL. Burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently to help with the removal of Sweet Potato Whitefly. <ul style="list-style-type: none"> Do not apply more than a total of 3 lbs. active ingredient (paraquat) per acre per season. Do not apply more than 2 applications per season. To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist). |
| VEGETABLES: Lettuce, Melon, Sugar Beets, Tomatoes (CA, WA, OR, ID only) | 0.4-0.7 pt. | Apply specified dosage as a broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. Used for control of volunteer barley in preformed seedbeds. <ul style="list-style-type: none"> Do not harvest tomatoes within 30 days after application. Do not apply more than 2 applications per season. |
| VEGETABLES: Rhubarb | 1.7-2.7 pts. | Apply specified dosage as a dormant application in a minimum of 10 gallons of spray per acre by ground. Apply before buds in the crown begin to grow. <ul style="list-style-type: none"> Do not apply more than 2 applications per season. |

RESIN SOAKING: Pines (Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, Spruce Pines)

Tree Selection—Select trees to be treated from stands on sites not subject to periods of extreme drought stress as the desiccating effect of HELMQUAT 3SL to pines is accentuated during such periods, causing a reduction in the amount of oleoresin deposited in the xylem. Select trees to be treated from vigorous, nonstagnated stands, either natural or planted. In stagnated stands or commercial timber stands, plan treating with HELMQUAT 3SL not sooner than three years after a commercial thinning.

Application Directions—Apply HELMQUAT 3SL diluted in water to a suitable wound in the tree trunk to bring the treatment into contact with the xylem (sapwood).

Bark Streaks or Cuts—This type of wound is made using a standard or rotary bark hack or a chainsaw chipping tool (employed in naval stores work) to remove a single 1" wide streak of bark about 1-2 ft. from ground level. The total length should not exceed 1/3 of the tree circumference. Multiple streaks or cuts can result in serious girdling of the trunk and premature death of the tree. A coarse spray (about 1.75.0 ml) of HELMQUAT 3SL solution (1-5% cation; wt./wt. basis) should be applied to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak. For a 9" diameter tree, 3 ml. of spray will cover the 1" wide streak. Using 3 ml. of a 2 or 4% HELMQUAT 3SL solution will result in application of 60 or 120 mg. of HELMQUAT 3SL per streak.

Time of Treatment—Resin soaking can occur from treatments made any time of the year; however, cool season treatments under nondrought conditions usually result in less severe pine beetle infestations and longer tree life.

Interval Between Treatment and Tree Harvest—The interval between application of HELMQUAT 3SL and tree harvest should be a minimum of 6 months and preferably from 12-24 months. Intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks, which may make early harvest necessary. The HELMQUAT 3SL treatment may encourage beetle attack or may cause premature death of the tree. Desiccation of the xylem tissue rather than the desired resin soaking may occur, and is more likely at higher dosage rates.

Effect on Stem Growth—HELMQUAT 3SL treatment can result in reduced stem growth during the interval between treatment and tree harvest.

| Dilution Table for HELMQUAT 3SL (3.0 lbs. cation per gallon) | |
|--|--|
| Concentration of Cation Desired (St./St. Basis) | Add the Following No. Gals. of Water to 2/3 Gallon of HELMQUAT 3SL |
| 0.2% | 118.8 |
| 0.5% | 46.8 |
| 1.0% | 22.9 |
| 2.0% | 10.9 |
| 3.0% | 6.9 |
| 4.0% | 4.9 |
| 5.0% | 3.7 |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|---|---|---|
| CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS' (See footnote in "Comments" section for notation) | 1.7-2.7 pts. | Apply specified dosage as a broadcast application in a minimum of 10 gallons of spray per acre by ground and 5 gallons of spray per acre by air. HELMQUAT 3SL may be tank mixed with other registered herbicides to improve weed control. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product label(s). In interpreting the label(s) of tank mixed products, the most restrictive label limitations must apply. 'For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs. |
| | • Do not apply more than 3 applications per season. | |
| NONCROP USES' (See footnote in "Comments" section for notation) | 1.7-2.7 pts. | Apply specified dosage as a broadcast application or spot treatment in a minimum of 10 gallons of spray per acre by ground. Repeat applications as necessary being careful to avoid contact with foliage of ornamentals or desirable plants. 11r/eluding but not limited to public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, and fencelines. |
| | • Do not apply more than 10 applications per year. | |
| PASTURE RESEEDING For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes | 0.7-1.3 pts. | Apply specified dosage as a broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. West of Cascade and Sierra Nevada Mountains • Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth. • For best seeding results, apply on moderately to heavily grazed areas. • Do not use in areas with heavy sod and weed growth. East of Rocky Mountains • Use the 1.3 pt. rate on vigorous or coarse sod species such as bromegrass. • Apply prior to or at time of seeding grasses or forage legumes. • Apply only to grazed or mowed pastures not more than 3" in height at time of treatment. |

| CROP | DOSAGE (RATE PER ACRE) | COMMENTS |
|---|--|--|
| PASTURE RESEEDING <i>(continued)</i> | 0.7-1.3 pts. | Bermudagrass or Bahiagrass Sod <ul style="list-style-type: none"> Apply in late summer or early fall to sod not exceeding 3" in height. For control of emerged little barley, apply in February or March before the mid-boot stage of little barley. Bermudagrass and Coastal Bermudagrass Pastures <ul style="list-style-type: none"> Apply when bermudagrass is dormant. For control of little barley, apply before the mid-boot stage. Do not mow for hay until 40 days after treatment. |
| <ul style="list-style-type: none"> Do not apply more than 3 applications per year. | | |
| For Control of Endophyte Fungus-Infected Fescue Forage | 0.7-1.3 pts. followed by 0.7-1.3 pts. | Apply specified dosage as a broadcast application in a minimum of 10 gallons of spray per acre by ground when fescue is actively growing and is no more than 4' high. If necessary, use split applications of 10-21 days apart. For spring plantings, the initial application of 0.7-1.3 pts. may be made the previous fall. |
| Legume/Grass Mixture and Other Grass Pastures | <ul style="list-style-type: none"> Do not allow fescue to go to seed starting with the preceding year's crop to reduce the infestation endophyte infested grass. Do not make more than 2 applications per year. Do not exceed 2.6 pts. per acre total in preparation for reseeding. | |
| For Prickly Pear Desiccation in Pastures <i>(Not for use in CA)</i> | 0.8 fl. oz. per gallon of water (spot sprays) | Apply specified dosage in sufficient volume to spray to wet the weed foliage using knapsack, backpack sprayers, pump-up pressure sprayers, hand-guns, hand wands, and other hand-held equipment which directs the spray onto weed foliage. Mix the specified rate of HELMQUAT 3SL with 1/3 fl. oz. of a nonionic surfactant per gallon of water. Completely and uniformly cover all green prickly pear foliage with spray. Apply in May through September for best desiccation results. Do not use more than 1.6 pints of HELMQUAT 3SL Herbicide per acre per year. Apply only to pastures with no more than 3" of height at time of treatment. Tank mix with Grazon® P+D Specialty herbicide at a rate of 1-2 fl. oz. per gallon of water for improved desiccation and perennial control of Prickly pear. Always refer to the Grazon P+D Specialty herbicide label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. |
| <ul style="list-style-type: none"> Do not apply more than 10 applications per year. | | |
| For Juniper Species leaf moisture reduction or desiccation prior to Prescribed burning of pastures <i>(Not for use in CA)</i> | 1.3 pts. | Apply specified dosage as a broadcast application during hot, dry weather conditions (generally July and August) in a minimum of 5 gallons of spray per acre by air. Use only in conjunction with prescribed burning as recommended and monitored by local SCS or University and Extension Range Specialists. Use 2% v/v noionic surfactant in a minimum of 5 gpa spray solution. Juniper leaf moisture content should be monitored: however, maximum leaf moisture reduction generally occurs 2-4 weeks after Helmquat 3SL application. Significant soil moisture and/or wet weather conditions prior to or after application will decrease the potential for Juniper crown burns. Cool or humid weather conditions also adversely affect leaf moisture reduction |
| <ul style="list-style-type: none"> Do not apply more than 10 applications per year. Do not graze livestock after application or prior to burning. | | |
| Native Pastures <i>(Not for use in CA)</i> | 1.0-1.25 pts. | Apply specified dosage as a broadcast application in a minimum of 10 gallons of spray per acre by ground or 5 gallons of spray per acre by air. For the control of downy and Japanese brome, apply in the spring after 90% node formation of brome species but before full bloom. Emerged native perennial grasses will be burned by this application, but application after 90% node formation will allow adequate time for native grasses to recover and attain maximum growth in the use season. Apply only to pastures with no more than 3" of height at the time of treatment. |
| <ul style="list-style-type: none"> Do not apply more than 2 applications per year. Do not apply more than 1.25 pts per year. | | |

| Conversion Table HELMQUAT 3SL to be Applied | | | |
|--|-------|-----------|--------------|
| Ounces | Pints | Lb. a.i.* | Acres/Gallon |
| 2.50 | 0.16 | 0.06 | 51.3 |
| 4.80 | 0.30 | 0.11 | 26.7 |
| 5.28 | 0.33 | 0.12 | 24.2 |
| 5.52 | 0.35 | 0.13 | 23.2 |
| 10.00 | 0.63 | 0.23 | 12.8 |
| 11.00 | 0.69 | 0.26 | 11.6 |
| 11.20 | 0.70 | 0.26 | 11.4 |
| 12.00 | 0.75 | 0.28 | 10.7 |
| 16.00 | 1.00 | 0.38 | 8.0 |
| 20.00 | 1.25 | 0.47 | 6.4 |
| 20.80 | 1.30 | 0.49 | 6.2 |
| 24.00 | 1.50 | 0.56 | 5.3 |
| 28.00 | 1.75 | 0.66 | 4.6 |
| 32.00 | 2.00 | 0.75 | 4.0 |
| 40.00 | 2.50 | 0.94 | 3.2 |
| 43.20 | 2.70 | 1.00 | 3.0 |

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store at temperatures above 32° F. For help with any spill, leak or fire involving this material, call Chemtrec at 1-800-424-9300.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. 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 HANDLING

Nonrefillable Container: Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying.
(Liquid Formulations) Nonrefillable container equal to or less than 5 gallons: 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 ¼ 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.

Nonrefillable container 5 gallons to bulk: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ 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 of disposal. Repeat this procedure two more times.

CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER.

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