

10182-111

PM-25  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9-28-98

1/59

SEP 28 1998

CERTIFIED MAIL

Mr. Andrew A. Davidson  
Regulatory Product Manager  
ZENECA Ag Products  
1800 Concord Pike  
PO Box 15458  
Wilmington, DE 19850-5458

Dear Mr. Davidson:

Subject: Reregistration  
Label Revisions-Cyclone Herbicide  
EPA Registration No. 10182-111  
Your Submission Dated May 13, 1998

The product labeling referred to above, submitted in connection with reregistration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable provided that you make the required changes listed below:

1. Create a box and enclose the Restricted Use Pesticide statement.
2. Revise the Hazards to Human & Domestic Animals Statement to read as follows:

Fatal if inhaled. May be fatal if swallowed. Causes substantial but temporary eye injury. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Do not breathe spray mist. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse.

3. Under the PPE requirements waterproof gloves must be replaced with chemical resistant gloves such as [insert category A glove type].

Immediately following the "Personal Protective Equipment" heading, add the following statement: "Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical resistant category selection chart."

## CONCURRENCES

SYMBOL ▶	7505C							
SURNAME ▶	MINOR, E.							
DATE ▶	Sep 28, 1998							

4. The User Safety Recommendations must be completely boxed in to separate and highlight the text.
5. Under the Environmental Hazards heading replace "Do not contaminate water when disposing of equipment washwaters" with "Do not contaminate water when cleaning equipment or disposing of equipment washwaters."
6. Under the Environmental Hazards section under the subheading Drift amend the following sentence to read as follows; "Refer to the local state laws, regulations, guidelines, and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement."
7. Under the heading Physical and Chemical Hazards, amend the following sentence, "This product reacts with aluminum to produce hydrogen gas which may form a highly combustible gas mixture." to "This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture."
8. At the end of the Chemical Hazard statement add, "This product is compatible with high density polyethylene and rubber lined steel containers."
9. Your label must bear the phrase "Restricted Use Pesticide" under the heading "Directions for Use"
10. For prominence and clarity, we recommend the placement of a space between the "Violation of Federal Law" and the sentence "Do not apply this product in a way ...."
11. Label revisions to establish a maximum seasonal rate and a PHI are required for the members of the stone and fruits group. A PHI has been established for plums. A PHI must be established and listed on the label for the remaining stone fruits.
12. On page 15 of your booklet, the heading "Product Performance Concerns" and related text should be moved to the end of the label with other Warranty Information.
13. The Agricultural Use Requirements and related text must be completely boxed.
14. The Non Agricultural Use Requirements and related text should be boxed.

15. The Storage and Disposal Statement should be moved from page 55 of the label to directly below the Agricultural Use Requirements box.
16. The Storage and Disposal Statement should be completely boxed.
17. A header "General Instructions and Information" should be placed directly after the Storage and Disposal box.
18. The statement "Do not apply this product through any type of irrigation system" should be displayed singly or highlighted in such a way that it stands out from the main text of the label. It is suggested that this statement be moved directly below General Instructions and Information.
19. The information beginning on page 11 with "When Cyclone is applied at less than 10 ....(e.g. when wind is blowing away from the sensitive areas)." ending on page 13 of the label should be moved directly below the Chemigation Prohibition statement.
20. In the sentence beginning with "The applicator should be familiar with ..." the title "Aerial Drift Reduction Advisory Information" should be underlined.
21. In the Application Height section, the sentence must read "Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind."
22. Under Swath Adjustment, the sentence must read "... , the swath will be displaced downwind. Therefore, on the up and downwind edges..."
23. Under Temperature and Humidity the sentence must read "When making applications in low relative humidity..."
24. Under Temperature Inversions the sentence must read "Applications should not occur during a temperature..."
25. Amend references to "small fruits" to read "berries" and strawberries are to be listed separately.
26. The reassessed tolerance for sorghum grain is contingent on a required proposal to establish a PHI of 48 days. This label contains language for sorghum grain but no PHI is indicated, a PHI must be added to the label.
27. On page 14 of booklet, amend the heading Limitations, Precautions and Warnings to "Limitations and Precautions"

28. The heading Limitations and Precautions must be moved directly below General Precautions and Restrictions Subheader.
29. The text on page 7 of the booklet, "Equipment/Container, Flush all spray equipment...with water immediately after use." must be moved to directly below the General Precautions and Restrictions Subheader.
30. The text on page 13 of the booklet "In dry areas, dust... in extremely dusty conditions." must be moved to directly below the General Precautions and Restrictions Subheader.
31. The subheading "Specific Use Recommendations" makes the recommendation not enforceable and must be removed. For clarity and consistency with other labels the agency recommends the subheading "Directions for Application".
32. On page 10 of booklet, clarify the use of liquid nitrogen as a spray carrier.
33. On page 22 of booklet, remove the heavy line separating 4 types of dry beans from the other dry beans or give separate instructions for these sites.
34. Your Statement of Practical Treatment (SOPT: "First Aid", should follow the Precautionary Statements.
35. Your warranty statement should be moved to the end of the label.
36. Revise the following First Aid Statements to read as follows:

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention. (The statement about the odor must be removed.)

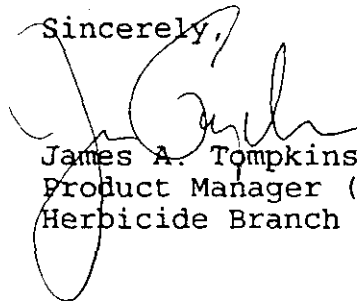
IF SWALLOWED: Call a physician or Poison Control Center. Drink 1 to 2 glasses of water and induce vomiting by touching the back of throat with finger, or if available by administering syrup of ipecac. If person is unconscious, do not give anything by mouth and do not induce vomiting. Call a physician or Poison Control Center and GET TO A MEDICAL FACILITY FAST. TAKE CONTAINER AND LABELING WITH YOU. SEE NOTE TO PHYSICIANS.

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Submit the labeling reflecting the above outlined changes to the Agency for review within thirty (30) days of receipt of this letter. Failure to do so will result in issuance of a Notice of Intent to Suspend your product's registration.

Sincerely,



James A. Tompkins  
Product Manager (25)  
Herbicide Branch 7505C

Enclosures

**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.

**CYCLONE® Herbicide**

**A Weed, Grass, and Harvest Aid Herbicide**

**ACTIVE INGREDIENT:**

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) ..... 30.3%

**INERT INGREDIENTS:** ..... 69.7%

**Total** ..... 100.0%

Contains 2 lbs. paraquat cation per gallon.

Contains stench (odor) and emetic.

EPA Reg. No. 10182-111

**KEEP OUT OF REACH OF CHILDREN**

**O**  
**DANGER POISON**  
**X**  
**PELIGRO**

**ACCEPTED**  
with **COMMENTS**  
In EPA Letter Dated

SEP 28 1998  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.  
10182-111

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

- **NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.**
- **IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN STATEMENT OF PRACTICAL TREATMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.**
- **DO NOT USE OR STORE IN OR AROUND THE HOME.**
- **DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.**

Made in USA  
Zeneca Ag Products  
ZENECA Inc.  
Wilmington, DE 19850-5458

### CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

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The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of ZENECA or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold ZENECA and Seller harmless for any claims relating to such factors.

ZENECA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or ZENECA, and Buyer and User assume the risk of any such use. ZENECA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall ZENECA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ZENECA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF ZENECA OR SELLER, THE REPLACEMENT OF THE PRODUCT.

ZENECA and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of ZENECA.

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### STATEMENT OF PRACTICAL TREATMENT

**IF SWALLOWED:** IMMEDIATELY induce vomiting by touching back of throat with finger. Drink 1 or 2 glasses of water and induce further vomiting. If person is unconscious do not give anything by mouth and do not induce vomiting. **Call a physician or Poison Control Center and GET TO A MEDICAL FACILITY FAST. TAKE CONTAINER AND LABELING WITH YOU. SEE NOTE TO PHYSICIANS.**

**IF INHALED:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention. The odor of this product is from the stenching agent which has been added, not from paraquat.

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

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

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**NOTE TO PHYSICIANS: CALL ZENECA'S MEDICAL EMERGENCY INFORMATION NETWORK AT 1-800-327-8633** at any hour to obtain toxicology and medical management consultation; and paraquat analyses. Prompt treatment is essential and must be initiated immediately before signs and symptoms appear. Symptoms are prolonged and painful and may be delayed for days after swallowing. Treatment may include binding paraquat in the gut with suspensions of clay or charcoal; and/or removal of paraquat from the blood by prolonged charcoal hemoperfusion or continuous hemodialysis. Probable mucosal damage may contraindicate the use of gastric lavage.

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**CALL ZENECA'S MEDICAL EMERGENCY INFORMATION NETWORK AT 1-800-327-8633 (1-800-F-A-S-T-M-E-D) FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE.**

**CALL CHEMTREC AT 1-800-424-9300 FOR A CHEMICAL EMERGENCY such as spill, leak, fire or accident.**

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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

O

**DANGER POISON**

X

May be fatal if swallowed. Fatal if inhaled. Harmful if absorbed through skin. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Do not breathe spray mist. Avoid contact with skin.

**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**

Applicators and other handlers (other than Mixers and Loaders) must wear:

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

Mixers and Loaders must wear:

- Long-sleeve shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Face shield
- Chemical-resistant apron

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, use detergent and hot water. Keep and wash PPE separately from other laundry.

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 requirements may be reduced or modified as specified in the WPS.

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### User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
  - Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
  - Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
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### ENVIRONMENTAL HAZARDS

**WILDLIFE:** 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 disposing of equipment washwaters.

**DRIFT:** CYCLONE® herbicide is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. 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. Refer to the local state laws, regulations, and guidelines for proper application to avoid off-target movement.

**CHEMICAL HAZARD:** This product reacts with aluminum to produce 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.

**EQUIPMENT/CONTAINER:** Flush all spray equipment with water after use each day. CYCLONE is corrosive to aluminum. Aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift should be flushed thoroughly with water immediately after use.

## DIRECTIONS FOR USE

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.**

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### 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.

**For Preplant or Preemergence (Broadcast or Banded), Chemical Fallow, Postemergence Directed Spray, Early Postemergence Broadcast in Peanuts and Dormant Season Applications, and "Between Cutting" Applications in Alfalfa:** Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

**For Harvest Aid and Desiccation Applications:** 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
  - Waterproof gloves
  - Shoes plus socks
  - Protective eyewear
-

## GENERAL INFORMATION

CYCLONE is a contact herbicide used to control or suppress a broad spectrum of emerged weeds. CYCLONE controls most small annual weeds — both broadleaves and grasses, and suppresses perennial weeds by destroying green foliage. CYCLONE can also be used as a desiccant at harvest.

CYCLONE is formulated as a liquid which contains 2 lbs. of active ingredient per gallon. The formulation contains a nontoxic odor and an emetic (an agent which will induce vomiting if the product is swallowed). The odor is included in the formulation to help prevent accidental ingestion of CYCLONE.

CYCLONE is rapidly absorbed by green plant tissue and interacts with the photosynthetic process to produce superoxides which destroy the plant cells. CYCLONE requires actively growing green plant tissue to function. Thorough coverage of all green foliage is essential for effective weed control. CYCLONE is not as effective on drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines.

Clay and organic matter rapidly tie up CYCLONE. As a result, CYCLONE has no residual soil activity to affect later-planted crops or later germinating weeds.

## RAINFASTNESS

Because CYCLONE is rapidly absorbed by the weed foliage, rain occurring 30 minutes or more after application will have no effect on the activity of CYCLONE.

## APPLICATION

Since CYCLONE is a contact-type herbicide, it is essential to obtain complete coverage of target weeds to get good control. Improper application technique and/or application to large, stressed, or mown weeds will usually result in unacceptable weed control. Good coverage is also essential for proper performance in harvest-aid applications. See details below for specific application instructions. Do not apply this product through any type of irrigation system.

## USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

### ALWAYS ADD ONE OF THE FOLLOWING:

Failure to add one of the following will result in reduced performance of CYCLONE.

**Nonionic Surfactant:** Add nonionic surfactant containing 75% or more surface-active agent at 0.125% v/v (1 pint per 100 gallons), **OR** add a nonionic surfactant containing 50-74% surface-active agent at 0.25% v/v (2 pints per 100 gallons), of the finished spray volume for ground applications. For aerial applications, add a nonionic surfactant at 0.25% v/v (2 pints per 100 gallons) of the finished spray volume.

**Crop Oil Concentrate:** Add a non-phytotoxic crop oil concentrate containing 15-20% approved emulsifier, at 1.0% v/v (1 gallon per 100 gallons) of the finished spray volume for ground applications. For aerial applications, add 1 pint of crop oil concentrate per acre. Do not use crop oil concentrate when using CYCLONE for cotton harvest aid.

## NOZZLE SELECTION

The use of flat-fan nozzles will result in the most effective application of CYCLONE. Flood nozzles are generally not as good as flat fans since they produce large uneven droplets. The use of flood nozzles may result in reduced weed control due to inadequate coverage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, USE ONLY FLAT FAN NOZZLES AS RECOMMENDED IN THE CHART BELOW.

RECOMMENDED NOZZLES, PRESSURES AND SETUP		
	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 P.S.I.	30-50 P.S.I.
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%

(Typesetter: Insert nozzle illustrations here)

Using nozzles, pressures, or setups different from the above chart will result in reduced control.

## SPRAY CARRIER

Always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying CYCLONE. Muddy water, or suspension-type fertilizers containing clay, can inactivate CYCLONE. Never use suspension-type fertilizers containing clay as the spray carrier. If using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier, always use the higher rate of CYCLONE and surfactant.

**NOTE:** When using liquid fertilizers such as 28% N as a carrier, it is important that nonionic surfactant still be used with CYCLONE. Liquid fertilizer carriers cannot substitute for surfactant.

## RATES OF CYCLONE

Follow recommended rates listed with each use of CYCLONE. Use the higher label rates when weeds are dense or large. Also, use higher label rates for harvest aid when crop vegetation is dense. For broadcast applications of CYCLONE with backpack sprayers, the application rate should not exceed 0.50 lbs a/A in a minimum of 30 gallons of spray solution per acre.

## SPRAY VOLUME

Follow recommended minimum spray volumes listed with each use of CYCLONE. These are minimum volumes only, and spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, TARGET WEEDS SHOULD NOT EXCEED 6 INCHES IN HEIGHT.

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

## DRIFT MINIMIZATION

DO NOT spray if conditions of thermal inversion exist, or if wind direction and speed may cause spray drift onto adjacent areas. With both aerial and ground applications, the use of a drift control or spray deposition additive (in accordance with label directions) may reduce the potential for drift to occur. Drift minimization is the responsibility of the applicator. Refer to the local state laws, regulations, and guidelines for proper application to avoid off-target movement.

## AERIAL DRIFT REDUCTION ADVISORY 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 degrees.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory Information.

## 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 should 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 applications at the lowest height that is safe reduces exposures 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 should 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 should be avoided below 2 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

## TEMPERATURE AND HUMIDITY

When making applications in 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 should not occur during 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 should 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).

## APPLICATION TIMING

CYCLONE should be applied to emerged weeds when they are small. Weeds 1 to 6" in height are the easiest to control. Larger weeds may be more difficult to control. When weeds have been grazed or mowed, thus removing much of the green foliage, allow the weeds to regrow to a height of 2 to 4 inches before spraying if possible. Similarly, when forage or grain crops have been harvested prior to spraying, weeds present in the field will also have been cut. To allow for adequate green foliage to remain on weeds in this situation, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height.

## BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS

When using CYCLONE for control of grass cover crops or volunteer cereals, best results are obtained when CYCLONE is applied **prior to tillering** or **after boot stage**. This is especially important with a wheat cover crop or volunteer wheat. Treatments made between tillering and boot stage will generally not provide complete control. Do not expect complete control of perennial cover crops.

## ENVIRONMENTAL CONDITIONS

CYCLONE is active over a wide range of environmental conditions. Cool weather (below 55°) will slow the activity of CYCLONE, as will cloudy, overcast weather, but will not affect performance.

In dry areas, dust stirred up by high winds or equipment tires can coat weed leaves and reduce CYCLONE activity. Avoid applying CYCLONE in extremely dusty conditions.

## SPOT SPRAYING

When only small areas are to be sprayed with labeled applications, it is advantageous to mix small quantities of CYCLONE. To aid in mixing small quantities, the following table should be consulted.

If The Broadcast Rate Per Acre for CYCLONE is:	Add The Following Amount of CYCLONE To 1 Gallon of Water
1 pt.	3/8 fl. oz.
2 pts.	1/2 fl. oz.
2 1/4 pts.	3/4 fl. oz.
4 pts.	1-1/4 fl. oz.

Always add 1/3 to 1/2 fl. oz. of a nonionic surfactant for each gallon of spray. When spot spraying in this manner, spray to thoroughly wet the foliage, but not to the point of runoff.

### TANK MIXING FOR IMPROVED BURNDOWN OF DIFFICULT WEEDS AND RESIDUAL WEED CONTROL

#### Photosynthetic Inhibitor Herbicides

Difficult weeds can often be controlled by tank mixing CYCLONE with other herbicides. The addition of herbicides which are also photosynthetic inhibitors (PSI) will slow the activity of CYCLONE, allowing CYCLONE to thoroughly distribute itself within the treated leaf. The resulting level of control is usually greater than if CYCLONE was applied alone.

CYCLONE may be applied in tank mixture with the following PSI herbicides:

Aatrex® herbicide  
Atrazine herbicide  
Bicep® herbicide  
Bicep Lite® herbicide  
Bladex® herbicide  
Canopy® herbicide  
Extrazine® herbicide  
Gemini® herbicide  
Griffex® herbicide  
Lariat® herbicide  
Lexone® herbicide  
Linex® herbicide  
Lorox® herbicide  
Lorox Plus™ herbicide  
Preview® herbicide  
Princep® herbicide  
Sencor® herbicide

Refer to respective product label(s) for rates of application, directions for use, limitations, cautions and for a list of weeds controlled.

#### Improved Weed Control With PSIs

Control of difficult weeds listed below and annual grass control will be enhanced by the addition of a PSI herbicide. For best results a second application is needed.

Marestail	Prickly lettuce
Pennsylvania Smartweed	Lambsquarters
Velvetleaf	Morningglory
Malva (Cheeseweed)	Cheatgrass

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Fall Panicum  
Giant Ragweed  
Kochia  
Cocklebur  
Tansymustard

Knotweed  
Volunteer wheat  
Perennial Weeds (suppression only)  
Barnyardgrass  
Broadleaf signalgrass  
Sedges

### Improved Control of Perennial and Annual Broadleaf Weeds

When perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc. or difficult to control annual broadleaf weeds such as giant ragweed or morningglory are present, tankmixes with 2,4-D ester (Low Volatile), 2,4-DB or Banvel® herbicide, where labeled, will help improve control. Tank mixing the amine formulation of 2,4-D with CYCLONE may result in reduced grass control.

### Order of Tank Mixing

In general, CYCLONE tankmixes with other products should be mixed as follows:

1. Fill spray tank 1/2 full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add CYCLONE to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here.

Since many of the herbicides listed on this label are available in several types of formulations, it is advisable to perform a jar test to check physical compatibility.

### LIMITATIONS, PRECAUTIONS AND WARNINGS

- **DO NOT** use around home gardens, schools, recreational parks, or playgrounds.
- In preplant and preemergence (to the crop) uses, do not apply to soils lacking clay minerals, i.e., peat, muck, pure sand, artificial planting media.
- Seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence prior to treatment.
- Seeding or transplanting should be done with a minimum amount of soil disturbance.
- Weeds and grasses emerging after application of CYCLONE will not be controlled or suppressed.
- Unless otherwise indicated, crop plants emerged at time of application may be severely injured or killed if contacted by sprays of CYCLONE.
- **PRODUCT PERFORMANCE CONCERNS:** Concerns with the performance of CYCLONE must be reported to the retail dealer or to a ZENECA representative within 14 days of

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application. Weeds emerging after application or regrowth of perennial weeds do not constitute a legitimate product performance complaint.

#### **SPECIFIC USE RECOMMENDATIONS**

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

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  New seedlings (California only)	Broadcast	See Table _ page _	Ground: 10 gal Air: 5 gal	70	<ul style="list-style-type: none"> <li>• Apply during late winter or early spring.</li> <li>• Do not cut or harvest within 70 days after application.</li> <li>• Do not apply more than once during the first growing season.</li> <li>• Caution: Seedling alfalfa stands will be reduced and replanting may be necessary.</li> <li>• Not recommended for seedling alfalfa grown for seed.</li> <li>• Alfalfa foliage present at time of application will be burned.</li> </ul>
<b>ALFALFA</b>  (No-till or conventional planting)	Preplant or Preemergence Broadcast or Banded Over- Row	2 - 4 pints (use a minimum of 3 pts. in California)	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Apply prior to emergence of the crop.</li> <li>• Crop plants emerged at time of application will be killed.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  Dormant season on established plantings  Region A - See map at end of Alfalfa section.	Broadcast	2 - 3-1/8 pints	Ground: 10 gal Air: 5 gal	42	<ul style="list-style-type: none"> <li>For control of weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.</li> <li>Do not apply if <i>fall regrowth</i> following last fall cutting is greater than 6", or if <i>spring regrowth</i> is more than 2 inches.</li> <li>Apply to well-established stands (at least one year old) after the crop is dormant.</li> <li>Alfalfa foliage present at the time of application will be burned which may reduce the yield of the first cutting.</li> <li>Do not cut or harvest within 60 days of application.</li> <li>Do not apply more than once per season.</li> <li>Tank mix with metribuzin (Lexone or Sencor) for improved burndown of weed vegetation and residual weed control. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> </ul>
<b>ALFALFA</b>  Dormant season Tankmix with Velpar® L herbicide Region A - See map at end of Alfalfa section.	Broadcast	1½ - 2½ pints	Ground: 10 gal Air: 10 gal	42	<ul style="list-style-type: none"> <li>For control of weeds such as chickweed, downy brome and tansymustard.</li> <li>Use the 1½ pt. rate of CYCLONE when weeds and grasses are less than 4" tall.</li> <li>Mix with 1 to 2 qts. of Velpar L per acre.</li> <li>Use the lower rate of Velpar L on loamy sands or sandy loams. Refer to Velpar L label for directions, limitations, cautions and for a list of weeds controlled.</li> <li>Apply once to established alfalfa stands during the dormant season.</li> <li>Do not apply if <i>fall regrowth</i> following last fall cutting is greater than 6 inches, or if <i>spring regrowth</i> is more than 2 inches.</li> <li>Do not apply to alfalfa during the first season after seeding.</li> <li>Temporary chlorosis may occur on alfalfa regrowth.</li> <li>Stress which may be caused in part by low fertility, disease, insects, winterkill, over cutting, drought or frost may increase the chances of crop injury.</li> <li>DO NOT USE on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result.</li> <li>Do not cut or harvest within 42 days of application.</li> </ul>

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>					
Dormant Season	Broadcast	1 - 2 pints	Ground: 10 gal Air: 5 gal	60	<ul style="list-style-type: none"> <li>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.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> <li>Do not apply if regrowth after grazing or cutting is more than 2 inches.</li> <li>Do not harvest within 60 days of application.</li> <li>CAUTION: Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green alfalfa foliage present at the time of application will be burned.</li> <li>Total hay yield of first cutting may be reduced in alfalfa fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> <li>Tank mix with metribuzin (Lexone or Sencor) for improved burndown of weed vegetation and residual weed control in dormant established (at least 1-year old) alfalfa. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> <li>Do not apply tankmix with metribuzin on newly established (less than 1-year old) alfalfa.</li> </ul>
On established plantings: Region B- See map at end of Alfalfa section.	Broadcast	1 - 2 pints	Ground: 10 gal Air: 5 gal		
On fall-seeded, newly established stands less than 1-year-old: Region A- See map at end of Alfalfa section.	Broadcast	0.5 - 1-1/4 pints	Ground: 10 gal Air: 5 gal		
On fall-seeded, newly established stands less than 1-year-old: Region B- See map at end of Alfalfa section.					
					<b>California</b> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherd's-purse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherd's-purse, sowthistle or groundsel is present.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<p><b>ALFALFA</b></p> <p>Between-cuttings treatment in established plantings. (Includes first year alfalfa) (All states East of the Rocky Mountains)</p> <p>(INSERT MAP BETWEEN THE ALFALFA AND ASPARAGUS TABLES)</p>	Broadcast	1½ pints	Ground: 10 gal	30	<ul style="list-style-type: none"> <li>• Weeds much beyond the seedling stage and the stubble of weeds cut off during harvest will be less affected by this treatment.</li> <li>• Apply immediately after alfalfa has been removed for hay or silage.</li> <li>• Do not treat more than 5 days after cutting.</li> <li>• CAUTION: First year alfalfa stands and yields may be reduced if alfalfa is allowed to regrow more than two (2) inches.</li> <li>• Alfalfa foliage present at time of application will be burned.</li> <li>• In arid areas where moisture is limited, weed control may be reduced.</li> <li>• Do not cut or harvest within 30 days of application.</li> <li>• Make 1 to 3 applications, as needed, during the growing season. These sprays may be applied in addition to a dormant application.</li> <li>• For first year alfalfa, do not apply more than twice during the first growing season.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALMONDS</b>	Directed Spray	1½ - 4 pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers) or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when nuts to be harvested are on the ground.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatments may be necessary.</li> </ul>
<b>ASPARAGUS</b>	Preplant or Preemergence Broadcast or Banded Over- Row	2 - 4 pints	Ground: 10 gal Air:* 5 gal	-	<ul style="list-style-type: none"> <li>Apply prior to emergence of the crop.</li> <li>Crop plants emerged at time of application will be killed.</li> </ul>
<b>ASPARAGUS</b> Preemergence to established plantings at least 2 years old	Broadcast or Band Over-Row	2 - 4 pints	Ground: 10 gal Air: 5 gal	6	<ul style="list-style-type: none"> <li>Apply prior to emergence of crop or after last harvest.</li> <li>Crop plants emerged at time of planting will be killed.</li> <li>May be tank-mixed with Princep herbicide for residual control. Refer to Princep label for specific directions, limitations, cautions and for a list of weeds controlled.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b><u>BEANS, DRY</u></b> Sweet lupin White sweet lupin White lupin Grain lupin  Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbonzo beans Kidney beans Lablab beans Lima beans Moth beans Mung beans Navy beans Pinto beans Rice beans Snap beans Tepary beans Urd beans Wax beans  Blackeyed peas Chickpeas Cowpeas	Harvest-Aid	1½ - 2½ pints	Ground: 20 gal Air: 5 gal	7	<ul style="list-style-type: none"> <li>• Add spreader (nonionic) at 1 quart per 100 gallons of spray mix.</li> <li>• For vining type beans or bush type with lush growth, use a single application of the higher rate.</li> <li>• May also be applied as a split application. <b>DO NOT</b> make more than 2 applications or exceed a total of 1.5 pints per acre. The split application may improve vine coverage.</li> <li>• Apply when the crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 40% (<u>bush type beans</u>) or 30% (<u>vine type beans</u>) of the leaves still green in color.</li> <li>• <b>DO NOT</b> apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li>• NOT REGISTERED FOR USE ON DRY BEANS IN CALIFORNIA</li> </ul>
<b><u>BEANS, DRY</u></b> Crowder peas Southern peas  Catjang Guar					

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CASSAVAS, TANIERS &amp; YAMS</b> (Puerto Rico only)	Shielded Post Directed Spray	2½ pints	Ground: 50 gal Air: 5 gal	90	<ul style="list-style-type: none"> <li>• Apply when weeds are succulent and growth is 1-6 inches.</li> <li>• On cassavas and taniers, do not make more than 3 applications per crop season.</li> <li>• On yams do not make more than 2 applications per crop season.</li> <li>• Do not allow spray to contact cassavas, tanier or yam plants as injury may result.</li> <li>• Do not spray under windy conditions.</li> <li>• Do not graze treated areas or feed treated forage to livestock.</li> </ul>
<b>CHEMICAL FALLOW</b> General Information			Ground: 5 gal Air: 5 gal  See Precautions, Restrictions and Comments		<ul style="list-style-type: none"> <li>• Use higher spray volumes for better coverage as density of stubble, crop residue or weeds increase.</li> <li>• To control volunteer wheat or downy brome, fall-applied treatments generally work best with CYCLONE. If possible, tank mix with Atrazine or Bladex for maximum burndown and residual control.</li> <li>• Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.</li> <li>• Cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3 inches after harvest before applying CYCLONE.</li> <li>• The addition of Banvel or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds.</li> <li>• Refer to 2,4-D ester (Low Volatile), Banvel or residual herbicide label(s) for directions, limitations, cautions and for a listing of weeds controlled.</li> <li>• For extended weed control during the fallow period, tankmixes with registered residual herbicide combinations other than those listed on this label are permissible.</li> <li>• Weeds taller than 6 inches may not be controlled.</li> <li>• Weeds and grasses emerging after application will not be controlled.</li> <li>• Crop plants emerged at the time of application will be killed.</li> <li>• By ground application, apply 5-60 gallons of spray mix per acre. If applying at &lt;10 GPA by ground, utilize the following additional precautions:               <ul style="list-style-type: none"> <li>- Do not apply with floaters or exceed a speed of 10 MPH</li> <li>- Apply with flat fan nozzles only at 30-40 PSI</li> <li>- Apply only in a tankmix with atrazine at a minimum of 0.5 lbs ai/acre;</li> <li>- By air, apply in 5-10 gallons of spray mix per acre.</li> </ul> </li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b>  Continuous Wheat 2-3 Month Recropping Interval	Broadcast	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 5 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Make application at least 45 days prior to seeding.</li> <li>• Use at least 2 pints of CYCLONE per acre with a PSI (see page __) for volunteer wheat or downy brome control in the spring.</li> <li>• Tank mix with Bladex for enhanced burndown, however, low rates (less than 2 lbs active) of Bladex may not provide complete control of volunteer wheat and downy brome.</li> <li>• Refer to the Bladex label for specific use rates for your soil type, use directions, cautions and a list of weeds controlled.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Fallow- Wheat Rotations Fall applied after harvest (seeded - 12-14 months later)	Broadcast	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 5 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Spray before weeds produce seed.</li> <li>• Volunteer wheat and downy brome control are better with late August or early September applications.</li> <li>• Tank mix with Atrazine and/or Bladex, Marksman® herbicide, or Command® herbicide for enhanced burndown and residual weed control.</li> <li>• Tank mix with Sencor 75DF for burndown and residual control of grass and broadleaf weeds.</li> <li>• Refer to the product labels for specific use rates for your soil type, use directions, cautions and a list of weeds controlled.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Fallow- Wheat Rotations Spring applied (seeded 3-5 months later).		Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts			<ul style="list-style-type: none"> <li>• Application should be made March 1 to April 15, prior to spring rains to conserve moisture.</li> <li>• Volunteer wheat is easier to control after the boot stage, but soil moisture loss will be greater.</li> <li>• Use at least 2 pints of CYCLONE per acre with a PSI (see page __) for volunteer wheat or downy brome control in the spring.</li> <li>• Tank mix with Bladex for enhanced burndown, however, low rates (less than 2 lbs active) of Bladex may not provide complete control of volunteer wheat and downy brome.</li> <li>• Refer to the Bladex label for specific use rates for your soil type, use directions, cautions and a list of weeds controlled.</li> <li>• Refer to the Chemical Fallow General Information section.</li> <li>• Tank mix with Sencor 75DF for burndown and residual control of grass and broadleaf weeds.</li> <li>• Refer to the Sencor 75DF label for use rates for your soil type, use directions, cautions, and weeds controlled.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop*-Wheat Rotations (Fall applied in wheat stubble)	Broadcast	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 5 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Tank mix with Atrazine and/or Bladex or Marksman for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>• Spray after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before they develop seed.</li> <li>• Volunteer wheat and downy brome are easier to control with late August to November applications.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop*-Wheat- Rotations (Spring applied prior to planting an annual crop*)  * Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.		Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 5 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Tank mix with Atrazine and/or Bladex for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>• Use at least 2 pints of CYCLONE per acre with a PSI (see page __) for volunteer wheat or downy brome control in the spring.</li> <li>• Tank mix with Bladex for enhanced burndown, however, low rates (less than 2 lbs active) of Bladex may not provide complete control of volunteer wheat and downy brome.</li> <li>• Follow the Atrazine recommendations pertaining to soil pH and recropping intervals.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b><u>CLOVER AND OTHER LEGUMES<sup>1</sup></u></b> Dormant Season  On established plantings: Region A- See map at end of Alfalfa section.  On established plantings: Region B- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1- year-old: Region A- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1- year-old: Region B- See map at end of Alfalfa section.	Broadcast   Broadcast   Broadcast   Broadcast	2 - 3-1/8 pints   1 - 2 pints   1 - 2 pints   1/2 - 1-1/4 pints	Ground: 10 gal Air: 5 gal   Ground: 10 gal Air: 5 gal   Ground: 10 gal Air: 5 gal   Ground: 10 gal Air: 5 gal	60   60   60   60	<ul style="list-style-type: none"> <li>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.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> <li>Do not apply if <u>regrowth</u> after grazing or cutting is more than 2 inches.</li> <li>Do not harvest within 60 days of application.</li> <li>CAUTION: Applications to clover or other legumes that is not dormant, or has 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.</li> <li>Clover or other legumes foliage present at the time of application will be discolored and temporarily stunted.</li> <li>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.</li> <li>Do not apply more than once per season.</li> </ul> <b>California</b> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherd's-purse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherd's-purse, sowthistle or groundsel is present.</li> </ul> <p><sup>1</sup>Other legumes include velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch.</p>
<b><u>CORN</u></b> <b><u>FIELD CORN</u></b> <b><u>POPCORN</u></b> <b><u>SWEETCORN</u></b> <b><u>SEED CORN</u></b> (Used alone)	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 10 gal Air: 5 gal		<ul style="list-style-type: none"> <li>Includes field, fresh, sweet, forage, fodder and popcorn.</li> <li>Seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>CORN</u>  Tank Mixes for No- till/Reduced Till	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 10 gal Air: 5 gal*	-	<ul style="list-style-type: none"> <li>• Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>• For improved burndown or residual control, CYCLONE may be tank mixed with the following herbicides: <ul style="list-style-type: none"> <li>2,4-D Ester (Low Volatile) Harness</li> <li>AAtrex/Atrazine Harness Xtra</li> <li>Banvel Harmony® Extra herbicide</li> <li>Bicep Lasso® herbicide</li> <li>Bicep Lite® herbicide Linex</li> <li>Bladex Lorox</li> <li>Dual® herbicide Modown® herbicide</li> <li>Extrazine Princep</li> <li>Frontier Prowl® herbicide</li> <li>Griffex Simazine</li> <li>Guardaman Surpass EC</li> <li>Surpass 100</li> <li>TopNotch</li> </ul> </li> <li>• CYCLONE may also be tank mixed with AMBUSH® Insecticide.</li> <li>• Refer to respective product label(s) for rates of application, directions for use, limitations, cautions, and for a list of weeds or insects controlled.</li> </ul> <p>*Refer to respective product labels to determine if these products can be applied by air.</p>



Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>FIELD CORN</b> <b>POPCORN</b> <b>SWEETCORN*</b> <b>SEED CORN</b> *Currently not registered for use in California on sweet corn.	Postemergence Directed Spray (Including Hooded or Shielded)	1 - 2 pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6 inches or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts corn plants.</li> </ul> <b>HOODED OR SHIELDED SPRAYERS</b> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b> <ul style="list-style-type: none"> <li>• Apply when corn is at least 10 inches tall with nozzles arranged to spray no higher than the lower 3 inches of corn stalks.</li> <li>• Corn plants shorter than 10 inches may be injured and not recover (corn height measured from soil surface to top of whorl).</li> <li>• For corn greater than 20 inches tall, arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks.</li> <li>• Corn foliage sprayed will be injured, but the crop will recover and develop normally.</li> </ul>
<b>FIELD CORN ONLY</b> (grain, fodder, forage)	Postemergence directed spray USDA witchweed eradication program	2 pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Initiate sprays in late June to early July and repeat in early August if regrowth occurs.</li> <li>• Follow application instructions in postemergence directed spray section above.</li> </ul>
<b>FIELD CORN ONLY</b> (grain, fodder, forage)  2,4-D Amine Tankmix	Postemergence directed spray USDA witchweed eradication program	8 fl oz + 0.5 lbs 2,4-D Amine AE	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Apply as a directed spray onto grassy weeds and witchweed before witchweed blooms. Reapply if regrowth occurs.</li> <li>• Follow application instructions in postemergence directed spray section above.</li> </ul>
<b>COTTON</b> (Used alone)	Preplant or Preemergence Broadcast	2 - 4 pints	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Apply prior to, during or after planting, but before crop emergence.</li> <li>• For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment.</li> <li>• Seeding should be done with a minimum of soil disturbance.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>COTTON</u> Goal® herbicide Tankmix	Preplant or Fallow Bed	1 - 4 pints	Ground or Air: 10 gal	-	<ul style="list-style-type: none"> <li>Refer to Goal label for specific use directions and restrictions, and weeds controlled.</li> </ul>
<u>COTTON</u> Bladex Tankmix	Preplant Broadcast	2 - 4 pints	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>Refer to Bladex label for specific use directions and restrictions and weeds controlled.</li> </ul>
<u>COTTON</u> Other Tankmixes	Preplant or Preemergence			-	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, CYCLONE may be tank mixed with the following herbicides: <ul style="list-style-type: none"> <li>- Cotoran® herbicide</li> <li>- Meturon® herbicide</li> <li>- Cotton-Pro® herbicide</li> <li>- Caparo® herbicide</li> <li>- Diuron</li> <li>- Harmony Extra</li> <li>- MSMA</li> <li>- Zorial® herbicide</li> <li>- Dual</li> <li>- Prowl</li> </ul> </li> <li>When tank mixing with Cotoran DF or Meturon DF, follow mixing instructions in the "Order of Tank Mixing" section carefully and maintain constant agitation.</li> <li>When tank mixing with any of the herbicides listed above, refer to that product's label for specific directions and restrictions and for a list of weeds controlled.</li> </ul>

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>COTTON</u>	Harvest Aid			3	<p><u>Harvest Aid Use Precautions</u> (Applies to all sections)</p> <ul style="list-style-type: none"> <li>Do not pasture livestock in treated fields or feed treated foliage.</li> <li>Do not apply to cotton within 3 days before harvest.</li> <li>Repeat application if necessary. Do not exceed a total of 2 pts. per acre as a harvest aid.</li> <li>May be tankmixed with other cotton harvest aid materials known to be effective by the local expert. Unless otherwise instructed in this label, refer to tankmix product label for rates, directions, limitations and cautions.</li> <li>CYCLONE can be applied in a tankmix with methyl-parathion and/or KARATE® insecticide.</li> <li>Nodes above cracked bolls (NACB) timing is for guidance and is not intended to restrict the local expert in their use of the product.</li> </ul>
<p><u>SOUTHERN COTTON</u></p> <p>Harvest aid for boll opening and defoliation (Tank mix with phosphate and chlorate defoliant)</p>	Broadcast	8 fl. oz. plus 1 pt. phosphate or 1 gal chlorate	Ground: 10 gal Air: 5 gal	7	<ul style="list-style-type: none"> <li>Development of immature bolls will be inhibited.</li> <li>Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> </ul>
<p><u>SOUTHERN COTTON</u></p> <p>Additional tankmixes for boll opening and defoliation</p>	Broadcast	4 - 6 oz.	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>To aid in defoliation and opening of mature bolls, CYCLONE may be tank mixed with the following products:  ACCELERATE® defoliant    FOLEX® defoliant  DEF® defoliant    HARVADE® harvest growth regulant  DROPP® defoliant    PREP™ PGR  ETHEPHON plant growth regulant</li> <li>Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>Refer to tank mix product label for rate, directions, limitations and cautions.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>SOUTHERN COTTON</b>  Post Defoliation-To aid in opening of mature bolls and to desiccate green weeds	Broadcast	1 - 2 pints	Ground: 10 gal Air: 5 gal	3	<ul style="list-style-type: none"> <li>• Use higher rate if weed infestation is heavy or dense.</li> <li>• Apply when 75% or more of the bolls are open and remaining bolls to be harvested are mature.</li> <li>• Development of immature bolls will be inhibited.</li> <li>• After a defoliation or conditioning application has been made, delay desiccation application of CYCLONE approximately 3-7 days to minimize leaf sticking.</li> </ul>
<b>WESTERN COTTON</b>  Harvest aid for boll opening and early defoliation	Broadcast	1/3 - 1/2 pint plus phosphate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Use higher rate of CYCLONE on rank cotton.</li> <li>• Do not use more than 1/2 pt. of CYCLONE for early defoliation as excessive desiccation may occur.</li> <li>• Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB).</li> <li>• Development of immature bolls will be inhibited.</li> <li>• Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing.</li> </ul>
<b>WESTERN COTTON</b>  Harvest aid for boll opening and mid-to- late defoliation	Broadcast	1/2 - 1 pt. alone or tank mix with sodium chlorate or phosphate defoliant and/or other compatible harvest aid products.		3 (Alamo)	<ul style="list-style-type: none"> <li>• In desert cotton areas or on rank vigorous cotton, use the 21 fl oz rate of CYCLONE.</li> <li>• Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB).</li> <li>• Development of immature bolls will be inhibited.</li> </ul>

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>COTTON</b> Stripper or Spindle Harvested  Harvest aid for defoliation and boll opening	Broadcast	3 - 11 fl oz	Ground: 10 gal Air: 5 gal	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED. SLICE BOLLS AND INSPECT THE SEED FOR MATURITY.</li> <li>CYCLONE 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 regulant             </li> <li>May be applied as a split application. Do not exceed a total of 2 pts/Acre.</li> <li>To avoid leaf sticking, apply CYCLONE as a desiccant approximately 3-7 days after defoliation or a conditioning application and 7-14 days before harvest.</li> <li>Cooler temperatures may cause a longer waiting period between application of CYCLONE as a desiccant and defoliation/condition.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> </ul>
<b>COTTON</b>  Late season desiccation	Broadcast	1 - 2 pints	Ground: 10 gal Air: 5 gal	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>May be applied as a split application. Do not exceed a total of 2 pts/Acre.</li> <li>Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB).</li> <li>Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> <li>If a defoliation or conditioning application has been made, delay desiccation application of CYCLONE approximately 3-7 days to minimize leaf sticking.</li> <li>May be tankmixed with other harvest aid materials known to the local expert to be effective.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b><u>COTTON</u></b>  Desiccation of Regrowth	Broadcast	1 - 2 pints	Ground: 10 gal Air: 5 gal	3	<ul style="list-style-type: none"> <li>• Use to desiccate regrowth occurring after defoliation or desiccation.</li> <li>• Regrowth is difficult to control, therefore, thorough coverage with the full recommended rate is necessary.</li> <li>• Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete.</li> <li>• Use higher rate if regrowth is excessive.</li> </ul>
<b><u>EASTER LILIES</u></b> (Field grown)	Preemergence	2 - 4 pints (use a minimum of 3 pts. in California)	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Do not apply more than twice per season.</li> </ul>
<b><u>FALLOW LAND</u></b>  Prior to planting of any crops approved on this labelling for preplant/ preemergence use	Preplant Broadcast to Fallow Land	2 - 4 pints	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes.</li> <li>• Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges.</li> <li>• Use the higher rate for weeds approaching the maximum size of 6".</li> <li>• Do not make more than two applications during the fallow period.</li> <li>• Allow maximum weed emergence prior to application to maximize the benefit of this use.</li> <li>• Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.</li> </ul>
<b><u>GRASSES</u></b> (For Seed) (For Use in Seedbed Preparation)	Preplant, At Planting, or Preemergence	2 - 4 pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Prepare the seedbeds and allow weeds to germinate.</li> <li>• Apply CYCLONE when weeds are at the 3 to 5 leaf stage.</li> <li>• Repeat applications as necessary prior to grass emergence.</li> <li>• Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.</li> </ul>
<b><u>GUAR</u></b> (Preharvest desiccation)	Preharvest	2 pints	Ground: 10 gal	4	<ul style="list-style-type: none"> <li>• Apply after the pods are fully mature.</li> <li>• Do not graze treated areas or use the treated forage for animal feed.</li> </ul>
<b><u>GUAVA</u></b>	Directed Spray	4 pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Do not allow spray to contact green stems, fruit or foliage.</li> <li>• Do not graze treated areas.</li> <li>• Do not feed cover crops grown in treated areas to livestock.</li> <li>• For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>HOPS</b> (ID, OR, & WA only)	Directed Spray and/or Suckering and Stripping	2 pints	Ground: 10 gal	14	<ul style="list-style-type: none"> <li>• Retreatment or spot treatment may be necessary.</li> <li>• Do not apply more than 3 times per season.</li> <li>• Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result.</li> <li>• Do not allow animals to graze in treated hopyards.</li> <li>• Hop vine refuse and silage may be fed to livestock.</li> <li>• For suckering and stripping, spray only the basal 2 ft. of the vines. Repeat as necessary.</li> <li>• Experience with varieties other than CASCADE, YAKIMA CLUSTER, and BULLION is limited. If using CYCLONE on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs.</li> <li>• Chemical Pruning: To burn back existing vines and obtain even emergence of subsequent vines, spray when vines are less than 3 ft tall.</li> <li>• APPLICATION TO HOP VINES LESS THAN 6 FT TALL MAY CAUSE UNACCEPTABLE INJURY.</li> </ul>
<b>MINT</b> (Peppermint, Spearmint)	Dormant Season	1½ - 3 pints	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• For suppression of weeds such as Italian ryegrass, prickly lettuce, groundsel, chickweed, downy brome and bluegrass.</li> <li>• Apply when crop is dormant before spring growth begins and when weeds are less than 6 inches tall.</li> <li>• Do not apply more than 2.4 pts per acre per dormant season.</li> <li>• May be tank mixed with Sinbar® 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. Refer to the Sinbar label for rates, directions, and cautions and for a list of weeds controlled.</li> </ul>
<b>ONIONS</b> (seeded) <b>AND GARLIC</b>	Preplant or Preemergence	2 - 4 pints (use a minimum of 3 pts. in California)	Ground: 10 gal	60 200 (CA only)	<ul style="list-style-type: none"> <li>• Use the higher rate for heavy weed infestations or wild oat control. Apply only one application per season at the 5 pt per acre dosage.</li> <li>• Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence.</li> <li>• Apply a maximum of 5 pt per acre per season.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>PASSION FRUIT</u>	Directed Spray	4 pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Use a shield or wrap vine if bark is still green at application time.</li> <li>• If application is to be made during harvest season, pick all fruit off the ground prior to application.</li> <li>• Do not allow animals to graze on treated areas.</li> <li>• Retreatment or spot treatment may be necessary.</li> </ul>
<u>PEANUTS</u>	Broadcast At Ground Crack Postemergence	8 - 16 fl oz	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack.</li> <li>• For at ground crack use, CYCLONE can be tank mixed with Pursuit® herbicide or Dual for residual weed control. Consult the Pursuit or Dual label for a list of weeds controlled, rates of application, and precautions.</li> <li>• Make no more than two applications per season and do not apply a total of more than 16 fl oz of product per acre per season.</li> <li>• Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>• Do not apply by air.</li> </ul>
<u>PEANUTS</u>  Basagran® herbicide tankmix	Broadcast At Ground Crack Postemergence	8 - 16 fl oz	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• For improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida, tank mix CYCLONE with Basagran at 1 pint/acre.</li> <li>• This tankmix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack.</li> <li>• Make no more than two applications per season and do not apply a total of more than 16 fl oz of product per acre per season.</li> <li>• Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>• Refer to the Basagran label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>• Do not apply this tankmix if peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment as injury may be enhanced and/or prolonged.</li> <li>• Do not apply this tankmix during prolonged periods of drought or unseasonably cold weather as unsatisfactory weed control may result.</li> <li>• Do not apply by air.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>PEANUTS</b>  Butyrac® herbicide or Butoxone™ herbicide 200 tankmix	Broadcast Postemergence	8 - 16 fl oz	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix CYCLONE with 8-16 oz (0.125-0.25 lbs) per acre of Butyrac or Butoxone 200.</li> <li>Make no more than two applications per season and do not apply a total of more than 16 fl oz of product per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the complete Butyrac or Butoxone 200 label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply by air.</li> </ul>
<b>PIGEON PEAS</b> (Puerto Rico only)	Directed Spray	2 pints	Ground: 10 gal	60	<ul style="list-style-type: none"> <li>Avoid contact with pigeon pea foliage.</li> <li>Do not make more than 1 application per season.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> <li>Cannery waste can be fed to livestock.</li> </ul>
<b>PINEAPPLE</b>	Directed Spray	2 - 4 pints	Ground: 10 gal	20	<ul style="list-style-type: none"> <li>Retreatment may be necessary on more mature weeds.</li> <li>Do not exceed 3 applications per season.</li> </ul>
<b>POTATO</b>	Preplant or Preemergence Broadcast	1 - 2 pints	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>Apply up to ground cracking, before potatoes have emerged.</li> </ul>
<b>POTATO</b>  (California, Washington, Oregon, Idaho only) (Used alone)	Preplant Broadcast	8 - 16 fl oz	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>POTATO</b>  Preharvest vine killing and weed desiccation (Not for use in the states of Alabama, Arkansas, Georgia, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee and Texas)	Broadcast	1 - 2 pints	Ground: 20 gal	3	<ul style="list-style-type: none"> <li>• Begin application when leaves begin to turn yellow.</li> <li>• Immature or drought-stressed potato foliage are tolerant to CYCLONE. Desiccation will not be complete under these conditions.</li> <li>• Use 2½ pts/acre rate where quick vine kill is desired.</li> <li>• Use two applications of 1½ pts/acre when vine growth is dense. Split applications must be applied a minimum of five days apart.</li> <li>• Do not pasture livestock in treated potato fields.</li> <li>• Do not use on muck or peat soils to avoid injury to subsequent crops.</li> <li>• DO NOT use to desiccate potato vines when potatoes are to be stored or used for seed as this use may result in tuber decomposition or failure of seed pieces to germinate and grow normally.</li> <li>• Do not exceed 5 pts/acre per season.</li> </ul>
<b>SAFFLOWER</b>	Preplant or Preemergence Broadcast or Banded Over Row	2 - 4 pints (use a minimum of 3 pts. in California)	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Apply before, during, or after planting but before crop emergence.</li> </ul>
<b>SMALL FRUITS</b> Blackberries Boysenberries Raspberries Blueberries  Strawberries	Postemergence Directed Spray   Postemergence Directed Spray	2 - 4 pints   2 pints	Ground: 50 gal   Ground: 20 gal	-   21	<ul style="list-style-type: none"> <li>• Apply before emergence of new canes or shoots as injury to those canes or shoots can occur.</li> <li>• Apply as a coarse spray to avoid crop injury from fine spray mist.</li> <li>• Apply by directing spray between the rows and using shields to prevent spray contact with crop plants.</li> <li>• Do not allow spray to contact strawberry plants as injury or excessive residues may result.</li> <li>• Do not apply more than 3 times per season.</li> <li>• Do not graze livestock in treated areas.</li> </ul>
<b>SMALL GRAINS</b> (Barley, wheat)	Preplant or Preemergence	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 10 gal Air: 5 gal	-	

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b><u>SMALL GRAINS</u></b> (Wheat Only) Hoelon 3EC Tankmix	Preplant or Preemergence	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4pts	Ground: 5 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• A tankmix with Hoelon 3EC will improve grass control.</li> <li>• Apply when weeds are actively growing and 1-6 inches in height. Weeds 6 inches or taller may not be controlled.</li> <li>• Do not apply this tankmix to Barley as crop injury may result.</li> </ul>
<b><u>SORGHUM</u></b> (Grain)	Preplant or Preemergence Broadcast or Band	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Seedbeds should be formed as far ahead of planting as possible to allow maximum weed and grass emergence.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
<b><u>SORGHUM</u></b> (Grain)  Atrazine & 2,4-D ester [Low Volatile] tankmix	Preplant or Preemergence	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• CYCLONE 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. Refer to the specific tankmix herbicide label(s) for rates, directions, limitations, and cautions and a list of weeds controlled.</li> </ul>
<b><u>SORGHUM</u></b> (Grain)  Harmony Extra tankmix	Preplant or Preemergence	1 - 4 pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• CYCLONE may be tank mixed with Harmony Extra for improved preemergence or residual weed control.</li> <li>• Refer to the Harmony Extra label for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>SORGHUM</u> (Grain)	Postemergence Directed Spray (Includes Hooded or Shielded)	1 - 2 pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6 inches or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts sorghum plants.</li> <li>• Do not exceed 2 postemergence-directed applications per season or exceed a total of 8 pints CYCLONE per season.</li> </ul> <p><u>HOODED OR SHIELDED SPRAYERS</u></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><u>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</u></p> <ul style="list-style-type: none"> <li>• Apply when sorghum is at least 12 inches tall when naturally standing.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Use precision directed-spray application equipment adjusted so that no more than the lower 3 inches of the sorghum stalk is contacted by the application spray.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> <li>• Do not harvest forage, fodder, silage, or hay before the soft dough stage of the grain.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>SOYBEANS</u>	Preplantor Preemergence	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>Do not exceed a total of 6 pints of CYCLONE per season.</li> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, CYCLONE may be tank mixed with the following herbicides: <ul style="list-style-type: none"> <li>2,4-DB Linex</li> <li>Canopy Lorox Sencor</li> <li>Dual Lorox Plus Surflan® herbicide</li> <li>Gemini Modown Turbo® herbicide</li> <li>Goal Preview</li> <li>Harmony Extra Prowl</li> <li>Lasso Pursuit herbicide</li> <li>Lexone Scepter® herbicide</li> </ul> </li> <li>The rate of CYCLONE to be used in these tank mixtures is dependent on weed height and growing conditions. Use the highest recommended rate of CYCLONE under dry conditions or where the weed canopy is dense. Refer to the specific tank-mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>The lower rate may be used when weeds are less than 4" tall and a selective post-emergence spray or cultivation will be made within 3 weeks after planting.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod)</li> </ul>
<u>SOYBEANS</u>  2,4-D ester (Low Volatile)* tankmix	Preplant or Preemergence	Weeds 1-3": 1 - 2½ pts Weeds 3-6": 2½ - 3 pts Weeds 6": 3 - 4 pts	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs ai/A at least 7 days prior to planting.</li> <li>Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs ai/A at least 30 days prior to planting.</li> <li>Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not prepared to accept the results of soy bean injury including possible loss of stand and yield.</li> <li>Do not use the amine formulation as CYCLONE activity may be reduced.</li> <li>May be tank mixed with residual herbicides listed above.</li> <li>Refer to the 2,4-D ester (Low Volatile) label for a list of rates, directions, limitations and cautions and for a list of weeds controlled.</li> </ul>

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>SOYBEANS</u>	Postemergence, Directed Spray (Includes Hooded or Shielded)	1/3 to 2/3 pts	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• For control of seedling johnsongrass, crabgrass, goosegrass, brachiaria, Texas millet and pigweed less than 2 inches tall, use the lower rate of CYCLONE.</li> <li>• For control of 2-4 inch red rice, <i>Brachiaria</i>, barnyard grass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 8 fl oz of CYCLONE.</li> <li>• For control of 2-3 inch sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed, use 8 fl oz of CYCLONE.</li> <li>• For control of 2-4 inch grasses in mixture with common cocklebur, morningglory, and red rice, apply CYCLONE at 8 fl oz per acre plus 0.2 lb active ingredient per acre of a 2,4-DB formulation.</li> <li>• Refer to the 2,4-DB label for directions, limitations, and cautions.</li> <li>• Do not graze or harvest for forage or hay.</li> <li>• If needed make a second and final application 7-14 days later.</li> </ul> <p><u>HOODED OR SHIELDED SPRAYERS</u></p> <ul style="list-style-type: none"> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> <li>• Use higher rate on larger (&gt; 6 inches) or hard to control weeds. Weeds 6 inches or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray intentionally or accidentally (including drift of fine droplets) contacts the plants.</li> </ul> <p><u>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</u></p> <ul style="list-style-type: none"> <li>• Do not treat if soybeans are less than 8 inches tall.</li> <li>• Use precision directed spray application equipment adjusted so that no more than the lower 3 inches of the soybean plant is contacted by the application spray.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>

6/10/97

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>SOYBEANS</u>	Harvest Aid	½ - 1 pint	Ground: 20 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>Indeterminant varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less.</li> <li>Determinant varieties: Apply when plants are mature, i.e. beans are fully developed, 1/2 of leaves have dropped, and remaining leaves are yellowing.</li> <li>Immature soybeans will be injured.</li> <li>Mature cocklebur, especially drought-stressed plants, are tolerant to CYCLONE and desiccation will not be complete. Always use the higher rate for cocklebur.</li> <li>Do not apply within 15 days of harvest.</li> <li>Do not graze or harvest for forage or hay.</li> </ul>
<u>SUGAR BEETS</u>	Preplant or Preemergence	2 - 4 pints	Ground: 10 gal Air: 5 Gal	-	<ul style="list-style-type: none"> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control.</li> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> </ul>
<u>SUGARCANE</u>	Postemergence Directed Spray (Includes Hooded or Shielded)				<p><u>General Comments</u></p> <ul style="list-style-type: none"> <li>Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction.</li> <li>Make a second and final application, if necessary, when new weed growth is 2-6 inches high.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> </ul>
-- Florida --		2 pints	Ground: 50 gal	-	<ul style="list-style-type: none"> <li>For optimum results, apply in early spring (March-April) when weeds are small.</li> <li>Do not apply after June 1 as cane growth may be stunted and yields reduced.</li> </ul>
-- Hawaii --		2 pints	Ground: 20 gal	-	<ul style="list-style-type: none"> <li>Do not apply after cane rows have closed in.</li> </ul>
-- Louisiana --		1 - 2 pints	Ground: 20 gal	30	<ul style="list-style-type: none"> <li>For tiller control, apply when tillers are less than 18 inches high.</li> <li>Use the higher rate for heavier weed infestations or tiller growth.</li> </ul>
-- Florida & Texas --	Harvest Aid	8 - 16 fl oz	Air: 5 gal	-	<ul style="list-style-type: none"> <li>Use higher rate under cool, cloudy weather conditions.</li> <li>Apply 3-14 days before burning and harvest.</li> </ul>

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>SUNFLOWER</u>	Preplant or Preemergence Broadcast or Banded Over Row	2 - 4 pints (use a minimum of 3 pts. in California)	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Apply before, during, or after planting but before crop emergence.</li> </ul>
<u>SUNFLOWER</u>	Preharvest Desiccation Broadcast	1 - 2 pts	Ground: 10 gal Air: 5 gal	7	<ul style="list-style-type: none"> <li>• Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this corresponds to the time when the back of the heads are yellow and the bracts are turning brown.</li> <li>• Do not graze treated areas or feed treated forage to livestock.</li> <li>• Use the higher rate when crop stands or weed infestations are heavy.</li> </ul>
<u>TARO, DRYLAND</u> (Hawaii Only)	Postemergence Directed Spray	1½ - 2½ pts	Ground: 10 gal	180	<ul style="list-style-type: none"> <li>• Do not allow spray to contact the taro plants as injury may result.</li> <li>• Make the first application when weed growth is 1 to 4 inches high.</li> <li>• Weeds emerging after the application will not be controlled.</li> <li>• A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.</li> </ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>TREES AND VINES</b> Orchards, Vineyards, Windbreak, Shade & Ornamental Trees Acerola Apples Apricots Avocados Bananas Beechnut Brazil Nut Butternut Cashew Cherries Chestnut Chinquapin Citrus Coffee Figs Filberts Grapes Hickory Nut Kiwi Fruit Macadamia Nuts Nectarines Olives Papayas Peaches Pears Pecans Pistachios Plums	Directed Spray	2 - 4 pints (use a minimum of 3 pts. in California)	Ground: 10 gal	Kiwi Fruit 14 Pistachios 7 Plums 28 Olives 13 Figs 13	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers), fruit or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when figs, nuts or olives to be harvested are on the ground.</li> <li>For grapes - treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage.</li> <li>For kiwi fruit - do not treat more than 3 times per year.</li> <li>For pistachios - do not exceed two applications after shells split.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary.</li> <li>For plums - do not harvest within 28 days after application and do not exceed 3 applications per season.</li> <li>For figs - do not harvest within 13 days after application and do not exceed 5 applications per season.</li> <li>For olives - do not harvest within 13 days after application and do not exceed 4 applications per season.</li> </ul>
<b>TREES AND VINES</b> Prunes Walnuts Other shade and ornamental trees such as arbovitae, ash, elm, fir, oak, pine, etc.					

4/9/94

Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b><u>TREES AND VINES</u></b>  Tankmixes	Directed Spray	2½ - 5 pts (use a minimum of 3 pts. in California)	Ground: 10 gal	Refer to other TM labels	<ul style="list-style-type: none"><li>● CYCLONE may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. Always refer to other herbicide label(s) for respective precautions, limitations, restriction, dates and directions for use and weeds controlled.</li><li>● CYCLONE may be tank mixed with the following herbicides: Goal    </li></ul>

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Crop	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b><u>VEGETABLES</u></b> Tomatoes Peppers	Directed Spray	2 pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• For control or suppression of emerged weeds between rows after crop establishment.</li> <li>• Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Apply when weeds are succulent and weed growth is less than 6 inches.</li> <li>• Do not apply more than 3 applications per season.</li> <li>• Do not allow animals to graze in treated areas.</li> <li>• Do not harvest tomatoes within 30 days after application.</li> </ul>
<b><u>VEGETABLES</u></b> Lettuce Melon Sugar Beets Tomatoes (California, Washington, Oregon, Idaho only)	Broadcast	8 - 16 fl oz	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• For control of volunteer barley in preformed seedbeds.</li> <li>• Do not harvest tomatoes within 30 days after application.</li> </ul>
<b><u>VEGETABLES</u></b> Rhubarb	Dormant	2 - 4 pints (use a minimum of 3 pts. in California)	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Apply during dormant season before buds in crown begin to grow.</li> <li>• Do not make more than 2 applications per season.</li> </ul>

## ALFALFA

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

For Control of:	Rate/Acre	
	For Suppression	For Control
Spikeweed (4 in. tall or less)	½ pt.	1 - 2 pts.
Volunteer Small Grain (8 in. tall or less)	½ to 1 pt.	2 pts
Fiddleneck (6 in. tall or less)	½ to 1 pt.	2 pts.
Shepherd's-purse	1 - 2 pts.	-
Annual Bluegrass	-	1 to 2 pts.
Chickweed	-	1 to 2 pts.
Red Maids (6 in. tall or less)	-	1 to 2 pts.

Do not use the ½ pt rate unless the alfalfa has at least 3 trifoliate leaves; the 1 pt rate unless the alfalfa has 6 trifoliate leaves; or rates over 1 pt unless there are 9 trifoliate leaves.

## RESIN SOAKING

Pines (Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and 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 CYCLONE 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, non-stagnated stands, either natural or planted. In stagnated stands or commercial timber stands, plan treating with CYCLONE herbicide not sooner than three years after a commercial thinning.

**Application Directions** - Apply CYCLONE 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 one-inch wide streak of bark about 1 to 2 feet 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 2 to 6 ml.) of CYCLONE solution (1 to 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 (1/3 of circumference). For a 9-inch diameter tree, 3 ml. of spray will cover the 1-inch wide streak. Using 3 ml. of a 2 or 4% CYCLONE solution will result in application of 60 or 120 mg. CYCLONE 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 CYCLONE and tree harvest should be a minimum of 6 months and preferably from 12 to 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 CYCLONE 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:**

CYCLONE treatment can result in reduced stem growth during the interval between treatment and tree harvest.

Dilution Table for CYCLONE (2.0 lbs. cation per gallon):	
Concentration of Cation Desired (Wt./Wt. Basis)	To 1½ Gallon of CYCLONE add the following No. Gals. of Water:
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

**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 area 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.

Other Uses	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b><u>CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS</u></b> (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs).	Broadcast	2 - 4 pints	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>For improved emerged weed control or extended weed control, CYCLONE may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> </ul>
<b><u>NONCROP USES</u></b>	Broadcast or Spot Treatment	2 - 4 pints (use a minimum of 3 pts in California)	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>For use in noncrop areas such as public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, fence lines or similar noncrop areas.</li> <li>Avoid contact with the foliage of ornamentals or desired plants.</li> <li>Repeat as necessary.</li> </ul>
<b><u>PASTURE RESEEDING</u></b> For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	Broadcast	1 - 2 pints	Ground: 10 gal Air: 5 gal	See specific geographic recommend- ation	<p><u>West of Cascade and Sierra Nevada Mountains</u></p> <ul style="list-style-type: none"> <li>Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth.</li> <li>For best seeding results, apply on moderately to heavily grazed areas.</li> <li>Do not use in areas with heavy sod and weed growth.</li> </ul> <p><u>East of Rocky Mountains</u></p> <ul style="list-style-type: none"> <li>Use the 2 pint rate on vigorous or coarse sod species such as brome grass.</li> <li>Apply prior to, or at time of seeding grasses or forage legumes.</li> <li>Apply only to grazed or mowed pastures not more than 2 inches in height at time of treatment.</li> </ul>

Other Uses	Use Pattern	CYCLONE Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
		1 - 2 pints	Ground: 10 gal Air: 5 gal		<u>Bermudagrass or Bahiagrass Sod</u> <ul style="list-style-type: none"> <li>• Apply in late summer or early fall to sod not exceeding 2 inches in height.</li> <li>• For control of emerged Little Barley, apply in February or March before the midboot stage of Little Barley.</li> </ul>
		1 - 2 pints	Ground: 10 gal Air: 5 gal		<u>Bermudagrass and Coastal Bermudagrass Pastures</u> <ul style="list-style-type: none"> <li>• Apply when bermudagrass is dormant.</li> <li>• For control of little barley, apply before the mid-boot stage.</li> <li>• Do not mow for hay until 40 days after treatment.</li> </ul>
For Control of Endophyte-Fungus- Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	Broadcast (Split Application)	1½ - 2½ pints followed by 1½ - 2½ pints	Ground: 10 gal	-	<ul style="list-style-type: none"> <li>• Use split applications of 10 to 21 days apart if necessary.</li> <li>• Do not exceed 5 pints per acre total in preparation for reseeding.</li> <li>• For spring plantings, the initial application of 1½ - 2½ pts may be made the previous fall.</li> <li>• Apply when fescue is actively growing and no more than 4 inches high.</li> <li>• To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.</li> </ul>

02/05/99



Conversion Table CYCLONE to be Applied			
Pints/Ac	Fl Oz/Ac	Lb ai/Ac	Ac/Gal
-	7	.08	18.3
-	11	.13	11.6
-	21	.25	6.1
1½	24	.28	5.3
2	32	.38	4.0
2½	40	.47	3.2
3	48	.56	2.7
4	64	.75	2.0
5	80	.94	1.6

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## STORAGE AND DISPOSAL

**PESTICIDE STORAGE:** Do not contaminate water, food, or feed by storage or disposal. Store at temperatures above 32°F. For help with any spill, leak or fire involving this material, call CHEMTREC 1-800-424-9300.

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

**RECYCLABLE/REFILLABLE CONTAINERS:** Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices. After filling and before transporting, check for leaks. Do not refill or transport damaged or leaking container.

**CONTAINER DISPOSAL:** Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

**Container is not safe for food, feed or drinking water!**

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