

# Acumen<sup>®</sup> Microcap

## Herbicide

**TENKŌZ**

### For Use in Selected Crops

**ACTIVE INGREDIENT:**

Pendimethalin, N-(1-ethylpropyl)-3,4-dimethyl-2, 6-dinitrobenzenamine ..... 38.7%

**OTHER INGREDIENTS:** ..... 61.3%

**TOTAL:** ..... 100.0%

(1 gallon contains 3.8 lbs. of microencapsulated pendimethalin in an aqueous carrier.)

EPA Reg. No. 70506-230-55467

EPA Est. No. 41876-IND-004

## KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCIÓN

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.)

**FIRST AID - If in eyes** • Hold eye open and rinse slowly and gently with water for 15-20 minutes.  
• Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. For medical treatment, call Rocky Mountain Poison and Drug Safety at 1-866-673-6671.

See inside for additional Precautionary Statements and complete Directions For Use.

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.**

Distributed By:

**Tenkōz, Inc.**

1725 Windward Concourse

Suite 410

Alpharetta, GA 30005

Made in India

**NET CONTENTS: 2.5 GALLONS**

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

### CAUTION

Causes moderate eye irritation. Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing.

#### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

Follow manufacturer's instruction for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

#### Engineering Controls

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

#### USER SAFETY RECOMMENDATIONS

Users should:

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

#### ENVIRONMENTAL HAZARDS

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

**NON-TARGET ORGANISM ADVISORY STATEMENT:** This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

#### Endangered Species Protection

This product may have effects on federally listed threatened or endangered plant species or their critical habitat. When using this product, you must follow the measures contained in the Endangered Species Protection bulletin for the county or parish in which you are applying the pesticide. To determine whether your county or parish has a Bulletin, and to obtain the Bulletin, consult <https://www.epa.gov/endangered-species>, or call 1-844-447-3813 no more than 6 months before using this product. Applicators must use Bulletins that are in effect in the month in which the pesticide will be applied. New Bulletins will generally be available from the above sources 6 months before their effective dates.

If endangered plant species occur in proximity to the application site, the following mitigation measures are required:

- If applied by ground, leave an untreated buffer zone of 200 feet. The product must be applied using a low boom (20 inches above the ground) and ASABE fine to medium/coarse nozzles.
- If applied by air, leave an untreated buffer zone of 170 feet. Must use straight-stream nozzles (D-6 or larger); wind can be no more than 8 mph, and release height must be 15 feet or less.

#### DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This label must be in the possession of the user at the time of pesticide application.

Observe all cautions and limitations in this label and the labels of products used in combination with ACUMEN® MICROCAP Herbicide. The use of ACUMEN MICROCAP Herbicide not consistent with this label can result in injury to crops, animals, or persons. Keep containers closed to avoid spills and contamination.

**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 protection.

**DO NOT** enter or allow other people (or pets) to enter the treated area until sprays have dried.

#### If material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

#### AGRICULTURAL USE REQUIREMENTS

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

**DO NOT** enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

**EXCEPTION:** If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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

## PRODUCT INFORMATION

ACUMEN MICROCAP Herbicide is a selective herbicide for controlling most annual grasses and certain broadleaf weeds as they germinate. **Table 1** lists the approved crop use sites. **Table 2** contains the complete list of controlled weeds. ACUMEN MICROCAP Herbicide will not control established weeds.

**Table 1. Use Sites**

alfalfa	lentils and peas
artichoke	melons
asparagus	mint
Brassica head and stem vegetables	nut trees, bearing and non-bearing
Brassica leafy greens	olive trees, bearing and non-bearing
caneberries, bearing and non-bearing	onions and shallots (dry bulb, green)
carrots	peanuts
carrots grown for seed	perennial grasses grown for seed
citrus fruit trees, bearing and non-bearing	pistachio
corn (field, pop, field seed, pop seed, fresh sweet)	pome fruit trees, bearing and non-bearing
cotton	pomegranate
date palm trees, non-bearing	potatoes
dry bulbs (garlic, onion, shallot)	rice
edible beans	safflower
fallow	small fruit climbing vines, bearing and non-bearing
farmsteads	soybeans
fig trees, non-bearing	strawberries and other low-growing berries
forage grasses (cool-season, warm-season)	stone fruit trees, bearing and non-bearing
fruiting vegetables	sugarcane
garlic	sunflowers and other oilseeds
grain sorghum	tobacco
grape, bearing and non-bearing	triticale
vineyards	vegetable soybean (edamame)
hops	wheat
leaf lettuce	
leeks	

**Table 2. Weeds Controlled (continued)**

(See crop sections for additional weeds controlled)

Weeds controlled with ACUMEN MICROCAP Herbicide APPLIED UP TO 4 PTS/A	
Grasses (continued)	
Jointed goatgrass* <sup>1</sup>	Shattercane*
Oat, wild*	Signalgrass*
Panicum, fall	Wild proso millet*
Panicum, Texas	Witchgrass
Sandbur, field	Woolly cupgrass*
Broadleaves	
Amaranth, Palmer	Mustard, black <sup>2</sup>
Bugloss, small <sup>1</sup>	Pigweed species
Carpetweed	Purslane
Chickweed, common*	Pusley, Florida
Henbit	Shepherdspurse*
Kochia	Smartweed, Pennsylvania*
Lady's thumb	Spurge, annual
Lambsquarters, common	Velvetleaf*
Lambsquarters, slimleaf <sup>2</sup>	Waterhemp species
London rocket*	
* Suppression, but controlled when ACUMEN MICROCAP Herbicide use rate exceeds 4 pts/A.	
<sup>1</sup> Not suppressed or controlled in California	
<sup>2</sup> Not controlled in California	

**Table 2. Weeds Controlled**

(See crop sections for additional weeds controlled)

Weeds controlled with ACUMEN MICROCAP Herbicide APPLIED UP TO 4 PTS/A	
Grasses	
Annual ryegrass*	Foxtail, green
Barnyardgrass	Foxtail, yellow
Canarygrass* <sup>2</sup>	Goosegrass
Cheat* <sup>2</sup>	Hairy chess* <sup>1</sup>
Crabgrass	Itchgrass*
Crowfootgrass	Italian ryegrass*
Downy brome*	Japanese brome* <sup>1</sup>
Foxtail, giant	Johnsongrass (seedling)

(continued)

Weeds controlled with ACUMEN MICROCAP Herbicide APPLIED AT 4 PTS/A OR GREATER	
Grasses	
Annual bluegrass	Lovegrass
Browntop panicum	Sprangletop, Mexican
Grass, Guinea <sup>2</sup>	Sprangletop, red
Junglerice	Swollen fingergrass
Broadleaves	
Dodder <sup>†</sup>	Prostrate, knotweed
Fiddleneck	Puncturevine
Morningglory**	
<sup>†</sup> For optimum dodder control, use the highest labeled rate of ACUMEN MICROCAP Herbicide specified in the specific crop.	
** Suppression	
<sup>2</sup> Not controlled in California	

## MODE OF ACTION

ACUMEN MICROCAP Herbicide is a meristematic inhibitor that interferes with the plant's cellular division or mitosis. This and/or other products with the meristematic inhibiting mode of action may not effectively control naturally occurring biotypes of some of the weeds listed on this label. A weed biotype is a naturally occurring plant within a given species that has a slightly different, but distinct, genetic makeup from other plants. Other herbicides with the meristematic inhibiting mode of action include other dinitroaniline herbicides, such as trifluralin. If naturally occurring meristematic inhibiting resistant biotypes are present in a field, apply a tank mix of ACUMEN MICROCAP Herbicide and/or any other meristematic inhibiting mode of action herbicide or apply sequentially with an appropriate-registered herbicide having a different mode of action to ensure control.

## Weed Resistance Management

For resistance management, ACUMEN MICROCAP Herbicide is a Group 3 herbicide. Any weed population may contain or develop plants naturally resistant to ACUMEN MICROCAP Herbicide and other Group 3 herbicides. Weed species with acquired resistance to Group 3 may eventually dominate the weed population if Group 3 herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance take one or more of the following steps:

- Rotate the use of ACUMEN MICROCAP Herbicide or other Group 3 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field. Whenever possible incorporate multiple weed control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g. higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Fields should be scouted before application to identify the weed species present and their growth stage to determine if the intended application will be effective. Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product and switch to another management strategy or herbicide with a different mode of action (MOA), if available. Treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes. To the extent possible do not allow weed escapes to produce seeds, roots, or tubers.

- Contact your local extension specialist, certified crop advisors, and/or manufacturer for additional herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes. Report any incidence of non-performance of this product against a particular weed species to your retailer or Tenkoz at 1-770-343-8509.

## APPLICATION RATE

Use rates for ACUMEN MICROCAP Herbicide when used alone, in tank mix, or for sequential applications are given in **Crop-specific Information**. Use rates of this product vary by soil texture and organic matter. **Table 3** lists the soil texture groupings referred to in this label.

**Table 3. Soil Texture Groups**

<b>Coarse</b>	Sands loamy sands sandy loams
<b>Medium</b>	sandy clay loams* sandy clays loams silt loams silts
<b>Fine</b>	silty clay loams* silty clays clay loams clays
* These soils are sometimes considered transitional soils and may be classified as either medium-textured or fine-textured soils.	
If ACUMEN MICROCAP Herbicide is used on <b>peat and muck soils</b> , weed control may be inconsistent and/or reduced. Use the maximum labeled use rate allowed in the specific crop.	

## APPLICATION TIMINGS

ACUMEN MICROCAP Herbicide will provide most effective weed control when applied by ground or aerial equipment and subsequently incorporated into soil by rainfall, sprinkler irrigation, or mechanical tillage prior to weed seedling germination. ACUMEN MICROCAP Herbicide can also be applied through chemigation, including flooded basin irrigation systems.

ACUMEN MICROCAP Herbicide may be applied

- preplant surface,
- preplant incorporated,
- surface incorporated,
- preemergence,
- early postemergence,
- postemergence incorporated (CULTI-SPRAY)
- layby treatment.

See **Crop-specific Information** for specific application directions and restrictions by crop.

<b>Preplant Surface Application</b>	For use in minimum tillage or no-tillage production systems, apply alone or in tank mixes up to 45 days before planting. When making early preplant surface applications (15 to 45 days prior to planting), use a tank mix of ACUMEN MICROCAP Herbicide with other herbicides registered for use in a given crop, or follow this application with another postemergence herbicide application. Rainfall or sprinkler irrigation after application is required to move this product into the upper soil surface where weed seeds germinate.
<b>Preplant Incorporated Application</b>	Apply and incorporate into the upper (1 inch to 2 inches) soil surface up to 60 days before planting. Use an implement capable of giving uniform incorporation; two-pass incorporation usually results in a more consistent result.
<b>Surface Incorporated Application</b>	Uniformly apply as a broadcast or banded treatment to soil surface underneath established trees and/or in ground areas between trees rows. Incorporate into upper (1 inch to 2 inches) soil surface using either rainfall, sprinkler irrigation, or shallow mechanical incorporation using an implement capable of giving uniform incorporation; two-pass mechanical incorporation usually results in a more consistent result.
<b>Preemergence Surface Application</b>	Broadcast treatment uniformly onto the soil surface at planting, and up to 2 days after planting. Rainfall, sprinkler irrigation, or shallow mechanical incorporation after application is required to move this product into the upper soil surface where weed seeds germinate. If adequate rainfall or irrigation does not occur, or soil crusting or soil compaction has occurred, and weed seedling emergence begins, a shallow cultivation or rotary hoeing will improve performance. Make sure that crop seeds are below the tilled soil surface area.
<b>Early Postemergence Application</b>	ACUMEN MICROCAP Herbicide must be applied prior to weed seedling emergence or in a tank mix with products that control the emerged weeds. Refer to <b>Crop-specific Information</b> for specific postemergence application instructions by crop.
<b>Postemergence Incorporated Application (CULTI-SPRAY)</b>	Prior to application, crop must be cultivated in such a manner as to throw at least 1 inch of soil over the base of the crop plants. This will prevent direct contact of ACUMEN MICROCAP Herbicide and the zone of brace root formation. ACUMEN MICROCAP Herbicide must be applied broadcast with a ground sprayer when crop is at least 4 inches tall up to layby. Use drop nozzles if crop foliage will prevent uniform coverage of the soil surface within the rows. Thoroughly and uniformly incorporate ACUMEN MICROCAP Herbicide treatments into the soil: 1. With a sweep-type or rolling cultivator set to provide thorough incorporation in the top 1 inch of soil, or 2. With adequate overhead irrigation water or rainfall. See <b>Crop-specific Information (Corn and Grain Sorghum)</b> for more details on (CULTI-SPRAY) application.
<b>Layby Application</b>	Apply directly to the soil between rows as a directed spray following the last normal cultivation (layby). See <b>Crop-specific Information</b> for more details on layby application.
<b>Split Application</b>	Apply ACUMEN MICROCAP Herbicide pre-plant incorporated up to 60 days prior to planting and followed by a preemergence application at planting or up to 2 days after planting. The total amount of ACUMEN MICROCAP Herbicide applied per acre per season cannot exceed the highest labeled rate for any given soil type. See <b>Crop-specific Information</b> for more details on split applications.
<b>Fall Application</b>	Use ACUMEN MICROCAP Herbicide in fall application programs in certain crops. See <b>Crop-specific Information</b> for details on fall application timing.

## SPRAYING INSTRUCTIONS

ACUMEN MICROCAP Herbicide may be applied using either water or sprayable fluid fertilizer (such as straight 32-0-0 or 28-0-0) as the spray carrier. Additionally, ACUMEN MICROCAP Herbicide may be impregnated on dry bulk fertilizer. Sprayable fluid fertilizer as a carrier is NOT for use after crop emergence unless the typical fertilizer burn symptoms on the crop are acceptable.

### Aerial Application

Uniformly apply in 5 or more gallons of water per acre. Exercise caution to minimize drift. **DO NOT** apply during periods of gusty winds or when wind conditions favor drifting. Spray drift can cause injury to sensitive crops. Use a flagman or an automatic mechanical flagging unit on the aircraft to avoid overlapping and possible crop injury.

### Ground Application (Broadcast)

Uniformly apply with properly calibrated ground equipment in **10 or more gallons of water per acre or 20 or more gallons of liquid fertilizer per acre**. Use sprayers equipped with appropriate nozzles that provide uniform and accurate spray distribution and minimize drift. Keep the bypass line on or near the bottom

of the tank to minimize foaming. Nozzle and in-line screens must be no finer than 50 mesh. Application during periods of gusty winds may result in uneven applications. **DO NOT** apply ACUMEN MICROCAP Herbicide postemergence in liquid fertilizers.

If liquid fertilizer/herbicide(s) mixture separates in the spray tank, clogged equipment and uneven application can result. Always predetermine the compatibility of ACUMEN MICROCAP Herbicide alone or with other herbicides based on the following compatibility jar test:

1. Add 1 pint of fertilizer to a quart jar.
2. Add 1 to 4 teaspoon(s) of the dry flowable (DF), wettable powder (WP), aqueous solution (AS), flowable (F) or liquid (L) formulation (depending on mixing ratio required) to the liquid fertilizer. Determine the number of teaspoons of the formulation to add by the following formula:

$$\frac{\text{lbs or pts of product/acre}}{\text{gallons of fertilizer/acre}} \times 11.4 = \begin{array}{l} \text{teaspoons of herbicide to} \\ \text{add to 1 pint of fertilizer} \end{array}$$

3. Close the jar and agitate until the herbicide(s) are evenly dispersed in the liquid fertilizer. If the materials **DO NOT** disperse well, it may be necessary to slurry the chemicals in water before adding to the fertilizer.

- After dispersing the materials, add appropriate number of teaspoons of ACUMEN MICROCAP Herbicide to the jar and shake well. Add water soluble concentrate herbicides to the mixture last and agitate. Let the mixture stand for 30 minutes; then observe the results. Look for signs of separation: an oily layer or globules, sludge, flakes or other precipitates.
- Evaluate compatibility.
  - If the herbicide(s) and liquid fertilizer mixture does not separate, use this mixture in your spray tank.
  - If the mixture separates but mixes readily with shaking, the mixture can be used provided that good agitation is maintained in the spray tank.
  - If separation of the mixture occurs and agitation does not correct this problem, a compatibility agent is needed.
- If the need for a compatibility agent is demonstrated, Tenkoz recommends the following procedure: Using a clean quart jar, repeat step 1 above and add 1/2 teaspoon of the compatibility agent to the liquid fertilizer. Mix well and repeat steps 2, 3 and 4. If separation or precipitation occurs with the compatibility agent, **DO NOT** use ACUMEN MICROCAP Herbicide with that specific liquid fertilizer.

## Ground Application (Band)

Uniformly apply the broadcast equivalent rate and volume per acre. To determine:

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{broadcast rate per acre} = \text{band rate per acre}$$

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{broadcast volume per acre} = \text{band volume per acre}$$

## Ground Application (Dry Bulk Fertilizer)

Apply ACUMEN MICROCAP Herbicide/dry bulk fertilizer mixtures only with ground equipment. **DO NOT** impregnate ACUMEN MICROCAP Herbicide onto coated ammonium nitrate or limestone because these materials will not absorb the herbicide. Dry fertilizer blends containing mixtures of ammonium nitrate or limestone may be impregnated with ACUMEN MICROCAP Herbicide. A minimum of 200 pounds of impregnated dry bulk fertilizer, excluding the weight of ammonium nitrate or limestone, must be applied per acre.

Use the following formula to determine the amount of ACUMEN MICROCAP Herbicide to be impregnated on a ton of dry bulk fertilizer based on the rate of fertilizer to be applied per acre:

$$\frac{2000}{\text{pounds of dry fertilizer per acre}} \times \text{ACUMEN MICROCAP Herbicide (rate per acre)} = \text{ACUMEN MICROCAP Herbicide per ton of fertilizer}$$

To impregnate ACUMEN MICROCAP Herbicide on bulk fertilizer, use a closed rotary-drum mixer or other commonly used dry bulk fertilizer blender equipped with suitable spray equipment. Spray nozzles must be placed to provide uniform coverage of ACUMEN MICROCAP Herbicide onto the fertilizer during mixing.

Apply the ACUMEN MICROCAP Herbicide/dry bulk fertilizer mixture with an accurately calibrated dry fertilizer spreader. The ACUMEN MICROCAP Herbicide/dry bulk fertilizer mixture must be spread uniformly on the soil surface.

## Chemigation Application via Sprinkler Irrigation and Drip Irrigation Systems

ACUMEN MICROCAP Herbicide may be applied as a chemigation treatment through sprinkler irrigation and drip irrigation systems. Refer to **Crop-specific Information** sections for individual crops. **DO NOT** apply ACUMEN MICROCAP Herbicide via chemigation to crops unless specified in **Crop-specific Information** section.

Apply this product **ONLY** through a sprinkler irrigation system of the following type: center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move.

Apply this product **ONLY** through a drip irrigation system that has emitters above the soil surface.

DO NOT apply this product through any other type of sprinkler irrigation or drip irrigation system.

Uniform distribution of ACUMEN MICROCAP Herbicide-treated irrigation water is the sole responsibility of the applicator and is required to avoid crop injury, lack of herbicide effectiveness or illegal pesticide residues in the crop. If you have any questions about calibration, contact State Extension Service specialists, equipment manufacturers, or other experts.

The system must be properly calibrated (with water only) to ensure that the amount of ACUMEN MICROCAP Herbicide applied corresponds to the specified rate. Apply ACUMEN MICROCAP Herbicide in 1/2 to 3/4 inch of water during the first sprinkler set (use at least 1 inch of water in the states of **New Mexico, Oklahoma and Texas**). Tenkoz recommends that ACUMEN MICROCAP Herbicide is mixed with water at a 1:1 ratio in the injection nurse tank to assist with product flowability. Maintain agitation in the injection nurse tank to keep a uniform herbicide suspension during application. When application is complete, flush the system with water.

## Chemigation Instructions (for low-volume micro sprinklers)

Output of low-volume sprinkler equals 4 to 50 gallons per hour (gph) per emitter. Point of application **MUST** be above ground.

Run the irrigation system a sufficient amount of time prior to ACUMEN MICROCAP Herbicide injection to have all emitters functioning properly. After system is operating properly, length of injection should be such that at one period of time during the injection, the first and last emitters in the system contain ACUMEN MICROCAP Herbicide-treated water. Add ACUMEN MICROCAP Herbicide to the supply tank already filled with the volume of water required for the injection period. Maintain proper agitation in ACUMEN MICROCAP Herbicide injection tank. Mix ACUMEN MICROCAP Herbicide in clean water and inject down-line from filters. Following ACUMEN MICROCAP Herbicide injection, flush system for a period of time sufficient to clear the line of ACUMEN MICROCAP Herbicide. (If ACUMEN MICROCAP Herbicide is applied during a normal irrigation cycle, make injection during the last stage.)

## Chemigation Calibration (for low-volume micro sprinklers)

Calculation of use rate is based on wetted area around emitters - **NOT** on tree areas. To determine correct amount of ACUMEN MICROCAP Herbicide, use the following formula:

- Treated area per each emitter = A  

$$A = 3.14 \times (\text{radius} \times \text{radius})$$
- The area in square feet wet in each acre = B  

$$B = \frac{A \times \text{emitters/acre}}{144}$$
- The total area (in square feet) wet by your system = C  

$$C = B \times \text{acres covered by system}$$
- Rate per treated acre of ACUMEN MICROCAP Herbicide (based on length of control desired) = R  

$$\text{Amount of ACUMEN MICROCAP Herbicide to inject} = S$$

$$S = \frac{C}{43,560} \times R = \text{qts of ACUMEN MICROCAP Herbicide}$$

### Example:

If the average distance from emitter to perimeter of wetted area measured 1 inch below soil surface is 13 inches, then

$$A = 3.14 \times (13 \text{ inches} \times 13 \text{ inches}) \text{ and } A = 530.7 \text{ square inches}$$

If there are 300 emitters per acre, then

$$B = \frac{530.7 \times 300}{144} \text{ and } B = 1105.6 \text{ square feet wetted per acre}$$

If the system covers 20 acres, then

$$C = 1105.6 \text{ square feet per acre} \times 20 \text{ acres and}$$

$$C = 22,112 \text{ square feet wetted by system}$$

If the desired application rate per treated acre is 2.0 qts of ACUMEN MICROCAP Herbicide, then

$$S = \frac{22,112 \times 2.0}{43,560} \text{ and } S = 1.0 \text{ qt} = \text{amount of ACUMEN MICROCAP Herbicide to inject into the system}$$

## Restrictions for Chemigation

1. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.
2. **DO NOT** connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
3. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
4. Tail water (runoff water) from chemigation that contains ACUMEN MICROCAP Herbicide must be recirculated and/or contained in the field in a cistern or holding reservoir from the initial application and/or used only on adjacent, approved crops for which ACUMEN MICROCAP Herbicide is registered for this type of application.
5. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. It must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
6. The sprinkler chemigation system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. In addition, systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. The sprinkler chemigation system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
8. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

## Chemigation Systems Connected to Public Water Systems

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. All chemigation systems connected to public water systems must also follow restrictions listed in the preceding section titled **Chemigation**.

## Applications via Flood, Flooded Basin, or Gravity Flow Irrigation Systems

ACUMEN MICROCAP Herbicide may be applied via flood, flooded basin, or gravity flow irrigation systems, but only to the following crops: bearing and non-bearing fruit and nut trees, bearing and non-bearing olive trees, bearing and non-bearing vineyards, and alfalfa.

## Use Instructions and Restrictions for Flood, Flooded Basin, and Gravity Flow Irrigation

1. ACUMEN MICROCAP Herbicide may be applied through flood, flooded basin, or gravity flow irrigation systems designed to uniformly distribute irrigation water along the soil surface. Solid set systems utilizing tall riser for overhead application are excluded.
2. Follow all label directions for ACUMEN MICROCAP Herbicide regarding rates per acre, timing of application, and crop-specific restrictions and precautions.
3. **DO NOT** connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.
4. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
5. Mix ACUMEN MICROCAP Herbicide with water at a 1:1 ratio in the injection nurse tank to assist with product flowability. Maintain agitation in the injection nurse tank to keep a uniform herbicide suspension during application. When application is complete, flush the system with water.
6. Systems using a gravity-flow pesticide dispensing system must meter the pesticide in the water at the head of the field downstream of a hydraulic discontinuity, such as a drop structure or weir box, to decrease potential for water source contamination from backflow water.
7. Tail water (runoff water) from flood, flooded basin, or gravity flow irrigation that contains ACUMEN MICROCAP Herbicide should be recirculated and/or contained in the field in a cistern or holding reservoir from the initial application and/or used only on adjacent approved crops for which ACUMEN MICROCAP Herbicide is registered for this type of application.
8. Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
  - The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located in the irrigation pipe to prevent water source contamination from backflow.
  - The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent flow of fluids back toward the injection pump.
  - The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being



withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

- The system must contain a functional interlocking control to automatically shut off the pesticide injection pump when the water pump stops.
  - The irrigation pipe or water pump must include a functional pressure switch, which will stop the pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
  - Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) of effective design and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
  - Any alternative to the above safety devices must conform to the list of EPA-approved alternative devices.
9. Be sure to regularly measure the flow in the field to ensure the correct amount of ACUMEN MICROCAP Herbicide is metered into the irrigation water and also regularly monitor to ensure that treated water is uniformly distributed across the field. Flow rates through metering devices and distribution of ACUMEN MICROCAP Herbicide can vary with water temperature and speed of water flow across the field.
10. Uniform distribution of ACUMEN MICROCAP Herbicide-treated irrigation water is the sole responsibility of the applicator and is required to avoid crop injury, lack of herbicide effectiveness, or illegal pesticide residues in the crop.
11. If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

## Spray Drift

### Aerial Applications:

- Do not release spray at a height greater than 10 feet above the crop canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must not exceed 65% of the wingspan for fixed wing aircraft or 75% of the rotor diameter for helicopters. Otherwise, the boom length must not exceed 75% of the wingspan for fixed wing aircraft or 90% of the rotor diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- Do not apply during temperature inversions.

### Ground Boom Applications:

- Applicators must only apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

### Boom-less Ground Applications:

- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

### Hand-held Technology Applications:

- Take precautions to minimize spray drift.

## Spray Drift Advisories

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

## IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

## Controlling Droplet Size – Ground Boom

- Volume – increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure – use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle – use the spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

## Controlling Droplet Size – Aircraft

Adjust Nozzles – follow nozzle manufacturer's recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

## BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

**RELEASE HEIGHT – Aircraft** - Higher release heights increase the potential for spray drift.

**SHIELDED SPRAYERS** - Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

**TEMPERATURE AND HUMIDITY** - When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

**TEMPERATURE INVERSIONS** - Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

**WIND** - Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

## SPRAY ADDITIVES

Spray adjuvants have little or no influence on performance of ACUMEN MICROCAP Herbicide when applications are made prior to weed emergence. However, several tank mixes with ACUMEN MICROCAP Herbicide require adjuvants to improve burn-down of emerged weeds. Therefore, surfactants, liquid fertilizer (28%, 30%, or 32% UAN [urea ammonium nitrate] or AMS [ammonium sulfate]), or crop oil concentrate may be used with ACUMEN MICROCAP Herbicide tank mixes applied preplant, preemergence, or early postemergence to the crop. Follow the adjuvant directions on the tank mix partner's label. The adjuvants must contain ingredients accepted by the Environmental Protection Agency.



When an adjuvant is to be used with this product, Tenkoz recommends the use of a Chemical Producers and Distributors Association certified adjuvant.

## TANK MIXES

ACUMEN MICROCAP Herbicide may be applied in a tank mix or a sequential application with other herbicides registered for use in a given crop. Refer to the companion label for weeds controlled in addition to ACUMEN MICROCAP Herbicide alone.

When using tank mixtures or sequential applications with ACUMEN MICROCAP Herbicide, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

**Note:** If this product is used in combination with any other product except as specifically recommended in writing by Tenkoz, then Tenkoz shall have no liability for any loss, damage, or injury arising out of its use in any such combination not so specifically recommended. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

## Tank Mixes with Other Products

Always perform a mixing test to check the compatibility of ACUMEN MICROCAP Herbicide with all potential tank mix partners.

## Mixing Instructions

1. Fill tank 1/2 to 3/4 full with clean water or liquid fertilizer and agitate. Prior to mixing ACUMEN MICROCAP Herbicide or tank mixtures in liquid fertilizer, refer to appropriate label sections for specified uses in liquid fertilizer, application instructions, and compatibility determinations.

**NOTE:** ACUMEN MICROCAP Herbicide will **NOT** mix in high salt formulation fertilizers, such as 10-34-0. When utilizing high salt formulation fertilizers as the spray carrier, use one of the following:

- Pre-slurry ACUMEN MICROCAP Herbicide in water prior to adding to tank; use 1:1 ratio of water to ACUMEN MICROCAP Herbicide.
- Add water to fertilizer solution prior to adding ACUMEN MICROCAP Herbicide. The amount of water must be equal to or greater than the amount of ACUMEN MICROCAP Herbicide to be used.

### 2. ACUMEN MICROCAP Herbicide Alone

When using ACUMEN MICROCAP Herbicide alone, add ACUMEN MICROCAP Herbicide to the partially filled tank while agitating; then fill the remainder of the tank with water or liquid fertilizer.

### 3. ACUMEN MICROCAP Herbicide Tank Mixes

Add the tank mixture ingredients in the following order before adding ACUMEN MICROCAP Herbicide:

- Wettable Powder (WP) formulations. Make a slurry of the WP in water (1:2 ratio). Add the slurry slowly into the partially filled tank while agitating.
- Dry Flowable (DF)/Water-dispersible Granule (WDG) formulations. Add the granules to the partially filled tank while agitating. Make a slurry of the granules in water before adding to liquid fertilizer.
- Flowable (F) formulations. Add the F formulation to the partially filled tank while agitating.
- Add ACUMEN MICROCAP Herbicide to the partially filled tank while agitating.

e. Water-soluble Concentrate (WSC) formulations. Add the WSC formulation to the partially filled tank while agitating.

f. Emulsifiable Concentrate (EC) formulations. Add the EC formulation to the partially filled tank while agitating.

Fill the remainder of the tank with water or liquid fertilizer while agitating.

- Thorough and continuous sprayer-tank agitation **MUST** be maintained during mixing and spraying of ACUMEN MICROCAP Herbicide. If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend the mixture before spraying is resumed.

## Cleaning Spray Equipment

Follow the manufacturer's directions to clean application equipment thoroughly using a strong detergent or commercial spray cleaner. After cleaning, triple rinse the equipment before and after applying this product.

## PRECAUTIONS

- ACUMEN MICROCAP Herbicide will not control established weeds. Destroy emerged weeds prior to application.
- ACUMEN MICROCAP Herbicide is most effective in controlling weeds mechanically incorporated or when incorporated into the weed germination zone by adequate rainfall or overhead irrigation after application.
- When using tank mixtures with ACUMEN MICROCAP Herbicide, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Follow all precautions and restrictions on the labels of all products applied in combination with ACUMEN MICROCAP Herbicide. Always follow the most restrictive label.
- In the event of a crop loss due to adverse weather conditions or other reasons, any crop registered for a preplant incorporated application of ACUMEN MICROCAP Herbicide can be replanted without adverse effects the same year (see **Crop-specific Information** for exceptions). If replanting is necessary, **DO NOT** work the soil deeper than the treated zone.
- Refer to **Crop-specific Information** for crop-specific preharvest intervals and feeding and grazing restrictions.

## Crop Rotation Restrictions

- Use of ACUMEN MICROCAP Herbicide in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors, such as arid conditions, make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible. Soil characteristics and environmental conditions which may contribute to crop stress that may be accentuated by the use of ACUMEN MICROCAP Herbicide include: coarse soils, compaction, high salinity, eroded knolls/hilltops, cold and/or wet soils, drought, and heavy rainfall soon after application.
- When ACUMEN MICROCAP Herbicide is used in tank mix or sequential combinations, refer to label of other herbicides for additional rotational crop restrictions.
- Restrictions for rotational cropping after the use of ACUMEN MICROCAP Herbicide are dependent on the application use rate of ACUMEN MICROCAP Herbicide in the primary crop. The user must thoroughly read the following restrictions to determine the rotational crops for their specific situation, according to application use rate.

## Rotational Crop Restrictions following ACUMEN MICROCAP Herbicide Applications to Field and Row Crops

### 1. Application Rate less than or equal to 4 pts/A (1.9 lbs ai/A)

a. Crops labeled for preplant incorporated application may be planted the same season ACUMEN MICROCAP Herbicide was applied.

b. **Sugar beets, Red beets and Spinach:** To avoid crop injury, **DO NOT** plant sugar beets, red beets or spinach for 12 months following a spring application of this product or 14 months following a fall application of this product.

If rainfall or irrigation was not sufficient to produce a crop, these crops must not be planted for 18 months following a spring application of this product or 20 months following a fall application of this product.

Plow the land using a moldboard plow to a depth of 12 inches to ensure thorough mixing of soil prior to planting sugar beets, red beets and spinach.

c. **Proso millet, Sorghum (Milo), and Annual or Perennial grass crops or mixtures**

Proso millet, sorghum (milo), and annual or perennial grass crops or mixtures must not be planted for 10 months after a spring application of ACUMEN MICROCAP Herbicide or 12 months after a fall application of ACUMEN MICROCAP Herbicide, except in the following conditions:

In the states of **Minnesota, North Dakota and South Dakota**, these crops must not be planted for 18 months following a spring application of this product or 20 months following a fall application of this product.

If rainfall or irrigation was not sufficient to produce a field or row crop, to avoid the possibility of crop injury in areas that receive less than 20 inches of rainfall or irrigation to produce a crop, these crops must not be planted for 18 months following a spring application of this product or 20 months following a fall application of this product.

d. **Wheat and Barley in Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, Oregon, Utah, Washington and Wyoming**

Wheat and barley may be planted 4 months after an application of ACUMEN MICROCAP Herbicide applied at rates less than or equal to 3.2 pts/A (1.52 lbs ai/A) with normal rainfall and/or irrigation. Following harvest of furrow-irrigated crops, thoroughly mix the soil by plowing or deep disking to minimize the potential for herbicide carryover to the following crop. For ACUMEN MICROCAP Herbicide application rates greater than 3.2 pts/A but less than or equal to 4.0 pts/A, follow the wheat and barley crop rotation guidelines listed in section e. **Wheat and Barley in All Other States.**

e. **Wheat and Barley in All Other States**

Wheat and barley may be planted 4 months after an application of ACUMEN MICROCAP Herbicide, except under the following conditions:

If less than 12 inches of rainfall or overhead irrigation was received between application and rotational crop planting, wheat must not be planted before 12 months after a spring application of this product or 14 months after a fall application of this product.

In dryland areas and/or areas where irrigation is necessary to produce the crop treated with ACUMEN MICROCAP Herbicide, **DO NOT** plant winter wheat or barley as a follow crop if crop failure/destruction occurs and land is fallowed during the summer.

f. **All Other Rotational Crops Not Specifically Addressed Above**

Crops, other than those to which ACUMEN MICROCAP Herbicide may be applied as a preplant incorporated treatment, may be planted the year following application of ACUMEN MICROCAP Herbicide, except under the following condition:

If rainfall or irrigation was not sufficient to produce a crop, delay planting for 18 months following a spring application of this product or 20 months following a fall application of this product.

### 2. Application Rate greater than 4 pts/A (1.9 lbs ai/A)

In the growing season following application of ACUMEN MICROCAP Herbicide to field and row crops at greater than 4 pts/A, plant only those crops for which ACUMEN MICROCAP Herbicide is labeled for preplant incorporated treatment or crop injury may occur. **DO NOT** plant other crops for 24 months.

## Rotational Crop Restrictions following ACUMEN MICROCAP Herbicide Applications to Orchard, Grove, and Vineyard Crops

In the growing season following application of ACUMEN MICROCAP Herbicide to bearing fruit and nut trees, olive trees, or grapes, plant only those crops for which ACUMEN MICROCAP Herbicide is labeled for preplant incorporated treatment or crop injury may occur. **DO NOT** rotate to other crops (except for nut crops, fruit trees, olive trees, or grapes) for 24 months following an application of this product to bearing fruit or nut trees, olive trees, or grapes.

### Use Area



### CROP-SPECIFIC INFORMATION

**Crop Injury.** ACUMEN MICROCAP Herbicide use may result in crop injury, loss or damage to certain crops under a number of conditions, including but not limited to agronomic, cultural, mechanical, and environmental. Numerous risks of loss or damage to certain crops may be associated with the use of ACUMEN MICROCAP Herbicide even when directions for use are followed completely. The user or grower must consider all such risks before deciding to apply the product. **Tenkox recommends testing this product on a small portion of the target crop to determine if damage is likely to occur.** Each grower who is considering the product for such use should test ACUMEN MICROCAP Herbicide to determine its suitability. A grower should use ACUMEN MICROCAP Herbicide only to the extent that, in his sole opinion, the benefit of ACUMEN MICROCAP Herbicide use outweighs the potential injury to the grower's crop.

In addition, many factors can affect crop growth and/or yield, including but not limited to insects, diseases, weed competition, poor seed quality, improper planting depth, mechanical cultivation, poor weather (such as freezing or excessive wind, rain, heat, or cold), lack of or excessive moisture, crusting, fertility, or hardpans. Risk of loss or damage to crops may be associated with the use of ACUMEN MICROCAP Herbicide and contribute to poor stands due to failure of crop to emerge, swelling of roots or other below-ground plant parts, less vigorous plant growth and development, and reduction in yield potential. ACUMEN MICROCAP Herbicide may also cause injury to sensitive rotational crops.

## ALFALFA

Grown for Forage, Hay, or Seed

**Application Methods:** Apply by ground, air, chemigation, flood, floodbasin, gravity flow irrigation systems, or on dry bulk fertilizer.

### Use Methods, Timings and Use Rates

**Established Alfalfa for Forage/Hay.** Apply to established alfalfa grown for forage or hay (defined as alfalfa planted in the fall or spring which has gone through a first cutting/mowing). Apply in a single application or in sequential applications. Uniformly apply at a broadcast rate of **1.1 to 4.2 quarts per acre** prior to weed germination. Applications can be made in the fall after the last mowing/cutting, during winter dormancy, in the spring, or between cuttings. Make applications prior to the alfalfa reaching 6 inches in regrowth.

**Established Alfalfa Grown for Seed Production.** Apply to established alfalfa grown for seed production (defined as alfalfa planted in the fall or spring which has gone through a summer season of cutting/mowing). Uniformly apply at a broadcast rate of **1.1 to 4.2 quarts per acre** prior to weed emergence in **one** of the following ways:

- Apply to dormant established alfalfa.
- Apply before alfalfa exceeds 10 inches in height after first mowing/beat.
- When the alfalfa reaches 10 inches in height or if the alfalfa has been mowed/beaten 2 or more times, ACUMEN MICROCAP Herbicide must be applied with drop nozzles directing the spray so that there is little to no contact with the foliage.

**Seedling Alfalfa.** Apply to seedling alfalfa grown for forage or hay (defined as alfalfa planted in the fall or spring which has **NOT** gone through a cutting/mowing). Uniformly apply at a broadcast rate of **1.1 to 2.1 pints per acre** prior to weed germination. Applications can be made when the seedling alfalfa has reached the second trifoliate stage of growth. Make applications prior to the alfalfa reaching 6 inches in growth.

**Alfalfa Stand Establishment.** Apply at a broadcast rate of **1.0 to 1.5 pints per acre** as a preplant incorporated or preemergence treatment in direct-seeded alfalfa. Some crop stand reduction and stunting may occur with this use of ACUMEN MICROCAP Herbicide; however, reduced weed competition will allow establishment of a quality stand. Use the lower rates on coarse texture soil or in lower rainfall areas (receiving less than 20 inches of rainfall and irrigation a year).

- **Preplant-incorporated.** Uniformly incorporate ACUMEN MICROCAP Herbicide into the top 2 to 3 inches of the final seedbed prior to planting.
- **Preemergence.** Apply directly after drill seeding alfalfa. Plant alfalfa into a seedbed that is firm and free of clods.

### Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label.

### Flood, Flooded Basin, and Gravity Flow Irrigation Systems

Apply ACUMEN MICROCAP Herbicide in flood, flooded basin, and gravity flow irrigation systems. Follow all directions, special instructions and precautions about flood, flooded basin, and gravity flow irrigation systems in the **Spraying Instructions** section of this label.

### Restrictions

- **DO NOT** exceed 4.2 quarts of per acre in a single application.

- For multiple applications, **DO NOT** exceed a cumulative total of 4.2 quarts of per acre in any one-crop season.
- Preharvest Interval (PHI) for alfalfa forage and hay – 14 days.
- **DO NOT** apply less than 90 days prior to alfalfa harvest for seed.

### Precautions

- Some stunting and chlorosis of the alfalfa may occur with postemergence applications.
- Applications made after the alfalfa exceeds 6 inches in height may result in poor weed control because of possible reduced spray coverage to the soil.

## ARTICHOKE

**Application Methods:** Apply by ground or air.

### Use Methods, Timings and Use Rates

With a single application, uniformly apply to artichokes up to **3.0 pints per acre** as a broadcast spray to the soil surface at least 60 days prior to harvest, or uniformly apply to artichokes from **3.1 to 8.2 pints per acre** as a broadcast spray to the soil surface at least 200 days prior to harvest. Application must be made pretransplant to artichoke, at no less than 1 to 2 days prior to transplanting.

### Restrictions

- **DO NOT** apply postemergence over the top of or to foliage of artichoke because severe injury may occur.
- **DO NOT** apply more than 3.0 pints per acre per season when utilizing the 60-day preharvest interval.
- If more than 3.0 pints per acre (up to 8.2 pints per acre) is applied, **DO NOT** harvest artichoke until 200 days after application.
- **DO NOT** apply more than 8.2 pints per acre per season.
- **DO NOT** feed forage or graze livestock in treated fields.

## ASPARAGUS

**Application Methods:** Apply by ground or air.

### Use Methods, Timings and Use Rates

Apply only to established asparagus, or to newly planted crown asparagus. **DO NOT** apply to newly seeded asparagus. When applying to newly planted crown asparagus, assure crowns are fully covered with 2 to 4 inches of soil.

With a single application, uniformly apply to asparagus up to **8.2 pints per acre** as a broadcast spray to the soil surface at least 14 days prior to the first spear harvest or after seasonal harvest is complete. Application must be made prior to spear emergence or remove emerged spears prior to making the application. If asparagus is grown on sandy soils, **DO NOT** apply ACUMEN MICROCAP Herbicide at more than 2.4 pts/A.

### Restrictions

- **DO NOT** apply postemergence over the top of emerged spears as severe injury may occur.
- **DO NOT** apply more than 8.2 pints per acre per season.
- **DO NOT** apply within 14 days before harvest.
- **DO NOT** feed forage or graze livestock in treated fields.
- **DO NOT** apply by chemigation methods.

## BEARING AND NON-BEARING CANEBSERRIES

### For Use in Crops in the Caneberry Crop Group

Blackberry, Loganberry, Raspberry (black, red, wild)

**Application Methods:** Apply by ground only, including by chemigation, flood, flooded basin, and gravity flow irrigation systems.

### Use Methods, Timings and Use Rates

Apply either in a single application or sequentially with an interval of 30 days or more. Apply ACUMEN MICROCAP Herbicide at between 2.0 to 6.3 quarts per acre depending on the grower's weed control program, level of weed infestation, and desired use strategy (see chart below) per application, not exceeding a total of 6.3 quarts/A per year in caneberries.

#### ACUMEN MICROCAP Herbicide Use Rate per Acre

Low Use Rate	High Use Rate
2.0 quarts (2 lbs ai/A)	4.0 - 6.3 quarts (4 - 6 lbs ai/A)

### Ground Applications (Bearing)

Use ACUMEN MICROCAP Herbicide surface incorporated or (surface) preemergence. Apply ACUMEN MICROCAP Herbicide as a broadcast or banded treatment using ground equipment before weed germination. Apply the spray directly to the ground in areas between rows or trellised rows. Do not apply over the top of canes, or primocanes with leaves, buds, or fruit because this may cause injury.

### Ground Applications (Non-bearing)

Apply for preplant incorporated, preplant surface, surface incorporated, or pre-emergence weed control in non-bearing caneberries. ACUMEN MICROCAP Herbicide may be used before or after transplanting and the establishment of the non-bearing crops.

### Preplant Surface

Prior to transplanting, apply uniformly with ground equipment. Avoid allowing roots to contact treated soil when placing transplants into the hole, as injury may occur.

### Preplant Incorporated

Apply ACUMEN MICROCAP Herbicide uniformly before transplanting but before weeds germinate. Incorporate to a depth of 1 to 2 inches. In order to avoid mechanical injury to the crop, apply and incorporate before transplanting. Avoid allowing roots to contact treated soil when placing transplants into the hole, as injury may occur.

### Preemergence

Apply in a band or broadcast.

### Chemigation Applications

ACUMEN MICROCAP Herbicide may be applied through sprinkler irrigation and drip irrigation systems. Follow all directions, special instructions, and precautions about chemigation in the Spraying Instructions section of the product label. DO NOT apply ACUMEN MICROCAP Herbicide-treated irrigation water over top of canes or primocanes with leaves or buds or fruit. Contact with these plant parts by spray mixture may cause injury.

**Flood, Flooded Basin, and Gravity Flow Irrigation Systems - ACUMEN MICROCAP Herbicide** may be applied through these types of systems. Follow all directions, special instructions, and precautions about chemigation in the **Spraying Instructions** section of the product label.

### Restrictions

- Preharvest Interval (PHI): 30 days.
- **DO NOT** apply more than 6.3 quarts of ACUMEN MICROCAP Herbicide per acre per year.
- **DO NOT** apply by air.
- **DO NOT** feed forage or graze livestock in treated fields or plantings.
- **DO NOT** apply to newly seeded nursery stock.

## BEARING AND NON-BEARING FRUIT AND NUT TREES

ACUMEN MICROCAP Herbicide may be applied in the following individual crops within the fruit tree and tree nut crop groupings:

#### Crops in Citrus Fruit Crop Group

Australian desert lime, Australian finger lime, Australian round lime, Brown River finger lime, Calamondin, Citron, Citrus hybrids, Grapefruit, Japanese summer grapefruit, Kumquat, Lemon, Lime, Mediterranean mandarin, Mount White lime, New Guinea wild lime, Orange (sour, sweet), Pummelo, Russell River lime, Satsuma mandarin, Sweet lime, Tachibana orange, Tahiti lime, Tangelo, Tangerine (mandarin), Tangor, Trifoliolate orange, UniQ fruit

#### Crops in Tree Nut Crop Group

African nut-tree, Almond, Beechnut, Brazil nut, Brazilian pine, Bunya, Bur oak, Butternut, Cajou nut, Candlenut, Cashew, Chestnut, Chinquapin, Coconut, Coquito nut, Dika nut, Ginkgo, Guiana chestnut, Hazelnut (filbert), Heartnut, Hickory nut, Japanese horse-chestnut, Macadamia nut, Mongongo nut, Monkey-pot, Monkey puzzle nut, Okari nut, Pachira nut, Peach palm nut, Pecan, Pequi, Pill nut, Pine nut, Pistachio, Sapucaia nut, Tropical almond, Walnut (black), Walnut (English), Yellowhorn

#### Crops in Pome Fruit Crop Group

Apple, Azarole, Crabapple, Loquat, Mayhaw, Medlar, Pear, Pear (Asian), Quince (including Chinese and Japanese), Tejocote

#### Crops in Stone Fruits Crop Group

Apricot (including Japanese), Capulin, Cherry (black, Nanking, sweet, tart), Jujube (Chinese), Nectarine, Peach, Plum (including American, beach, Canada, cherry, Chickasaw, Damson, Japanese, Klamath, prune), Plumcot, Sloe

#### Other Fruit Trees

Olive, Pomegranate  
Date Palm\*, Fig\*  
(non-bearing only)

\* Date Palm and Fig: Not for use in California.

**Application Methods:** Apply by ground, chemigation, flood, flooded basin, and gravity flow irrigation systems.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide either in a single application or sequentially with an interval of 30 days or more. Apply between **2.0 to 6.3 quarts** per acre in citrus, nut trees, and non-bearing date palm or fig trees and between **2.0 to 4.2 quarts per acre** in olive, pome, stone fruit, and pomegranate trees depending on the grower's weed control program, level of weed infestation, and desired use strategy (see following chart). Do not apply more than a total of 4.2 quarts/A per year in olive, pome, pomegranate, and stone fruit trees, and do not apply more than a total of 6.3 quarts/A per year in citrus and nut trees, and non-bearing date palm or fig trees.

## Ground Applications (Bearing)

Use ACUMEN MICROCAP Herbicide as a **surface incorporated** or **(surface) pre-emergence** application.

Apply as a broadcast or banded treatment using ground equipment before weed germination. Apply the spray directly to the ground beneath the trees and/or in areas between rows. **DO NOT** apply over the top of trees with leaves or buds or fruit. Contact by the spray mixture with leaves, shoots, or buds may cause injury.

## Ground Applications (Non-bearing)

Apply ACUMEN MICROCAP Herbicide for preplant incorporated, preplant surface, surface incorporated or preemergence weed control in non-bearing fruit and nut tree crops. Use ACUMEN MICROCAP Herbicide before or after transplanting the non-bearing crops.

**Preplant Surface.** Prior to transplanting, uniformly apply with ground equipment. Avoid root contact with treated soil when placing transplants into the hole or injury may occur.

**Preplant Incorporated.** Uniformly apply prior to transplanting but before weeds germinate. Incorporate ACUMEN MICROCAP Herbicide to a depth of 1 to 2 inches. Application and incorporation must be made prior to transplanting to avoid mechanical injury to the crop. Avoid root contact with treated soil when placing transplants into the hole or injury may occur.

**Preemergence.** Applications may be in a band or broadcast.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation and drip irrigation systems. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label. **DO NOT** apply ACUMEN MICROCAP Herbicide-treated irrigation water over top of trees with leaves or buds or fruit. Contact with leaves, shoots, or buds by spray mixture may cause injury.

## Flood, Flooded Basin, and Gravity Flow Irrigation Systems

Apply ACUMEN MICROCAP Herbicide in flood, flooded basin, and gravity flow irrigation systems. Follow all directions, special instructions and precautions about flood, flooded basin, and gravity flow irrigation systems in the **Spraying Instructions** section of this label.

## Restrictions

- **DO NOT** apply more than 4.2 quarts of per acre per year in pome, stone and other fruit trees.
- **DO NOT** apply more than 6.3 quarts of per acre per year in citrus and nut trees, and non-bearing date palm and fig trees.
- **DO NOT** apply by air.

- **DO NOT** feed forage or graze livestock in treated groves or orchards.
- **DO NOT** apply within 1 day of harvest of citrus fruit.
- **DO NOT** apply within 60 days before harvest of olive, pome, pomegranate, stone fruit, and tree nuts.
- **DO NOT** apply to newly seeded nursery stock.

## BEARING AND NON-BEARING GRAPE

**Application Methods:** Apply by ground, chemigation, flood, flooded basin, or gravity flow irrigation systems.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide either in a single application or sequentially with an interval of 30 days or more. Uniformly apply in bearing grape vineyards up to **6.3 quarts per acre** depending on the grower's weed control program, level of weed infestation, and desired use strategy (see chart following).

ACUMEN MICROCAP Herbicide Use Rate per Acre

Low Use Rate	High Use Rate
3.2 quarts	6.3 quarts

Apply ACUMEN MICROCAP Herbicide any time after fall harvest, during winter dormancy, and in the spring.

## Ground Applications (Bearing)

Use ACUMEN MICROCAP Herbicide as a **surface incorporated** or **(surface) pre-emergence** application.

Apply as a broadcast or banded treatment using ground equipment before weed germination. Apply the spray directly to the ground beneath the grape vines and/or in areas between rows. **DO NOT** apply over the top of grape vines with leaves or buds or fruit. Contact with leaves, shoots, or buds by the spray mixture may cause injury.

## Ground Applications (Non-bearing)

Apply ACUMEN MICROCAP Herbicide for preplant incorporated, preplant surface, surface incorporated or preemergence weed control in non-bearing vineyards. Use ACUMEN MICROCAP Herbicide before or after transplanting.

**Preplant Surface.** Prior to transplanting, uniformly apply with ground equipment. Avoid root contact with treated soil when placing transplants into the hole or injury may occur.

**Preplant Incorporated.** Uniformly apply prior to transplanting but before weeds germinate. Incorporate ACUMEN MICROCAP Herbicide to a depth of 1 to 2 inches. Application and incorporation must be made prior to transplanting to avoid mechanical injury to the crop. Avoid root contact with treated soil when placing transplants into the hole or injury may occur.

**Preemergence.** Make applications in a band or broadcast.

## Non-bearing Grape

**For Newly Transplanted and One-year-old Grapevines:**

- **DO NOT** allow spray to contact buds or leaves, or leaf distortion may occur.
- **DO NOT** apply to newly transplanted trees or vines until ground has settled and no cracks are present.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation and drip irrigation systems. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label. **DO NOT** apply ACUMEN MICROCAP Herbicide-treated irrigation water over the top of grape vines with leaves, or buds, or fruit.

## Flood, Flooded Basin, and Gravity Flow Irrigation Systems

Apply ACUMEN MICROCAP Herbicide in flood, flooded basin, and gravity flow irrigation systems. Follow all directions, special instructions and precautions about flood, flooded basin, and gravity flow irrigation systems in the **Spraying Instructions** section of this label.

## Restrictions

- **DO NOT** apply over the top of grape vines with leaves, or buds, or fruit.
- **DO NOT** apply by air.
- **DO NOT** apply more than 6.3 quarts per acre per year (a single growing season).
- **DO NOT** apply within 90 days before harvest of fruit.
- **DO NOT** feed forage or graze livestock in treated vineyards.

### BEARING AND NON-BEARING SMALL FRUIT CLIMBING VINES

Amur River Grape, Gooseberry, Kiwifruit (fuzzy, hardy),  
Maypop, Schisandra Berry

**Application Methods:** Apply by ground, chemigation, flood, flooded basin, or gravity flow irrigation systems.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide either in a single application or sequentially with an interval of 30 days or more. Uniformly apply in small fruit climbing vines up to **4.2 quarts per acre** depending on the grower's weed control program, level of weed infestation, and desired use strategy (see following chart).

### ACUMEN MICROCAP Herbicide Use Rate per Acre

Low Use Rate	High Use Rate
3.2 quarts	4.2 quarts

Apply ACUMEN MICROCAP Herbicide any time after fall harvest, during winter dormancy, and in the spring.

## Ground Applications

Use ACUMEN MICROCAP Herbicide as a surface incorporated or (surface) pre-emergence application.

Apply as a broadcast or banded treatment using ground equipment before weed germination. Apply spray directly to the ground beneath small fruit climbing vines and/or in areas between rows. **DO NOT** apply over the top of small fruit climbing vines with leaves, buds, or fruit. Contact with leaves, buds, or fruit by the spray mixture may cause injury.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation and drip irrigation systems. Follow all instructions and precautions about chemigation in the **Spraying Instructions** section of this label. **DO NOT** apply ACUMEN MICROCAP Herbicide-treated irrigation water over the top of small fruit climbing vines with leaves, buds, or fruit. Contact with leaves, buds, or fruit by the spray mixture may cause injury.

## Flood, Flooded Basin, and Gravity Flow Irrigation Systems

Apply ACUMEN MICROCAP Herbicide in flood, flooded basin, and gravity flow irrigation systems. Follow all instructions, and precautions about flood, flooded basin, and gravity flow irrigation systems in the **Spraying Instructions** section of this label.

## Restrictions

- **DO NOT** apply over the top of small fruit climbing vines with leaves, buds, or fruit.
- **DO NOT** apply by air.
- **DO NOT** apply more than 4.2 quarts per acre per year (a single growing season).
- **DO NOT** apply within 60 days before harvest of fruit.
- **DO NOT** feed forage or graze livestock in treated vines.
- **DO NOT** apply when impregnated onto dry bulk fertilizer in small fruit climbing vines.

### BRASSICA HEAD AND STEM VEGETABLES

Broccoli, Brussels Sprouts, Cabbage, Cauliflower,  
Cavalo Broccolo, Chinese Broccoli, Chinese Cabbage (napa),  
Chinese Mustard Cabbage, Kohlrabi

**Application Methods:** Apply by ground or air.

## Use Methods, Timings and Use Rates

Uniformly apply as a preplant surface application prior to transplanting, or as a postemergence application.

Uniformly apply only by ground as a postemergence-directed application to transplanted or established direct-seeded Brassica head and stem vegetables.

**DO NOT** apply prior to direct-seeded Brassica head and stem vegetables.

With a single application, apply up to **2.1 pints per acre** to Brassica head and stem vegetables as a broadcast or banded spray to the soil surface at pre-transplant time; or as a broadcast postemergence foliar spray; or as a postemergence-directed spray between vegetable rows. Apply postemergence or postemergence-directed to 2-leaf to 4-leaf vegetable transplants at 1 to 3 days after transplanting, or to the 2-leaf to 4-leaf stage of directseeded vegetable plants.

Apply as a postemergence-directed spray on the soil at the base of Brassica head and stem vegetable plants, beneath plants, and between rows. Avoid direct spray contact with foliage or stems because crop injury may occur. Be sure roots of transplants are established. Following the postemergence-directed spray and when sufficient rainfall or irrigation does not occur, mechanically incorporate to activate the herbicide. Apply ACUMEN MICROCAP Herbicide prior to weed germination for optimum control. Emerged weeds will not be controlled by this treatment.

## Use Rates

### Pre-transplant, Postemergence or Postemergence-directed

Soil Texture	Broadcast Rate
Coarse	1.0 to 1.5 pts/A
Medium	1.5 to 2.1 pts/A
Fine	1.5 to 2.1 pts/A

## Restrictions

- **DO NOT** apply more than 2.1 pints per acre per season.
- **DO NOT** apply within 60 days before broccoli harvest.
- **DO NOT** apply within 70 days before cabbage or other Brassica head and stem vegetables harvest.
- **DO NOT** feed forage or graze livestock in treated fields.
- **DO NOT** apply via chemigation methods.

## Precautions

- Avoid root contact with ACUMEN MICROCAP Herbicide-treated soil when placing transplants into furrow or hole, or crop injury may occur.
- Avoid overlapping spray patterns because crop injury can occur.

## CARROTS

**Application Methods:** Apply by ground, air, or chemigation.

## Use Methods, Timings and Use Rates

**Preemergence.** Make a single broadcast application at **2.0 pints per acre** as a postplant treatment prior to emergence of the crop and before weed germination. Apply as a preemergence treatment within 2 days after planting.

**Layby.** Apply ACUMEN MICROCAP Herbicide only by ground equipment at layby (last mechanical cultivation) at **2.0 pints per acre** as a directed spray to the soil between rows. Apply prior to weed germination. Emerged weeds will not be controlled by this treatment. **DO NOT** allow the spray to contact carrot plants or injury may occur. **DO NOT** apply layby applications by chemigation or by air.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label. **DO NOT** allow ACUMEN MICROCAP Herbicide-treated irrigation water to contact carrot plants.

**DO NOT** apply tank mixtures through any type of irrigation system unless the label instructions on chemigation of all products are followed.

## Restrictions

- **DO NOT** apply more than 2.0 pints per acre per season.
- **DO NOT** apply within 60 days before harvest.
- **DO NOT** feed forage or graze livestock in treated fields.
- **DO NOT** apply as a broadcast spray over top of carrots or crop injury may result.
- **DO NOT** apply layby applications by chemigation or by air.

## CARROTS GROWN FOR SEED PRODUCTION

**Application Methods:** Apply only by layby with ground equipment.

## Use Methods, Timings and Rates

**Last Cultivation (Layby).** Apply following the last normal mechanical cultivation (layby) at a rate of **1.0 to 4.0 pints per acre** (on a broadcast basis). Uniformly apply as a directed spray to the soil between rows. **DO NOT** allow the spray to contact carrot plants or injury may occur. Use protective shields to avoid contact with carrot foliage. Use properly calibrated and accurate nozzles and equipment.

Layby applications can be applied to carrots previously treated with herbicides registered in/on carrots. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in carrots and for follow crop restrictions.

## Restrictions

- **DO NOT** apply as a broadcast spray over top of carrots or crop injury may result.
- **DO NOT** apply layby applications by chemigation or by air.
- **DO NOT** apply within 60 days before carrot seed harvest.
- **DO NOT** feed, forage or graze livestock in treated fields.
- **DO NOT** harvest carrots for food or feed use.

## Special Crop Use Restrictions

The pesticide applicator, the producer of the crop, and the seed conditioner must be aware that use of this product according to this labeling is deemed a nonfeed/nonfood use. If the applicator of this pesticide is not the producer, the applicator must provide a copy of this labeling to the producer of the crop. Producers of this crop who use this product, or cause the product to be used on a field they operate, shall provide a copy of this pesticide label to the seed conditioner.

Consequently, no portion of this carrot seed crop, including but not limited to green chop, hay, pellets, meal, whole seed, cracked seed, roots, bulbs, foliage and seed screenings, may be used or distributed for food or feed purposes.

Processed carrot seed from a field treated with this product must bear a specific tag or conspicuous container labeling, or if shipped in bulk, on the shipment invoice or bill of lading, with the following statement: "Not for human consumption or animal feed." All seed screenings from seed processing shall be disposed of in such a manner that the screenings cannot be distributed or used for human food or animal feed purposes.

The seed conditioner shall keep records of screening disposal for three years from the date of disposal and shall furnish the records immediately upon request. Conditioner disposal records shall consist of documentation of on-farm disposal, disposal at a controlled dumpsite, incinerator, composter or other equivalent disposal site and shall include the lot numbers, amount of material disposed of, the grower(s), and the date of disposal.

## CORN

Field, Pop, Field Seed, Pop Seed, Fresh Sweet

**Application Methods:** Apply by ground, air or chemigation.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide in conventional, minimum, or no-till as a preemergence, postemergence, or postemergence incorporated (CULTI-SPRAY) application in field corn.



Apply ACUMEN MICROCAP Herbicide in conventional tillage as a preemergence or postemergence application in field seed corn, popcorn, popcorn seed corn, and fresh sweet corn.

**Regardless of tillage system, plant corn at least 1-1/2 inches deep and completely cover with soil.**

In conventional tillage systems, plant into a seedbed that is firm and free of clods and trash. Use only where adequate tillage is practiced to provide good soil coverage of the corn seed.

In no-till systems, utilize a no-till planter that is capable of planting through crop residue. The use of no-till planters under conditions that **DO NOT** allow good soil coverage of the corn seed can result in reduced crop stand or injury if ACUMEN MICROCAP Herbicide contacts the germinating corn seed. Check equipment to ensure good seed coverage.

ACUMEN MICROCAP Herbicide tank mix combination treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received after application. If cultivation is necessary because of soil crusting or weed germination, use shallow tillage and make certain corn seeds are below the tilled area.

**Additional Weeds Controlled.** In addition to the weeds listed in **Table 2**, ACUMEN MICROCAP Herbicide will control the following weeds in corn with CULTI-SPRAY application: wild proso millet and shattercane.

**Preemergence.** Apply after planting but before weeds germinate and crop emerges.

**Postemergence.** Apply postemergence up to 30 inches tall field corn (20 to 24 inches tall for pop, seed and fresh sweet corn) or in the V8 growth stage, whichever is more restrictive. If the corn canopy prevents applications from reaching the soil, use drop nozzles and apply as a directed spray.

**CULTI-SPRAY.** Apply alone or with atrazine when field corn is at least 4 inches tall until last cultivation (layby). ACUMEN MICROCAP Herbicide plus atrazine must be applied before the field corn reaches 12 inches in height.

**DO NOT exceed 1.2 lbs ai per acre of atrazine, as specified on the atrazine label.** Under situations of low rainfall or soil moisture, when deep germinating weeds such as shattercane or field sandbur are anticipated, mechanical incorporation will provide best results. If cultivation is needed after application and incorporation of ACUMEN MICROCAP Herbicide, do not make the depth of cut deeper than the depth of cut used to incorporate.

## Chemigation Applications

ACUMEN MICROCAP Herbicide may be applied through sprinkler irrigation systems. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label.

## Use Rates

### Preemergence or Postemergence Applications

Soil Texture	Organic Matter		
	< 1.5%	1.5% to 3.0%	> 3.0%
Coarse	2.0 pts/A	3.0 pts/A	3.0 pts/A
Medium	3.0 pts/A	3.0 pts/A	4.0 pts/A
Fine	3.0 pts/A	4.0 pts/A	4.0 pts/A

## CULTI-SPRAY Applications - Field Corn ONLY

Soil Texture	Southern States <sup>1</sup>	Northern States <sup>1</sup>
Coarse	1.5 pts/A	2.0 pts/A
Medium	2.0 pts/A	3.0 pts/A
Fine	3.0 pts/A	3.0 pts/A

<sup>1</sup> See **Use Area** for map of specific states.

## Restrictions

- DO NOT** apply in reduced, minimum or no-till fresh sweet corn, seed corn or popcorn.
- DO NOT** apply in no-till in California.
- DO NOT** apply preplant incorporated.
- DO NOT** apply postemergence in liquid fertilizer.
- Livestock can graze or be fed forage from treated corn after 21 days following application.

ACUMEN MICROCAP Herbicide may be applied sequentially in a single crop season as long as the total use rate applied in the crop season does not exceed the highest rate per acre for any given soil type.

## COTTON

**Application Methods:** Apply by ground, air, or chemigation in conventional, minimum, stale seedbed, or no-till as a preplant surface, preplant incorporated, preemergence, layby or postemergence application in cotton.

## Use Methods, Timings and Use Rates

Preplant surface, preemergence, layby and postemergence treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received after application. Shallow cultivate if soil crusting or soil compaction occurs. If weeds begin to germinate or adequate moisture is not received after application, use shallow tillage (rotary hoe or light harrow) and make sure cotton seeds are below tilled area. The use of a postemergence herbicide treatment may be required to control weed escapes at planting or following cotton emergence.

**Additional Weeds Suppressed.** In addition to the weeds listed in **Table 2**, ACUMEN MICROCAP Herbicide will suppress Russian thistle in the state of Arizona.

**Preplant Surface.** Apply up to 15 days prior to planting. Apply ACUMEN MICROCAP Herbicide tank mixes and sequential programs as specified under the tank mix section.

**Preplant Incorporated.** Apply up to 60 days prior to planting and incorporate. Apply ACUMEN MICROCAP Herbicide tank mixes and sequential programs as specified under the tank mix section.

**Preemergence.** Apply at planting or up to 2 days after planting. Apply to a seedbed that is firm and free of clods. Apply ACUMEN MICROCAP Herbicide tank mixes and sequential programs as specified under the tank mix section.

**Preplant Incorporated followed by Preemergence.** Apply up to 60 days prior to planting and incorporate. Apply overlay application of at planting or up to 2 days after planting. The total amount of ACUMEN MICROCAP Herbicide applied per acre must not exceed the highest labeled rate for a given soil type. Preplant incorporated and preemergence applications of ACUMEN MICROCAP Herbicide may be applied with the labeled tank mix herbicide(s).

**Layby Application (at last cultivation).** Apply directly to the soil between rows as a directed spray following the last normal cultivation (layby). Layby applications can be applied in cotton previously treated with ACUMEN MICROCAP Herbicide or any herbicide(s) registered for use in cotton. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in cotton, and for rotation crop restrictions. The total amount of ACUMEN MICROCAP Herbicide applied per acre per season must not exceed the highest labeled rate for a given soil type. Glyphosate-containing products may be applied with ACUMEN MICROCAP Herbicide at layby in cotton with the Roundup Ready® or glyphosate tolerant gene. **DO NOT apply glyphosate-containing products at layby on non-Roundup Ready or glyphosate tolerant cotton.**

**Postemergence.** Apply by ground or air as a broadcast over-the-top postemergence application in cotton. Not for use postemergence in California.

Postemergence treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received after application. Applications before weeds germinate or after clean cultivation to remove existing weeds are necessary because ACUMEN MICROCAP Herbicide will not control weeds that are emerged at time of application. The use of a postemergence herbicide treatment is required to control emerged weeds.

**Use ACUMEN MICROCAP Herbicide alone or tank mixed with Roundup PowerMAX® Herbicide (on Roundup Ready cotton or Roundup Ready Flex cotton), Roundup WeatherMAX® Herbicide (on Roundup Ready cotton or Roundup Ready Flex cotton) or Liberty® Herbicide (on LibertyLink® cotton).** When tank mixing ACUMEN MICROCAP Herbicide with another herbicide product, always follow the most restrictive labeling. **DO NOT** tank mix and apply over-the-top postemergence with products containing s-metolachlor, glyphosate, prometryn, or flumeturon.

Dry ammonium sulfate (AMS) at 17 lbs/100 gallons of spray solution must be used when tank mixing ACUMEN MICROCAP Herbicide with Roundup PowerMAX or Roundup WeatherMAX. Liquid AMS may also be used, but must be used at an equivalent rate to 17 lbs of dry weight AMS/100 gallons of spray solution. A nitrogen replacement should not be used with this tank mix unless specified as acceptable from Tenkoz in writing. An appropriate mixing order is as follows: fill tank to at least 1/2 full with water; then add the following in order: AMS, ACUMEN MICROCAP Herbicide, Roundup® Herbicide; then fill the tank to capacity with water.

**Postemergence applications of ACUMEN MICROCAP Herbicide on Roundup Ready cotton or Roundup Ready Flex cotton only**

**Note:** The instructions provided for the use of ACUMEN MICROCAP Herbicide on Roundup Ready cotton or Roundup Ready Flex cotton are specific to and must only be used with varieties designated as Roundup Ready cotton or Roundup Ready Flex cotton.

Consult and follow the Roundup PowerMAX or Roundup WeatherMAX labels for their respective rates, application methods, precautions and application timing restrictions.

- **Roundup Ready cotton**

**Tank mixing ACUMEN MICROCAP Herbicide with Roundup PowerMAX or Roundup WeatherMAX (in water):** Apply ACUMEN MICROCAP Herbicide broadcast postemergence over the top of cotton after cotton reaches the 4- to 5-leaf stage of growth. **DO NOT** apply prior to reaching the 4-leaf cotton stage or past the 5-leaf stage or significant crop injury and/or yield loss may occur.

- **Roundup Ready Flex cotton**

**Tank mixing ACUMEN MICROCAP Herbicide with Roundup PowerMAX or Roundup WeatherMAX (in water):** Apply ACUMEN MICROCAP Herbicide broadcast postemergence over the top of cotton after cotton reaches the 4-leaf stage of growth, but not after the 8-leaf stage of growth. Over-the-top

applications made before the 4-leaf stage or after the 8-leaf stage of development may result in crop injury and/or yield loss.

#### **Postemergence applications of ACUMEN MICROCAP Herbicide on LibertyLink cotton**

**Note:** The instructions provided for the use of ACUMEN MICROCAP Herbicide on LibertyLink cotton are specific to and must only be used with varieties designated as LibertyLink cotton.

Consult and follow the Liberty Herbicide label for the respective rates, application method, precautions and application timing restrictions.

#### **LibertyLink cotton**

**Tank mixing ACUMEN MICROCAP Herbicide with Liberty (in water):** Apply ACUMEN MICROCAP Herbicide broadcast postemergence over the top of cotton after cotton reaches the 4-leaf stage of growth, but not after the 8-leaf stage of growth. Over-the-top applications made before the 4-leaf stage or after the 8-leaf stage of development may result in crop injury and/or yield loss.

#### **Postemergence applications of ACUMEN MICROCAP Herbicide ALONE to all cotton (in water)**

Apply ACUMEN MICROCAP Herbicide broadcast postemergence over the top of cotton after cotton reaches the 4-leaf stage of growth, but not after the 8-leaf stage of growth. Over-the-top applications made before the 4-leaf stage or after the 8-leaf stage of development may result in crop injury and/or yield loss.

Over-the-top postemergence applications of ACUMEN MICROCAP Herbicide can be applied in cotton previously treated with at-planting soil applications of ACUMEN MICROCAP Herbicide or any other soil-applied herbicide(s) registered for use in cotton. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in cotton and for rotation crop restrictions. Follow the most restrictive label instructions when using products in combination with soil-applied ACUMEN MICROCAP Herbicide.

**Precautions:** Postemergence applications of ACUMEN MICROCAP Herbicide may cause temporary growth reduction and/or leaf discoloration or malformation of cotton following application.

#### **Restrictions for Postemergence Application of ACUMEN MICROCAP Herbicide ALONE to all cotton (in water):**

**DO NOT** apply over the top in fluid fertilizer.

**DO NOT** apply in tank mix with any adjuvant, surfactant, oil, or other pesticide (except for cotton insecticides).

**DO NOT** apply in any manner except as described in this label, or crop injury and/or yield reduction may occur.

**DO NOT** apply if cotton is under stress (including stress related to previous pesticide treatments, poor fertilization, environmental conditions and/or pest damage) at time of application. If cotton is under stress (including stress related to previous pesticide treatments, poor fertilization, environmental conditions and/or pest damage) at time of application, ACUMEN MICROCAP Herbicide may retard cotton recovery and/or adversely affect yield.

**Fall Application.** Apply ACUMEN MICROCAP Herbicide for weed control in cotton in the fall, after October 15 (up to 140 days prior to planting cotton) in Arizona, California, Louisiana, Mississippi, New Mexico, Oklahoma and Texas. Apply ACUMEN MICROCAP Herbicide at the broadcast rate of 2.0 pints per acre on coarse or medium soils and 3.0 pints per acre on fine soils.

### **Chemigation Applications**

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label.

## Use Rates

### Preplant, Preemergence and Layby Applications

Soil Texture	Conventional or Minimal Tillage	No-till**
Coarse	1.0 to 2.0* pts/A	2.0 pts/A
Medium	2.0 pts/A	3.0 pts/A
Fine	3.0 pts/A	4.0 pts/A

\* DO NOT exceed 1.6 pts/A on coarse-textured soils in California.  
\*\* DO NOT use on soils with more than 3% organic matter.

### Postemergence Applications of ACUMEN MICROCAP Herbicide Alone or in Tank Mix with Roundup PowerMAX Herbicide, or Roundup WeatherMAX Herbicide, or Liberty Herbicide

Soil Texture	Conventional, Minimal Tillage, or No Tillage
Coarse	1.0 to 2.0* pts/A
Medium	1.5 to 2.0 pts/A
Fine	2.0 pts/A

## Restrictions

- DO NOT apply postemergence or in no-till cotton in California.
- DO NOT exceed the highest seasonal rate per acre for any given soil type.
- DO NOT exceed 2.0 pints per acre (0.95 lb active ingredient per acre) when applied postemergence to cotton for any given soil type.
- Preharvest Interval (PHI) is **60 days** between the last application and harvest.
- In treated cotton fields, forage may be fed to or grazed by livestock.
- DO NOT exceed the maximum cumulative seasonal rate of 4.2 pints per acre (2 lbs active ingredient per acre) for combined preplant/preemergence and postemergence applications.

## EDIBLE BEANS

Dry (Navy, Great Northern, Red Kidney, Black, Turtle, Cranberry, Small White Type, Guar), Lima, Snap, Chickpeas (Garbanzo Beans), Southern Peas (Cowpeas), and Sweet Lupins

**Application Methods:** Apply by ground or air.

## Use Methods, Timings and Use Rates

ACUMEN MICROCAP Herbicide may only be applied

- (fall) preplant surface or preplant incorporated in dry beans, lima beans, snap beans, and Southern peas (cowpeas).
- (fall) preplant surface or preplant incorporated or (spring) preplant surface in chickpeas (garbanzo beans).
- (fall) preplant surface or preplant incorporated or preemergence in sweet lupins.

**Fall Applications.** For use only in Idaho, Minnesota, Montana, North Dakota, Oregon, South Dakota, Washington and Wyoming). Apply ACUMEN MICROCAP Herbicide preplant surface or preplant incorporated (rainfall, irrigation or mechanically) in late fall prior to planting edible beans (chickpeas [garbanzo beans], dry beans [including navy, great northern, red kidney, black turtle, cranberry, small white type], lima beans, snap beans, Southern peas [cowpeas], and sweet lupins) the following

spring. Apply ACUMEN MICROCAP Herbicide in the late fall when soil temperatures are 45° F or below but before the ground freezes.

DO NOT apply when the air temperature is below 45° F.

Rainfall or irrigation is required for incorporation and activation. Unpredictable weed control can be expected because factors such as length of time between application and planting as well as uncontrollable weather factors will determine herbicide activity and longevity.

### Use Rates for Fall Applications<sup>1</sup>

Soil Texture	Broadcast Rate <3% Organic Matter	Broadcast Rate >3% Organic Matter
Coarse	2.0 pts/A	2.0 pts/A
Medium	2.5 pts/A	3.0 pts/A
Fine	3.0 pts/A	3.0 pts/A

<sup>1</sup> Use limited to certain states. Follow state-specific instructions and/or restrictions.

**Preplant Incorporated.** Apply up to 60 days prior to planting and incorporate.

**Preemergence.** Apply only to sweet lupins at planting or up to 2 days after planting. Apply to a seedbed that is firm and free of clods.

### Use Rates for Preplant Incorporated and Preemergence Applications

Soil Texture	Southern States <sup>1</sup>	Northern States <sup>1</sup>	
		<3% Organic Matter	>3%
Coarse	1.5 pts/A	2.0 pts/A	2.0 pts/A
Medium	2.0 pts/A	2.5 pts/A	3.0 pts/A
Fine	3.0 pts/A	3.0 pts/A	3.0 pts/A

<sup>1</sup> See Use Area for map of specific states.

## State-specific Instructions

### Idaho, Montana, North Dakota, Oregon, and Washington

Apply ACUMEN MICROCAP Herbicide to chickpeas grown in no-tillage and/or minimum tillage systems in Idaho, Montana, North Dakota, Oregon and Washington. Preplant surface applications must be made within 30 days of planting. DO NOT exceed, 1.5, 2.0, and 3.0 pints per acre in coarse, medium and fine textured soils, respectively. When planting, ensure that the seed furrow is fully closed because conditions that allow the seed furrow to inadequately close and/or allow ACUMEN MICROCAP Herbicide to contact the seed may result in crop injury. Certain unfavorable environmental conditions, including cool temperatures, excessive moisture after application, and wet and/or compacted soil conditions, may result in delayed emergence and stunting with ACUMEN MICROCAP Herbicide use in chickpeas. Adequate rainfall or irrigation after application prior to weed seedling germination will provide the most effective weed control. Herbicide performance from surface applications may be decreased compared to soil incorporated applications.

### Idaho, Oregon, Washington

Apply ACUMEN MICROCAP Herbicide postplant preemergence only to chickpeas grown in conventional tillage systems in Idaho, Oregon, and Washington. Application must be made within 2 days of planting. Do not exceed 1.5 pints per acre. Apply to a firm seedbed free of clods. Soil conditions that cause poor seed furrow closure and coverage may result in delayed emergence and stunting of the crop. Under

certain environmental conditions, including cool temperatures, excessive moisture after application and wet soil conditions may result in delayed emergence and stunting with ACUMEN MICROCAP Herbicide use in chickpeas. Adequate rainfall or irrigation after application prior to weed seedling germination will provide the most effective weed control.

#### **Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, Oregon, Washington, and Wyoming**

Apply ACUMEN MICROCAP Herbicide by ground as a postplant preemergence treatment to dry beans grown under sprinkler irrigation in Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, Oregon, Washington, and Wyoming. Dry beans must have a minimum planting depth of 2 inches. Prior to applying ACUMEN MICROCAP Herbicide to dry beans, check with local seed company or seed supplier for sensitive varieties and to verify the selectivity of ACUMEN MICROCAP Herbicide on the specific dry bean variety to be treated. ACUMEN MICROCAP Herbicide applications made postplant preemergence to dry beans must be immediately followed by 0.50 to 0.75 inch water from overthead irrigation/rainfall. ACUMEN MICROCAP Herbicide application must be made within 1 to 4 days of planting and up to, but not to exceed, 2.0 pints per acre. Apply to a firm seedbed free of clods. Soil conditions that cause poor seed furrow closure and coverage may result in delayed emergence and stunting of the crop. **DO NOT** apply as a chemigation application. **DO NOT** apply ACUMEN MICROCAP Herbicide in tank mix with products containing flumioxazin or halosulfuron as a preemergence application to dry beans due to unacceptable crop response. Under certain environmental conditions including cool temperatures, excessive moisture after application and wet soil conditions may result in crop injury, delayed emergence, and/or stunting with ACUMEN MICROCAP Herbicide use in dry beans. Adequate rainfall or irrigation after application prior to weed seedling germination will provide the most effective weed control.

### **Restrictions**

- **DO NOT** feed lupin hay and forage or graze livestock in treated lupin fields.
- **DO NOT** apply more than once per cropping season.
- **DO NOT** apply in any type of irrigation system.

## **FALLOW**

**Application Methods:** Apply by ground, air, or chemigation.

### **Use Methods, Timings and Use Rates**

Apply ACUMEN MICROCAP Herbicide to fallow ground following crop harvest as a planned residual treatment to control labeled broadleaf and grass weeds as they germinate.

Apply as a broadcast spray at rates up to, but not to exceed, **3.0 pints per acre**. Emerged weeds will not be controlled by this treatment. ACUMEN MICROCAP Herbicide must be applied with a labeled tank mix partner (i.e. glyphosate) to provide control of emerged weeds.

**DO NOT** make more than one application of during a single fallow period.

**DO NOT** apply to fallow ground after July 1 if treated fields are to be planted the following spring to crops not labeled for preplant or preplant incorporated applications of ACUMEN MICROCAP Herbicide.

There must be at least a 4-month interval between a ACUMEN MICROCAP Herbicide fallow application and the rotational planting of any fall-seeded cereal crop. Otherwise, specific rotational crop intervals must be adhered to between a fallow application of ACUMEN MICROCAP Herbicide and the planting of the following crop (see **Crop Rotation Restrictions** in the **Restrictions and Precautions** section of this label).

## **State-specific Instructions**

In **Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, Oregon, Utah, Washington, and Wyoming**, apply as a broadcast spray at rates up to, but not to exceed, **3.2 pints per acre** of ACUMEN MICROCAP Herbicide.

## **FARMSTEADS**

Apply as a broadcast spray at **2.1 quarts per acre** for short-term (2 to 4 months) or at **4.2 quarts per acre** for long-term (6 to 8 months) preemergence control of labeled broadleaf and grass weeds as they germinate on farmstead nonagricultural areas including barnyards, lanes, driveways, machinery or implement yards, wind-breaks, and nonagricultural fencerows or ditchbanks.

## **FORAGE GRASSES (COOL-SEASON)**

**Application Methods:** Apply by air, ground, or chemigation or on dry bulk fertilizer.

### **Use Methods, Timings and Use Rates**

For use in established **Perennial Cool-Season Grasses** including bentgrass, bluegrass (Kentucky), Bromegrass, fescue (fine, tall), orchardgrass, perennial ryegrass, timothy, and wheatgrass grown for forage, green chop, silage, hay production, and/or grown in pastures, rangeland, or Federal Conservation Reserve Program (CRP) land for livestock grazing.

Apply ACUMEN MICROCAP Herbicide to these and similar established (having 6 or more tillers per plant) grasses. Make application before target weeds germinate in the fall after the last cutting/mowing/grazing; in winter; in the spring; or in-season between cuttings.

Make a uniform broadcast application at 1.1 to 4.2 quarts per acre in a single application or sequentially at least 30 days apart. DO NOT apply more than 4.2 quarts of ACUMEN MICROCAP Herbicide per acre per year. Use the higher rate when weed pressure is high or when a longer duration of residual weed control is required.

ACUMEN MICROCAP Herbicide may cause temporary injury to cool-season forage grass stands. If application is made in the following situations the risk of crop injury may be increased: in periods of cold temperatures that limit normal crop growth; in extended cold temperatures that initiate winter dormancy; disease, extremely cold weather, drought, extensive frost heaving, salinity, low pH, or high pH may also weaken stands and make the crop more susceptible to herbicidal injury.

### **Mixed Stands of Established Cool-Season Forage Grasses and Alfalfa**

Apply ACUMEN MICROCAP Herbicide to mixed stands of established alfalfa (defined as alfalfa planted in the fall or spring which has gone through a first cutting/mowing) and cool-season forage grasses. Apply in the fall after the last cutting/mowing/grazing, in winter, in the spring before weed germination, or in-season between cuttings.

### **Chemigation Applications**

ACUMEN MICROCAP Herbicide may be applied through sprinkler irrigation systems. Follow all directions, special instructions, and precautions in the Spraying Instructions section of the ACUMEN MICROCAP Herbicide label.

### **Tank Mixes**

ACUMEN MICROCAP Herbicide may be applied in a sequential use program with other herbicides labeled for this use, or applied as a tank mix with other registered herbicides that control emerged weeds. Applications of postemergence herbicides

may cause crop injury, so proposed tank mixes must be tested on a small portion of the target crop to determine if damage is likely. Always perform a mixing test to check compatibility of ACUMEN MICROCAP Herbicide with potential tank mix partners and fertilizers. Follow all precautions and restrictions on the labels of all products applied in combination with ACUMEN MICROCAP Herbicide, and always follow the most restrictive label.

**Physical incompatibility, reduced weed control, or crop injury may result from mixing ACUMEN MICROCAP Herbicide with other pesticides, additives, or fertilizers.**

**Preharvest Interval (PHI):** There is no PHI for ACUMEN MICROCAP Herbicide-treated grass forage, green chop, silage, hay, pasture, or rangeland.

## Restrictions

- **DO NOT** apply more than 4.2 quarts of ACUMEN MICROCAP Herbicide per acre per year.
- **DO NOT** apply if surface water is present in the field.
- **DO NOT** graze or harvest mixed stand alfalfa/cool season forage grasses for forage and hay until 14 or more days after application.
- **DO NOT** apply ACUMEN MICROCAP Herbicide to mixed stands of cool-season forage grasses with other forage legumes besides alfalfa.

## FORAGE GRASSES (WARM-SEASON) and other perennial warm-season grasses

**Application Methods:** Apply by air, ground, chemigation, or on dry bulk fertilizer.

## Use Methods, Timings and Use Rates

Apply only to established (defined as planted in the fall or spring which has gone through a first cutting/mowing) **Bermudagrass and other perennial warm-season grasses.**

Apply ACUMEN MICROCAP Herbicide in fields of Bermudagrass (and other perennial warm-season grasses including Bahiagrass, buffalograss, switchgrass, and others) grown for forage or hay production and/or grown in pastures or rangeland for livestock grazing.

Apply prior to target weed germination in the dormant season (when grasses are not actively growing in fall; during winter dormancy period; or in early spring before greenup) or in-season between cuttings. **DO NOT** apply to Bermudagrass or other perennial warm-season grasses after greenup in the spring before the first cutting. Uniformly apply at a broadcast rate of **1.1 to 4.2 quarts per acre** in a single application. As an option, apply in two split applications, with 1/2 the seasonal application rate applied in the dormant season, followed by the other 1/2 the seasonal application rate applied in-season between cuttings. Use the higher application rate where more dense infestations of targeted annual grasses and annual broadleaf weeds are anticipated, or when a longer duration of residual weed control is desired.

Apply ACUMEN MICROCAP Herbicide in a sequential use program or as a tank mix with other registered herbicides that control emerged weeds.

ACUMEN MICROCAP Herbicide may cause temporary injury to Bermudagrass and other perennial warm-season grass stands. Disease, extremely cold weather, drought, extensive frost heaving, low or high pH, or salinity may weaken stands and make the crop more susceptible to herbicidal injury.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems. Follow all directions, special instructions and precautions about chemigation in **Spraying Instructions** section of this label.

## Tank Mixes

Apply ACUMEN MICROCAP Herbicide as a tank mix with other herbicides labeled for use in Bermudagrass and other perennial warm-season grass fields. Tenkoz recommends testing tank mixes on a small portion of the target crop to determine if damage is likely to occur.

**Physical incompatibility, reduced weed control, or crop injury may result FROM MIXING ACUMEN MICROCAP Herbicide with other pesticides, additives, or fertilizers.**

Applications of postemergence herbicides may cause crop injury, such as stunting or chlorosis of Bermudagrass and other perennial warm-season grasses. Consult with your local distributor or dealer regarding local tank mix options. Always perform a mixing test to check the compatibility of ACUMEN MICROCAP Herbicide with all potential tank mix partners and fertilizers. Follow all precautions and restrictions on the labels of all products applied in combination with ACUMEN MICROCAP Herbicide. Always follow the most restrictive label.

## Preharvest Interval (PHI)

There is no PHI for ACUMEN MICROCAP Herbicide-treated grass forage, hay, or for livestock grazing.

## Restrictions

- **DO NOT** apply more than 4.2 quarts per acre per year from any combination of applications.
- **DO NOT** apply if surface water is present in the field.
- Not for use on sod production fields of Bermudagrass or other cool-season grasses.

## FRUITING VEGETABLES

**African eggplant, Bell pepper, Bush tomato, Cocona, Currant tomato, Eggplant, Garden huckleberry, Goji berry, Groundcherry, Martynia, Naranjilla, Nonbell pepper, Okra, Pea eggplant, Pepino, Roselle, Scarlet eggplant, Sunberry, Tomatillo, Tomato, Tree tomato**

**Application Methods:** Apply by ground or air.

## Use Methods, Timings and Use Rates

Uniformly apply by ground or air as a broadcast preplant incorporated application or as a broadcast preplant surface application prior to transplanting fruiting vegetables.

Uniformly apply only by ground as a post-directed application to transplanted or established direct-seeded fruiting vegetables.

**DO NOT** apply prior to direct-seeded fruiting vegetables.

**DO NOT** apply postemergence over the top of or to foliage of fruiting vegetables because severe injury may occur. Apply ACUMEN MICROCAP Herbicide as a post-directed spray on the soil at the base of the plant, beneath plants, and between rows. Avoid direct contact with foliage or stems. Be sure roots of transplants are established. Following the post-directed spray and when sufficient rainfall or irrigation does not occur to activate the herbicide, mechanically incorporate at the time of blocking and thinning or at layby. Apply ACUMEN MICROCAP Herbicide prior to weed germination. Emerged weeds will not be controlled by this treatment.

Use ACUMEN MICROCAP Herbicide in fruiting vegetables transplanted to raised beds. Prior to transplanting, apply ACUMEN MICROCAP Herbicide preplant non-incorporated in a band to the top of the pressed bed just prior to laying plastic. After transplanting, apply ACUMEN MICROCAP Herbicide in a band to the previously untreated row middles between the transplanted beds. For either of the banded applications to the bed or row middles, **DO NOT** overfertilize and exceed the maximum broadcast use rate per acre for the given soil texture.

ACUMEN MICROCAP Herbicide applied at 2.0 to 3.0 pints per acre may aid in the control or suppression of the following weeds when used as part of a comprehensive weed management program: black nightshade, hairy nightshade.

## Use Rates

Soil Texture	Broadcast Rate
Coarse	1.0 to 1.5 pts/A
Medium	1.5 to 2.0 pts/A
Fine	1.5 to 3.0 pts/A

## Restrictions

- **DO NOT** apply more than 3.0 pints per acre per season.
- **DO NOT** apply within 21 days before harvest of tomatoes.
- **DO NOT** apply within 70 days before harvest of all other fruiting vegetables.
- **DO NOT** plant lettuce within 6 months after application if the rows were covered with plastic.

## Precautions

- Avoid root contact with ACUMEN MICROCAP Herbicide-treated soil when placing transplants into furrow or hole or injury may occur.

## GRAIN SORGHUM

**Application Methods:** Apply by ground or air.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide as a postemergence incorporated (CULTI-SPRAY) application in grain sorghum grown in all states.

Apply ACUMEN MICROCAP Herbicide early postemergence in grain sorghum grown in states east of the Mississippi River and in Arizona, Arkansas, eastern Texas, Louisiana, and the Missouri bootheel.

**Additional Weeds Controlled.** In addition to the weeds listed in **Table 2**, ACUMEN MICROCAP Herbicide as a CULTI-SPRAY application will control the following weeds in grain sorghum: wild proso millet and shattercane.

**CULTI-SPRAY.** Apply from the 4-inch growth stage to as late as the last cultivation (layby) of grain sorghum. See specific directions for (CULTI-SPRAY) application under **Application Instructions**.

**Early Postemergence.** For use only in states east of the Mississippi River plus Arizona, Arkansas, eastern Texas, Louisiana, and the Missouri bootheel.

Prepare the seedbed so it is firm and free of clods and trash. Use only where adequate tillage is practiced to provide good seed coverage. Plant grain sorghum at least 1-1/2 inches deep to ensure good seed coverage.

## Use Rates

### CULTI-SPRAY Application

Soil Texture	Southern States <sup>1</sup>	Northern States <sup>1</sup>
Coarse	1.5 pts/A	2.0 pts/A
Medium	2.0 pts/A	3.0 pts/A
Fine	3.0 pts/A	3.0 pts/A

<sup>1</sup> See **Use Area** for map of specific states.

## Early Postemergence Application

Soil Texture	ACUMEN MICROCAP Herbicide
Coarse	<b>DO NOT USE</b>
Medium, Fine	2.0 pts/A

## Restrictions

- **DO NOT** apply in grain sorghum preplant incorporated or preemergence because serious crop injury can result.
- **DO NOT** apply in grain sorghum more than once per crop season.
- **DO NOT** apply as a CULTI-SPRAY treatment in grain sorghum planted in double-row beds.
- **DO NOT** replant grain sorghum if crop loss occurs.
- **DO NOT** apply in liquid fertilizer.
- Livestock can graze or be fed forage from ACUMEN MICROCAP Herbicide-treated grain sorghum fields after 21 days following application.

## GREEN ONIONS

Chive (fresh leaves), Chive, Chinese (fresh leaves), Elegans hosta, Fritillaria (leaves), Kurrat, Lady's leek, Leek, Leek (wild), Onion (Beltsville bunching, fresh, green, macrostem, tree (tops), Welsh (tops)), Shallot (fresh leaves)

**Application Methods:** Apply preemergence, split application, or postemergence by ground, air, or chemigation.

## Use Methods, Timings and Use Rates

Uniformly apply 2.0 pints per acre as a broadcast spray to the soil surface as preemergence spray or as a postemergence spray to the crop at the 2 to 3 true-leaf stage at least 30 days before harvest. If ACUMEN MICROCAP Herbicide is to be applied sequentially as both a preemergence and postemergence spray, the preemergence spray must be applied 30 days prior to the postemergence spray. Onion seed must be fully covered by soil at planting. Injury may occur if onion seed is exposed to ACUMEN MICROCAP Herbicide.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems. Apply at 2 to 3 true-leaf stage at least 30 days before harvest. **DO NOT** irrigate in excess of 0.5 inch of water. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label.

## Restrictions

- Only apply preemergence to green onions grown on muck soils or on mineral soils with greater than 3% organic matter.
- **DO NOT** apply more than 2.0 pints per acre per application.
- **DO NOT** apply more than 4.0 pints per acre per season.
- **DO NOT** apply within 30 days before harvest.
- **DO NOT** feed forage or graze livestock in treated fields.
- Not for use in California unless accompanied by supplemental labeling.

## HOPS

**Application Method:** Apply by ground only.

### Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide before target weeds germinate, when hops are in the dormant or vegetative stages of growth. Make application as a broadcast or banded treatment (including postemergence-directed) using ground equipment, applying directly to the ground beneath the vines and/or in areas between rows. Apply uniformly at a broadcast rate of 1.1 to 4.2 quarts (1 to 4 lbs ai/A) in either a single application or sequential applications with at least 30 days between applications. ACUMEN MICROCAP Herbicide may be applied with other herbicides registered on hops for control of emerged weeds as a sequential use program or as a tank mix. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture (for example, first aid from one product, spray drift management from another).

### Restrictions

- **DO NOT** apply to hops by air or through any type of irrigation system.
- **DO NOT** apply over the top of vines with leaves or cones. Spray contacting hop foliage or cones may cause injury.
- **DO NOT** apply more than 4.2 quarts of ACUMEN MICROCAP Herbicide per acre per year to hops from any combination of applications.
- Preharvest Interval (PHI) for hop cones is 90 days.
- **DO NOT** use in California except as directed in supplemental labeling.

## LEAF LETTUCE

**Application Methods:** Apply by ground or air.

### Use Methods, Timings and Use Rates

With a single application, uniformly apply up to 2.1 pints per acre as a broadcast foliar spray to either direct-seeded or transplanted leaf lettuce from the 3-leaf stage until 20 days before harvest.

### Restrictions

- **DO NOT** apply preplant or pretransplant or preemergence (direct-seeded) to leaf lettuce because severe injury may occur.
- **DO NOT** foliar apply to leaf lettuce before the 3-leaf growth stage because severe injury may occur.
- **DO NOT** apply more than 2.1 pints per acre per season.
- **DO NOT** apply within 20 days before leaf harvest.
- **DO NOT** use on leaf lettuce in California.

## LEAFY BRASSICA GREEN

Broccoli raab, Chinese cabbage (bok choy), Collards, Kale, Mizuna, Mustard greens, Mustard spinach, Rape greens, Turnip greens (cultivars or varieties grown for leaves only)

**Application Methods:** Apply by ground or air.

### Use Methods, Timings and Use Rates

With a single application, uniformly apply up to 2.1 pints per acre as a broadcast foliar spray to either direct-seeded or transplanted leafy Brassica greens at the 4-leaf to 5-leaf stage.

### Restrictions

- **DO NOT** apply preplant, pretransplant, or preemergence (direct-seeded) to leafy Brassica greens because severe injury may occur.
- **DO NOT** foliar apply to leafy Brassica greens before the 4-leaf growth stage because severe injury may occur.
- **DO NOT** apply to turnip greens varieties grown for roots or to dual-purpose varieties grown for roots and tops.
- **DO NOT** use treated turnip greens roots for any feed or food purpose.
- **DO NOT** apply more than 2.1 pints per acre per season.
- **DO NOT** apply within 21 days before leafy greens are harvested.

## LENTILS AND PEAS

English, Dry, Garden, Dwarf, Green, Pigeon, and Edible Pod

**Application Methods:** Apply by ground or air.

### Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide preplant surface or preplant incorporated for weed control in lentils and peas.

**Preplant Surface and Preplant Incorporated (fall applications in Idaho, Minnesota, Montana, North Dakota, Oregon, South Dakota, Washington, and Wyoming)**

Apply ACUMEN MICROCAP Herbicide and incorporate (rainfall, irrigation or mechanically) in late fall prior to planting lentils or peas the following spring. Apply in the late fall when soil temperatures are 45° F or below but before the ground freezes.

**DO NOT** apply when the air temperature is below 45° F.

Rainfall or irrigation is required for incorporation and activation. Unpredictable weed control can be expected because factors such as length of time between application and planting as well as uncontrollable weather factors will determine herbicide activity and longevity.

**Preplant Incorporated.** Apply ACUMEN MICROCAP Herbicide 60 days prior to planting up to immediately before planting. After application, rotary hoeing and shallow cultivation/tillage can be practiced without reducing weed control. Avoid tillage that will bring untreated soil to the surface.



## Use Rates

### Preplant Surface and Preplant Incorporated Application<sup>1</sup>

Soil Texture	Broadcast Rate
Coarse	1.5 pts/A
Medium	2.0 pts/A
Fine	3.0 pts/A

<sup>1</sup> Follow seasonal restrictions and/or state-specific instructions.

## State-specific Instructions

### Idaho, Montana, North Dakota, Oregon, and Washington

Apply ACUMEN MICROCAP Herbicide to lentils or peas (dry peas only) grown in no-tillage and/or minimum tillage systems in Idaho, Montana, North Dakota, Oregon and Washington. Preplant surface applications must be made within 30 days of planting. When planting, ensure that the seed furrow is fully closed because conditions that allow the seed furrow to inadequately close and/or allow ACUMEN MICROCAP Herbicide to contact the seed may result in crop injury. Certain unfavorable environmental conditions, including cool temperatures, excessive moisture after application, and wet and/or compacted soil conditions, may result in delayed emergence and stunting with ACUMEN MICROCAP Herbicide use in lentils or peas. Adequate rainfall or irrigation after application prior to weed seedling germination will provide the most effective weed control. Herbicide performance from surface applications may be decreased compared to soil incorporated applications.

### Idaho, Oregon, Washington

Apply ACUMEN MICROCAP Herbicide postplant preemergence only to lentils or all peas grown in conventional tillage systems in **Idaho, Oregon and Washington**. Application must be made within 2 days of planting. Apply up to but not to exceed 1.5 pints per acre. Apply to a firm seedbed free of clods. Soil conditions that cause poor seed furrow closure and coverage may result in delayed emergence and stunting of the crop. Under certain environmental conditions including cool temperatures, excessive moisture after application and wet soil conditions may result in delayed emergence and stunting with ACUMEN MICROCAP Herbicide use in peas or lentils. Adequate rainfall or irrigation after application prior to weed seedling germination will provide the most effective weed control.

## Restrictions

- **DO NOT** use in California.
- **DO NOT** apply preemergence in peas unless otherwise noted in state-specific instructions.
- **DO NOT** apply more than once per cropping season.
- **DO NOT** apply to peas, lentils, pea or lentil forage, pea silage, pea hay, or pea straw grown for livestock feed.
- **DO NOT** apply in any type of irrigation system.

## Crop Rotation

- Any crop registered for a preplant incorporated application of ACUMEN MICROCAP Herbicide can be double cropped after peas.

## MELONS

Cantaloupe, Citron melon, Muskmelon, Watermelon

**Application Methods:** Apply only by ground.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide sequentially in melon production. Make the initial application of up to **2.1 pints per acre** as a shielded application to row middles (either before melon transplanting or before a seeded crop has emerged) or between rows covered with plastic mulch (prior to holes being punched in plastic for melon planting). Make a second shielded application at up to **2.1 pints per acre** to row middles or between plastic mulch prior to melon vine running. The interval between the sequential applications must be at least 21 days. Avoid spray contact with melon foliage or running vines because crop injury could occur.

## Restrictions

- **DO NOT** apply more than 2.1 pints per acre in a single application or more than 4.2 pints per acre per season.
- **DO NOT** apply within 35 days before melon harvest.
- **DO NOT** feed forage or graze livestock in treated fields.
- Not for use in California except as directed by supplemental labeling.

## MINT

Peppermint and Spearmint

**Application Methods:** Apply by ground or air.

## Use Methods, Timings and Use Rates

Make a single broadcast preemergence application of ACUMEN MICROCAP Herbicide to dormant established mint before weed germination at 1.5 pints to 4.0 pints per acre, depending on soil texture (see following chart). After a ACUMEN MICROCAP Herbicide application, some temporary crop injury may be observed early in the growing season as mint breaks dormancy and begins to grow.

ACUMEN MICROCAP Herbicide will not cause crop injury when applied according to the label under normal growing conditions. Non-uniform application may result in injury to crops, poor stands, or soil residues; conversely, uneven application may reduce weed control. Diseases, cold weather, excessive moisture, deep planting, low or high pH, salinity, or drought may weaken seedlings and plants and make them more susceptible to herbicidal damage.

## Use Rates

Soil Texture	Broadcast Rate
Coarse	1.5 to 2.0 pts/A
Medium	2.0 to 4.0 pts/A
Fine	2.0 to 4.0 pts/A

## Restrictions

- **DO NOT** apply to baby mint in the first year of growth and establishment.
- **DO NOT** apply more than 4.0 pints per acre per season.
- **DO NOT** apply within 90 days before harvest.
- **DO NOT** allow livestock to graze on treated spent hay or feed treated spent hay to livestock.
- **DO NOT** apply this product on mint through any type of irrigation system.

## Precautions

- Application to mint that is near dormancy break can result in crop injury. Risk of crop injury increases the closer application is to mint dormancy break.
- Mint stands that have been weakened by age, disease, cold weather, excessive moisture, or other factors are more susceptible to herbicidal damage.

### DRY BULBS – Garlic, Onions, Shallots

Daylily, bulb; Fritillaria, bulb; Garlic, bulb; Garlic, great-headed, bulb;  
Garlic, serpent, bulb; Lily, bulb; Onion, bulb; Onion, Chinese, bulb;  
Onion, pearl; Onion, potato, bulb; Shallot, bulb

**Application Methods:** Apply by ground, air or chemigation.

## Use Methods, Timings and Use Rates

Apply to direct-seeded and transplanted dry bulb onions and dry bulb shallots.

## Mineral Soils

### Mineral Soil Use Rates

Soil Texture	Broadcast Rate
Coarse	1.5 pts/A
Medium	2.0 pts/A
Fine	3.2 pts/A

**Preemergence.** Apply after garlic planting but before crop and weeds emerge.

**Postemergence.** Apply when garlic is in the 1st to 5th true leaf growth stage.

**Split Application.** Apply in garlic at both preemergence and postemergence timings.

## Restrictions (Mineral Soils)

- **DO NOT** mechanically incorporate except as specified for use on dry bulb onions in Colorado and the Texas High Plains.
- **DO NOT** exceed 3.2 pints per acre per growing season (except Idaho, Oregon, and Washington).
- **DO NOT** apply within 60 days before harvest in California and within 45 days before harvest in all other states.
- **DO NOT** feed or graze these crops.
- **DO NOT** apply preemergence through the loop stage if heavy rains are expected or severe crop injury may result. If irrigating immediately after ACUMEN MICROCAP Herbicide application at the preemergence through loop stage, **DO NOT** irrigate in excess of 1/2 inch of water.

## State-specific Instructions

### In All States Except California

Apply as a broadcast treatment when dry bulb onions or dry bulb shallots have 2 to 9 true leaves.

### Additional Use in Colorado, Kansas, and Nebraska

Apply ACUMEN MICROCAP Herbicide sequentially in seeded dry bulb onions. Apply first application at loop stage. Apply sequential application early postemergence (2nd to 9th true-leaf stage). **DO NOT** exceed the maximum labeled rate for a given soil texture. **DO NOT** apply ACUMEN MICROCAP Herbicide at loop stage through the 9th true-leaf stage if heavy rains are expected, or severe crop injury may result.

### Additional Use in Colorado and the High Plains of Texas

For transplanted dry bulb onions only, apply and shallow incorporate (less than 2 inches deep) ACUMEN MICROCAP Herbicide into preformed beds prior to transplanting.

### Additional Use in Idaho, Oregon, and Washington

Apply as a broadcast treatment when dry bulb onions or dry bulb shallots are between the flag leaf to 9th true-leaf stage. Use ACUMEN MICROCAP Herbicide at 3.0 to 4.0 pints per acre for dodder control on medium-textured and fine-textured soils. **DO NOT** apply using chemigation at the dodder control rate.

Apply ACUMEN MICROCAP Herbicide in the fall or spring to the furrow area of land bedded in the fall in preparation for planting seed of dry bulb onions the following spring. Apply as a banded application at rates based on appropriate soil texture. Band width is 1/2 the width of the row spacing. Keep ACUMEN MICROCAP Herbicide away from the area where dry bulb onion seed will be planted.

Harrow off tops of beds following ACUMEN MICROCAP Herbicide furrow applications prior to planting dry bulb onions.

For selective weed control in the onion row, apply as a banded postemergence application to flag-leaf dry bulb onions at the labeled rates based on soil texture. Apply ACUMEN MICROCAP Herbicide only once to the furrow area and once to the dry bulb onion row as a postemergence application.

### Additional Use in Michigan

For mineral soils containing >10% organic matter, follow the directions for muck soils (see following).

### In California

Only apply ACUMEN MICROCAP Herbicide as a single application when dry bulb onions or dry bulb shallots have 2 to 6 true leaves.

### Additional Use in Oregon and Washington – Dry Bulb Onions – Preemergence Weed Control

Apply ACUMEN MICROCAP Herbicide to control annual grass and small seeded broadleaf weeds to uniformly planted (1-inch deep; furrow must be thoroughly covered with soil) dry bulb onions. **Failure to plant dry bulb onions a minimum of 1 inch deep in the soil increases the potential for injury.** Apply in a single application after germination of the onion seed but prior to emergence (delayed preemergence) when 75% of the radicles have developed on the onion seedlings. Determine the radicle emergence by digging onion seedlings at random locations in the field and note radicle elongation. Apply ACUMEN MICROCAP Herbicide in 10 or more gallons of water per acre using ground equipment at the rates specified in the table below. Adequate incorporation by rainfall or irrigation will ensure effective control of weeds. Do not apply more than 0.25 inch of initial overhead irrigation following delayed preemergence application of ACUMEN MICROCAP Herbicide on dry bulb onions. ACUMEN MICROCAP Herbicide must be applied to clean-tilled soil for effective weed control. A tank mix with a burndown herbicide controls emerged weeds prior to onion emergence.

The risk of crop injury is greater on coarse-textured soils (>90% sand) than with medium- or fine-texture soils. Potential injury may occur due to variability within soil type. Using higher rates of ACUMEN MICROCAP Herbicide within soil types may increase the risk of crop injury. If adverse weather results in loss of onions, any crop registered for ACUMEN MICROCAP Herbicide preplant incorporated use can be replanted the same year into ACUMEN MICROCAP Herbicide-treated soil with no adverse effects. Rework the soil deeper than 2 inches if replanting is necessary.

ACUMEN MICROCAP Herbicide may be applied sequentially in dry bulb seeded onions. Make the first application using delayed preemergence directions. Make sequential applications of ACUMEN MICROCAP Herbicide early postemergence (up to 9th true-leaf stage).

### Restrictions for this use:

- **DO NOT** exceed 3.0 pints per acre per crop.
- **DO NOT** exceed the maximum labeled rate for a given soil texture.
- **DO NOT** apply through any type of irrigation system or by air.
- **DO NOT** apply preplant incorporated or preplant.
- **DO NOT** apply within 45 days of harvest.
- **DO NOT** feed treated dry bulb onions to livestock or allow livestock to graze in treated areas.

### Use Rates

Soil Texture	Delayed Preemergence Broadcast Rate (OR and WA only)
Coarse	1.0 to 2.0 pts/A
Medium	1.5 to 2.5 pts/A
Fine	1.5 to 3.0 pts/A

### Additional Use in California – Dry Bulb Onions – Preemergence in Direct-Seeded Onions at the Loop Stage

Apply ACUMEN MICROCAP Herbicide to control annual grass and small seeded broadleaf weeds at 1.0-1.5 pints per acre after onion seedlings have emerged and are at the loop stage of growth. Select the use rate according to the soil texture as shown in the table below. Apply ACUMEN MICROCAP Herbicide in 10 or more gallons of water per acre using ground equipment. Adequate incorporation by rainfall or irrigation will ensure effective control of weeds. Do not apply more than 0.25 inch of initial overhead irrigation following application of ACUMEN MICROCAP Herbicide in direct seeded onions at the loop stage. ACUMEN MICROCAP Herbicide must be applied to clean-tilled soil for effective weed control.

### Use Rates

Soil Texture	Preemergence in Direct-Seeded Onions At the Loop Stage (CA only)
Coarse	1.0 to 1.5 pts/A
Medium	1.0 to 1.5 pts/A
Fine	1.5 pts/A

The risk of crop injury is greater on coarse-textured soils (>90% sand) than with medium- or fine-texture soils. Potential injury may occur due to variability within soil type. Using higher rates of ACUMEN MICROCAP Herbicide within soil types may increase the risk of crop injury. If adverse weather results in loss of onions, any crop registered for ACUMEN MICROCAP Herbicide preplant incorporated use can be replanted the same year into ACUMEN MICROCAP Herbicide-treated soil with no adverse effects. Rework the soil deeper than 2 inches if replanting is necessary.

ACUMEN MICROCAP Herbicide may be applied sequentially in dry bulb seeded onions. Make the first application after seedling emergence at the loop stage of growth. Make sequential applications of ACUMEN MICROCAP Herbicide early postemergence (up to 6th true-leaf stage).

### Restrictions for California Dry Bulb Onions:

- **DO NOT** exceed 3.2 pints per acre in onions per crop per year.
- **DO NOT** exceed the maximum labeled rate for a given soil texture.
- **DO NOT** apply preemergence in direct seeded onions at the loop stage through any type of irrigation system or by air.
- **DO NOT** apply preplant incorporated or preplant.
- **DO NOT** apply to muck soils.

- **DO NOT** apply to green (bunching) onions or leeks.
- **DO NOT** apply within 60 days of harvest.
- **DO NOT** feed treated dry bulb onions to livestock or allow livestock to graze in treated areas.

## Muck Soils

ACUMEN MICROCAP Herbicide may be applied sequentially on in dry bulb onions or dry bulb shallots on muck soils, only once preemergence and only twice postemergence, as follows:

### Muck Soil Use Rates

Application Timing and Growth Stage	Rate
Preemergence through Loop Stage	4.0 pts/A
Early Postemergence (2nd to 6th true-leaf stage)	4.0 pts/A
Late Postemergence (6th to 9th true-leaf stage)	4.0 pts/A

## Restrictions (Muck Soils)

- **DO NOT** apply to muck soils in California.
- **DO NOT** apply within 45 days before harvest.
- **DO NOT** feed or graze these crops.
- **DO NOT** apply more than 12.6 pints per acre per growing season on muck soils. To maximize crop safety, ensure good soil coverage during planting or transplanting and delay preemergence applications to the loop stage, if possible.
- **DO NOT** apply preemergence through the loop stage if heavy rains are expected or severe crop injury may result. If irrigating immediately after ACUMEN MICROCAP Herbicide application at the preemergence through loop stage, **DO NOT** irrigate in excess of 1/2 inch of water.
- **DO NOT** plant sugar beets, red beets, spinach, winter wheat, or winter barley as rotational crops on muck soils for 12 months from the time of last application if more than 3.2 pints per acre of ACUMEN MICROCAP Herbicide is applied to the onion crop.
- If loss of onion crop occurs, **DO NOT** replant any crop other than onions in muck soil during the same cropping year and **DO NOT** work the soil deeper than 2 inches.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems. Apply between the 2nd and 9th true-leaf stage (2nd to 6th true-leaf stage in California) unless otherwise specified below. **DO NOT** irrigate in excess of 1/2 inch of water. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label.

## PEANUTS

**Application Methods:** Apply by ground, air, or chemigation.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide preplant incorporated in peanuts and applied preemergent to peanuts grown under overhead irrigation.

**Preplant Incorporated.** Apply up to 60 days prior to planting and incorporate.

**Preemergence.** Apply at planting or up to 2 days after planting and before crop emergence. To prevent decreased crop pegging, adequate incorporation must be achieved by applying a minimum of 0.75 inch of overhead irrigation or rainfall within 48 hours of application.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label.

## Use Rates

Region	Rate
New Mexico, Oklahoma, and Texas	1.0 to 2.0 pts/A
Other peanut growing states*	2.0 pts/A

\* For heavy weed infestations, especially of Texas panicum, up to 3.2 pts/A of ACUMEN MICROCAP Herbicide can be used in Alabama, Florida or Georgia.

**DO NOT** use in California.

## PERENNIAL GRASSES GROWN FOR SEED PRODUCTION

**Application Methods:** Apply by ground, air or chemigation.

## Use Methods, Timings and Use Rates

Apply prior to target weed germination. Uniformly apply at a broadcast rate of 2.1 to 4.2 quarts per acre in a single application. As an option, apply ACUMEN MICROCAP Herbicide in two split applications, with 1/2 the seasonal application rate applied in the fall or winter followed by the other 1/2 the seasonal application rate applied in the spring. **DO NOT** exceed a cumulative total of 4.2 quarts per acre in any one crop season.

In both warm-season and cool-season perennial grasses, use the higher application rate where more dense infestations of targeted annual grasses, annual broadleaf, or volunteer grass seedlings are anticipated, or when a longer duration of residual weed control is desired. Excess grass straw and crop residue from the previous harvest must be evenly spread or removed by such methods as crew cutting, propane flaming, or open field burning (when local regulations allow) prior to ACUMEN MICROCAP Herbicide application, or reduced weed control may result.

Apply ACUMEN MICROCAP Herbicide in a sequential use program or as a tank mix with other registered herbicides that control emerged weeds.

ACUMEN MICROCAP Herbicide may cause temporary injury to perennial grass stands. Applications made in periods of cold temperatures that temporarily limit normal crop growth or in extended cold temperature periods that initiate winter dormancy in grass crops may result in crop injury. Diseases, extremely cold weather, drought, extensive frost heaving, low or high pH, or salinity may weaken stands and make them more susceptible to herbicidal damage.

**Additional Weeds Controlled.** ACUMEN MICROCAP Herbicide applied prior to weed germination will control annual bluegrass, volunteer fescue, and volunteer ryegrass in addition to the weeds listed in **Table 2. Weeds Controlled**.

Apply ACUMEN MICROCAP Herbicide in the following perennial grasses grown for seed production:

### • Warm-season perennial grasses

Apply to established (defined as planted in the fall or spring which has gone through a first cutting/mowing) warm-season perennial grasses, such as Bermudagrass, switchgrass, and others. Apply to postharvest grass during the fall or during winter dormancy or after the first seed harvest/cutting. **DO NOT** apply to warm-season perennial grasses after greenup in the spring prior to the first seed harvest/cutting.

### • Cool-season perennial grasses

Apply to established (6 or more tillers per plant) cool-season perennial grasses, such as Kentucky bluegrass, tall fescue, orchardgrass, perennial ryegrass, fine fescue, and others. Apply to postharvest grass during regrowth at the beginning of significant fall rains or in spring prior to germination of targeted weeds.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems following all directions, special instructions, and precautions about chemigation in **Spraying Instructions** section of this label.

## Tank Mixes

ACUMEN MICROCAP Herbicide may be tank mixed with Outlook® Herbicide or with other herbicides labeled for use in perennial grasses grown for seed. It is recommended to test tank mixes on a small portion of the target crop to determine if damage is likely to occur.

**Physical incompatibility, reduced weed control, or crop injury may result from mixing ACUMEN MICROCAP Herbicide with other pesticides, additives, or fertilizers.**

Applications of postemergence herbicides may cause crop injury. Always perform a mixing test to check the compatibility of ACUMEN MICROCAP Herbicide with all potential tank mix partners. Follow all precautions and restrictions on the labels of all products applied in combination with ACUMEN MICROCAP Herbicide. Always follow the most restrictive label.

## Restrictions

- **DO NOT** apply if surface water is present in the field.
- **DO NOT** exceed a cumulative total of 4.2 quarts per acre in any one crop season.
- There is no preharvest interval for grass forage or hay, or for livestock grazing after application.
- The preharvest interval for seed of warm-season and cool-season grasses is 90 days.
- From treated fields of both warm-season and cool-season perennial grasses, **DO NOT** harvest seed within 90 days after application.
- Not for use in California unless accompanied by supplemental labeling.

## Precautions

- Some stunting and chlorosis of the perennial grasses may occur with post-emergence applications.
- Applications made after the perennial grasses exceed 6 inches in height may result in poor weed control due to possible reduced spray coverage to the soil.
- The grass straw remaining after seed harvest of both warm-season and cool-season perennial grasses may be used as livestock bedding, and/or grazed by or fed to livestock. The grower must notify the seed processor that there is no pesticide tolerance on grass seed screenings; therefore, it cannot be used in livestock feed.

## POTATOES

**Application Methods:** Apply by ground, air, or chemigation.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide preemergence, preemergence incorporated, or early postemergence in potatoes.

**Additional Weeds Controlled.** In addition to the weeds listed in **Table 2**, ACUMEN MICROCAP Herbicide will control stinging nettle in potatoes.

**Preemergence.** Apply after planting, but before potatoes and weeds emerge, or after dragoff.

**Preemergence Incorporated.** Apply and incorporate after planting but before potatoes and weeds emerge. Where dragoff is practiced, apply and incorporate before, at, or after dragoff, but before potatoes and weeds emerge. Care must be taken so that incorporation equipment does not damage seed pieces or elongating sprouts.

**Early Postemergence.** Apply from crop emergence to the 6-inch stage of growth. **DO NOT** apply postemergence if potatoes are under stress from cold/wet or hot/dry conditions or crop injury may occur.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems. Apply preemergence after planting, after dragoff, or early postemergence through sprinkler irrigation systems. Follow all directions, special instructions and precautions about chemigation in the **Spraying Instructions** section of this label.

## Use Rates

Soil Texture	<3% Organic Matter >3%	
Coarse	1.5 pts/A	1.5 pts/A
Medium	2.0 pts/A	3.0 pts/A
Fine	3.0 pts/A	3.0 pts/A

## Restrictions

- **DO NOT** apply to sweet potatoes or yams.
- **DO NOT** apply preplant.
- **DO NOT** make more than one application per season.

## Precautions

- Application on White Rose variety potatoes during or followed by cool and/or wet weather conditions may result in crop injury.

## RICE

**Application Methods:** Apply by ground or air.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide as a delayed preemergence application in drilled dry-seeded rice or as an early postemergence application in dry-seeded rice. Treatments include conventional, reduced or minimum tillage, and no-till (stale seedbed) rice. Prepare the seedbed to be firm and free of clods and to allow for good seed coverage. The use of a planter under conditions that **DO NOT** allow good soil coverage of the rice seed can result in reduced stand or stunting if ACUMEN MICROCAP Herbicide contacts germinating rice seed. Use ACUMEN MICROCAP Herbicide applied postemergence in California water-seeded rice as a component of a comprehensive weed management program.

**Additional Weeds Controlled.** In addition to the weeds listed in **Table 2**, ACUMEN MICROCAP Herbicide will control the following weeds in rice: junglerice and sprangletop.

**Delayed Preemergence.** Apply alone or with tank mix partner for delayed pre-emergence weed control in grain-drilled, dry-seeded rice. Apply alone or in tank mixture to levees after the levees are pulled and planted. Exposed seeds that come in contact with ACUMEN MICROCAP Herbicide may be injured. Apply only when growing conditions favor vigorous rice growth. Ensure that the seedbed

has adequate moisture for seed germination. **Not for use in grain-drilled, dry-seeded rice in California.**

Uniformly apply the specified rate of ACUMEN MICROCAP Herbicide after rice planting and before rice emergence (spiking) and weed germination. Apply after the rice seed has absorbed water and germinated and after the soil has been previously sealed over the seed by at least 1 inch of rainfall or by irrigation (flush). If the soil has not been sealed by rain or flush, apply when 80 percent of germinated seeds have a primary root (radicle) or shoot at least 1/2-inch long. If there is insufficient moisture, flush before ACUMEN MICROCAP Herbicide application to supply moisture for root (radicle) initiation and for vigorous rice and weed growth.

If applied to soil prior to these conditions, or to cracked soil, stand reduction or stunting of rice may occur. Under some conditions, use of gibberellic acid-treated seed, heavy rainfall after application, or flushing after application may result in herbicide injury to rice. Rice can overcome moderate injury with appropriate cultural practices.

Because of the residual activity of ACUMEN MICROCAP Herbicide, this treatment may be applied if rice is too small to maintain a flood on the field for weed control. However, proper water management practices must be followed for normal rice growth and activity of ACUMEN MICROCAP Herbicide.

**Early Postemergence.** Apply as a tank mix partner. Base applications on weed and crop size guidelines of the tank mix partner. **DO NOT** apply to fields with standing water. If necessary, fields may be flushed prior to treatment to produce vigorous rice and weed growth. Because soil and weeds must be completely exposed to spray coverage, flood water must not be on the field at the time of application. Cloddy soil, standing water (puddles) at the time of application, or cracks in the soil that form after application may result in reduced weed control. Because of residual activity of ACUMEN MICROCAP Herbicide, this treatment may be applied if rice is too small to maintain a flood on the field for weed control. However, proper water management practices must be followed for normal rice growth and activity of ACUMEN MICROCAP Herbicide.

**Postemergence (California water-seeded rice only).** Apply alone or tank mixed with a postemergence herbicide after water-seeded rice has reached the 4-leaf to 6-leaf stage (spike plus 3 to 5 true leaves). Applications made prior to the 4-leaf rice stage may result in crop injury.

Water-seeded rice must also be well-rooted/pegged (i.e. standing erect after the flood is removed) prior to application. **DO NOT** apply to rice that is leaning over and/or laying flat to the ground following flood removal since this is characteristic of a poorly established root system. Rice roots must be below the ACUMEN MICROCAP Herbicide-treated soil zone. Injury, stunting, and/or stand reduction can occur if ACUMEN MICROCAP Herbicide contacts the rice roots.

Fields must be completely drained and free of standing water (moist/saturated soil) prior to application. If the soil is saturated at the time of application, allow the soil surface to dry prior to restoring the permanent flood. ACUMEN MICROCAP Herbicide requires alternate wetting/drying cycles to be activated. Weed control will be reduced if the soil surface is not allowed to dry out prior to restoration of the permanent flood. Resume normal water management practices following permanent flood restoration.

ACUMEN MICROCAP Herbicide does not control weeds postemergence; therefore, ACUMEN MICROCAP Herbicide must be tank mixed with a postemergence herbicide to control emerged weeds at the time of application.

ACUMEN MICROCAP Herbicide will aid in the control or suppression of the following weeds when used as part of a comprehensive weed management program:

Barnyardgrass, early and late watergrass (including bio-types resistant to other herbicide modes of action, e.g. rice mimic), sprangletop, smallflower umbrella sedge\*, redstem\*

\* Suppression only

In California water-seeded rice, make applications of ACUMEN MICROCAP Herbicide with either aerial or ground application equipment. For aerial application, apply the specified rate in 5 gallons to 10 gallons of water per acre. If applied as a tank mixture with another herbicide, make sure proper gallonage per acre per label directions (i.e. 10 to 15 with propanil) is used to ensure adequate coverage. To minimize drift, **DO NOT** apply during periods of wind greater than 10 mph, or when wind conditions favor drifting, or if there is a temperature inversion. It is recommended that a flagman or an automatic mechanical flagging unit on the aircraft be used to avoid overlapping and possible crop injury.

For ground equipment, apply the specified rate in 10 gallons to 20 gallons of water per acre. If ACUMEN MICROCAP Herbicide is applied as a tank mixture with another herbicide, make sure proper gallonage per acre per label directions (i.e. 20 to 30 for propanil) is used to ensure adequate coverage. Use a properly calibrated low-pressure (20 psi to 40 psi) sprayer equipped with appropriate nozzles to achieve uniform spray distribution and minimize drift. Keep the bypass line on or near the bottom of the tank to minimize foaming. Nozzle screens must be no finer than 50 mesh. **DO NOT** apply ACUMEN MICROCAP Herbicide during periods of gusty winds or when wind velocity is greater than 20 mph.

**Postemergence Tank Mixtures:** To control emerged weeds at application, apply ACUMEN MICROCAP Herbicide as a tank mix with one of the following post-emergence herbicides:

Clincher® Herbicide  
Grandstand® Herbicide  
Granite® SC Herbicide  
STAM® Herbicide  
SUPERWHAM! Herbicide  
Regiment® Herbicide  
Strada® WG Herbicide  
Whip® 360 Herbicide

When using tank mixtures with ACUMEN MICROCAP Herbicide, always read the companion product label(s) and follow all precautions and restrictions. Always follow the most restrictive label.

Observe all restrictions regarding propanil-restricted zones.

### Restrictions (for water-seeded rice)

- **DO NOT** apply prior to the 4-leaf rice stage (spike plus 3 true leaves) or to rice that is not well-rooted/pegged. The rice must be standing erect after the flood is removed and prior to application.
- **DO NOT** apply to fields with standing water.
- **DO NOT** apply through any type of irrigation system.
- **DO NOT** apply in liquid fertilizer.
- **DO NOT** spray target crop within 60 feet of sensitive crops (crops not listed on the ACUMEN MICROCAP Herbicide label).
- **DO NOT** spray target crop within 60 feet of crops labeled for ACUMEN MICROCAP Herbicide applications where the method of application, rate, or timing of spray application is prohibited.
- **DO NOT** exceed the maximum rate for any soil type in one season.
- **DO NOT** use water containing ACUMEN MICROCAP Herbicide residues from rice cultivation to irrigate food or feed crops that are not registered for use with ACUMEN MICROCAP Herbicide.

In case of a crop failure due to weather conditions or disease following treatment with ACUMEN MICROCAP Herbicide alone or in a tank mixture, only drilled dry-seeded rice may be immediately replanted; however, the grower assumes all risks and consequences associated with replanting of rice because there is the potential for stand reduction or stunting. Tenkoz recommends a 10% increase in seeding rate. Replant seed below the herbicide layer because reduced stand

or stunting may occur if ACUMEN MICROCAP Herbicide contacts germinating rice seed. **DO NOT** replant gibberellic acid-treated seed. **DO NOT** reapply ACUMEN MICROCAP Herbicide alone or in a tank mixture.

**DO NOT** apply to stressed rice. Stress factors include cold or hot temperature extremes, excessive moisture or drought, problem soils, poor field drainage, or deep water after application.

## Use Rates

### Delayed Preemergence Applications

Soil Texture	Rate
Sands, loamy sands	<b>DO NOT USE</b>
Sandy loams	1.5 pts/A
Loams, silt loams, silts, sandy clay loams	2.0 pts/A
Silty clay loams, clay loams, sandy clays, silty clays, clays	2.0 pts/A

### Early Postemergence Application

Soil Texture	Rate
Coarse	1.5 pts/A
Medium	2.0 pts/A
Fine	2.0 pts/A

### Postemergence in California Water-seeded Rice

Soil Texture	Rate
Coarse	1.5 pts/A
Medium	2.0 pts/A
Fine	2.0 pts/A

## Restrictions

- **DO NOT** apply through any type of irrigation system.
- **DO NOT** apply in liquid fertilizer.
- **DO NOT** apply to rice fields if fields are used for fish production, especially catfish farming.
- ACUMEN MICROCAP Herbicide may be applied to rice fields used for crayfish production.
- **DO NOT** use water containing ACUMEN MICROCAP Herbicide residues from rice cultivation to irrigate food or feed crops that are not registered for use with ACUMEN MICROCAP Herbicide.
- In case of a crop failure due to weather conditions or disease following treatment with ACUMEN MICROCAP Herbicide alone or in a tank mixture, only drilled dry-seeded rice may be immediately replanted; however, the grower assumes all risks and consequences associated with replanting of rice because there is the potential for stand reduction or stunting. Tenkoz recommends a 10% increase in seeding rate. Replant seed below the herbicide layer because reduced stand or stunting may occur if ACUMEN MICROCAP Herbicide contacts germinating rice seed. **DO NOT** replant with gibberellic acid-treated seed. **DO NOT** reapply ACUMEN MICROCAP Herbicide alone or in a tank mixture.
- **DO NOT** apply and then flush for germination.

- **DO NOT** apply to stressed rice. Stress factors include cold or hot temperature extremes, excessive moisture or drought, problem soils, poor field drainage, or deep water after application.
- **DO NOT** apply early preemergence nor preplant incorporated as severe rice injury is possible.

## SAFFLOWER

**Application Methods:** Apply by ground, air, or on dry bulk fertilizer (only fall and preplant incorporated applications).

### Use Methods and Timings

Plant safflower 1 1/2 inches to 2 inches deep and completely cover with soil. In California, plant safflower deep enough to completely cover with soil.

**Preplant Incorporated.** Apply within 60 days of planting and incorporate.

**Preplant Incorporated, Fall Application in Minnesota, Montana, North Dakota, and South Dakota.** Apply ACUMEN MICROCAP Herbicide and immediately incorporate during tillage operations in the late fall to target winter annual weeds before planting safflower the following spring. Apply when soil temperatures are 45° F or below but before the ground freezes. **DO NOT** apply when the air temperature is below 45° F.

Before planting safflower in the spring, shallow incorporate treated fields at least once, at an angle to the last tillage operation.

**Fall Application in California.** Apply ACUMEN MICROCAP Herbicide and immediately incorporate during tillage operations in the late fall to target winter annual weeds before planting safflower the following spring. Before planting safflower in the spring, shallow incorporate treated fields at least once, at an angle to the last tillage operation.

**Preemergence.** Apply at planting or up to 2 days after planting.

Especially in cases where safflower is growing in stress situations such as compacted soils, preemergence application of ACUMEN MICROCAP Herbicide may increase the chance of crop injury. Preemergence application may also provide decreased herbicide performance compared to preplant incorporated application. If conditions are dry with limited precipitation likely, or unseasonable cool temperatures are forecast for the time after planting, apply before planting and mechanically incorporate with tillage. ACUMEN MICROCAP Herbicide may be applied preemergence in conventional-tillage safflower.

In California, preemergence application must be followed by irrigation or rainfall to establish a crop stand.

**No-till Safflower** (not for this use in California). Apply ACUMEN MICROCAP Herbicide at 3.0 pts/A preplant (up to 30 days before planting) to preemergence (immediately after planting).

### Use Rates

#### Preplant Incorporated or Preemergence

Soil Texture	Southern States <sup>1</sup>	Northern States <sup>1</sup>	
		<3% Organic Matter >3% pts/A	
Coarse	1.5	2.0	2.0
Medium	2.0	2.5	3.0
Fine	3.0	3.0	3.0

<sup>1</sup> See **Use Area** for map of specific states.

#### Preplant Incorporated (Fall Application)<sup>1</sup>

Soil Texture	<3% Organic Matter >3% pts/A	
	Coarse	2.5
Medium	3.0	3.5
Fine	3.5	3.5

<sup>1</sup> For use in Minnesota, Montana, North Dakota, and South Dakota only.

### Restrictions for All Tillage Types

- **DO NOT** feed forage or graze livestock in treated fields.
- **DO NOT** use on no-till safflower in California.
- **DO NOT** apply ACUMEN MICROCAP Herbicide postemergence.
- **DO NOT** exceed the highest rate per acre for any given soil type.

## SOYBEANS

**Application Methods:** Apply by ground or air.

### Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide in conventional, minimum, or no-till as a fall surface, fall incorporated, preplant surface, preplant incorporated, or pre-emergence application in soybeans.

**Additional Weeds Controlled.** In addition to the weeds listed in **Table 2**, ACUMEN MICROCAP Herbicide will control or reduce competition from the following weeds in soybeans: itchgrass and red rice. For specific rates for red rice and itchgrass management, see table at end of this section.

**Fall Applied.** ACUMEN MICROCAP Herbicide may be surface applied or incorporated in the fall, after fall harvest and prior to ground freeze in states north of I-80 and the entire states of Illinois, Indiana, Iowa, Kansas, Kentucky, Missouri, Nebraska, Ohio, Oklahoma, and Texas. Fall applications will not provide season-long weed control.

**Preplant Surface.** Apply up to 15 days prior to planting. ACUMEN MICROCAP Herbicide may be applied up to 45 days prior to planting when used in a tank mix or applied sequentially with Canopy Herbicide and TRICOR® Herbicide. Apply ACUMEN MICROCAP Herbicide tank mixes and sequential programs as specified under the tank mix section.

**Preplant Incorporated.** Apply up to 60 days prior to planting and incorporate.

**Preemergence.** Apply at planting or up to 2 days after planting. Apply to a firm seedbed free of clods. **DO NOT** make applications preemergence north of Interstate 80, except in the states of Indiana, Michigan and Ohio, or as specified in Tenko supplemental labeling.

### Use Rates

#### Fall Surface, Fall Incorporated, Preplant Surface, or Preplant Incorporated

Soil Texture	<3% Organic Matter >3%	
	1.5 pts/A	2.0 pts/A
Coarse	1.5 pts/A	2.0 pts/A
Medium	2.5* pts/A	3.0 pts/A
Fine**	3.0 pts/A	3.0 pts/A

\* **DO NOT** exceed 2.1 pts for Southern states; see **Use Area** for map of specific states.

\*\* For heavy clay soils, apply ACUMEN MICROCAP Herbicide at the broadcast rate of 3.2 pints per acre.



## Preemergence Applications

Soil Texture	<3% Organic Matter >3%	
Coarse	1.5 pts/A	1.5 pts/A
Medium	2.0 pts/A	2.0 pts/A
Fine	2.0 pts/A	2.5 pts/A

## Preplant Incorporated Applications for Red Rice Control and Itchgrass Suppression

Soil Texture	Up to 3% Organic Matter <sup>1</sup>
Coarse	3.0 pts/A
Medium	3.0 pts/A
Fine	4.0 pts/A

<sup>1</sup> **DO NOT** use on soils with more than 3% organic matter.

## Restrictions

- **DO NOT** use in soybeans in California.
- Livestock can graze or be fed forage from treated soybean fields.
- **DO NOT** apply within 85 days before harvest.
- **DO NOT** exceed one application per crop season at the highest rate per acre for any given soil type and application method.

## STRAWBERRIES AND OTHER LOW-GROWING BERRIES

Bearberry, Bilberry, Cloudberry, Cranberry,  
Lingonberry, Muntries, Partridgeberry, Strawberry

**Application Methods:** Apply by ground, air, or chemigation.

## Use Methods, Timings and Use Rates

**Stunting, reduced growth, or reduction in daughter plants may occur with this use.**

Uniformly apply 1.5 to 3.0 pints per acre as a broadcast spray to the soil surface at pre-transplant time or post-transplant time (must be within 7 days of transplanting of rootstock in the Pacific Northwest). However, in geographies where irrigation is used daily (frequently) after transplanting, make the application just before the end of the watering regime to maximize the weed control benefits of ACUMEN MICROCAP Herbicide. Extended periods of irrigation may reduce the residual control provided by ACUMEN MICROCAP Herbicide.

Applications to row middles between the beds are allowed. **DO NOT** apply post-transplant if new foliage from rootstock is exposed to spray area. Make a second application of 1.5 to 3.0 pints per acre of ACUMEN MICROCAP Herbicide in a band to the soil between crop rows (or between the plastic beds) 35 days before harvest, but **DO NOT CONCENTRATE THE RATE** per acre into the treated area, and **DO NOT** allow spray to contact strawberry plants. The second application rate is based on per unit of treated area.

Apply ACUMEN MICROCAP Herbicide to strawberries or other low-growing berries in fall or winter dormancy. Uniformly apply 1.5 to 3.0 pints per acre as a broadcast spray to the soil surface prior to onset of new seasonal growth from strawberry crowns. **DO NOT** apply if new seasonal growth (leaves) has emerged or is exposed.

Apply ACUMEN MICROCAP Herbicide to perennial strawberries or other low-growing berries after renovation. Uniformly apply 1.5 to 3.0 pints per acre as a broadcast spray to the soil surface after renovation (mowing or other defoliation operation) when no foliage is exposed but prior to onset of new seasonal growth from crowns. **DO NOT** apply if new seasonal growth (leaves) has emerged or leaves are exposed.

## Chemigation Applications

Apply ACUMEN MICROCAP Herbicide through sprinkler irrigation systems. Follow all directions, special instructions and precautions about chemigation in the Spraying Instructions section of this label. **DO NOT** allow ACUMEN MICROCAP Herbicide-treated irrigation water to contact strawberry or other low-growing berry plants.

## Use Rates

Soil Texture	Broadcast Rate
Coarse	1.5 pts/A
Medium	2.0 to 2.5 pts/A
Fine	2.5 to 3.0 pts/A

## Restrictions

- **DO NOT** apply more than 3.0 pints per acre per application.
- **DO NOT** apply more than 6.0 pints per acre per season.
- **DO NOT** apply within 35 days before harvest.
- **DO NOT** feed forage or graze livestock in treated fields.
- **DO NOT** plant lettuce within 6 months after application if the strawberry beds were covered with plastic.

## Additional Use in Oregon and Washington in First Year Non-bearing Strawberries

Uniformly broadcast apply ACUMEN MICROCAP Herbicide preemergence prior to transplanting strawberries. **DO NOT** harvest for food or feed any portion of the strawberry plant within 1 year (365 days) of ACUMEN MICROCAP Herbicide application. **DO NOT** apply ACUMEN MICROCAP Herbicide through any type of irrigation system or by air.

## Broadcast Use Rate in First Year Non-bearing Strawberries

Soil Texture	<3% Organic Matter >3%	
Coarse	1.5 to 2.0 pts/A	2.0 to 3.0 pts/A
Medium	2.0 to 2.5 pts/A	2.0 to 3.0 pts/A
Fine	2.0 to 3.0 pts/A	2.5 to 3.5 pts/A

## SUGARCANE

**Application Methods:** Apply by ground or air.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide preemergence through layby to plant or ratoon sugarcane. Although there may be adequate crop tolerance for post-emergence applications at layby, the spray must be directed under the sugarcane canopy to obtain effective weed control.

## Use Rates

Use Area	Broadcast Rate
All states, except Hawaii	4.2 to 6.2 pts/A
Muck soils (Florida only)	4.2 to 8.4 pts/A
Hawaii	4.2 to 8.4 pts/A

<sup>1</sup> Use the high rate if: heavy clay soils; no mechanical incorporation is planned; heavy weed populations are anticipated; itchgrass infestation is anticipated; no shaving is planned.

**Additional Use as Fallow Ground Application only in Louisiana.** Apply prior to weed germination for control of annual grasses such as itchgrass (Raouigrass), seedling Johnsongrass and Panicum spp. in preplant fallow ground sugarcane. If necessary, control weeds that have emerged prior to application of ACUMEN MICROCAP Herbicide with postemergence herbicides and/or mechanical cultivation. After cultivation and forming the beds in the spring, apply at 2.6 quarts per acre using ground equipment. Ensure that the sugarcane beds are free of trash or clogs at the time of application. If sufficient rainfall (1/2 to 3/4 inch) has not occurred within 7 days of application, perform a shallow incorporation (1 to 2 inches) with an additional pass of a Lilliston-type Lely Roterra™ cultivator set to cut 2 or 3 inches deep. A minimum interval of 60 days between ACUMEN MICROCAP Herbicide application and planting of sugarcane is required or crop injury may occur. After planting, apply to sugarcane preemergence through layby, but **DO NOT** exceed 12.5 pints per acre of ACUMEN MICROCAP Herbicide during one growing season.

**Non-cropped Water Drainage Areas Application only in Louisiana.** Apply ACUMEN MICROCAP Herbicide prior to weed germination to non-irrigated, non-cropped water drainage areas (ditchbanks) adjacent to sugarcane fields. If necessary, control weeds that have emerged prior to application of ACUMEN MICROCAP Herbicide with postemergence herbicides and/or mechanical cultivation. Apply at 2.6 to 3.5 quarts per acre using ground equipment. **DO NOT** apply below the high water mark or when water is present in the drainage area (ditchbank). **DO NOT** exceed 12.5 pints per acre of ACUMEN MICROCAP Herbicide during one growing season.

## Restrictions

- **DO NOT** exceed 12.5 pints per acre in one growing season.
- **DO NOT** use less than 11 gallons of water as a carrier when applying for weed control.
- **DO NOT** make aerial applications at close-in because complete and uniform coverage cannot be obtained.
- **DO NOT** apply through any type of irrigation system.
- **DO NOT** apply within 90 days before harvest.
- **DO NOT** graze treated fields or feed treated forage or fodder to livestock.

## Precautions

- Ratoon sugarcane must be lightly shaved in early spring to remove the old stubble before incorporation over the line of sugarcane is possible. Carefully adjust equipment to incorporate without causing excessive damage to emerging shoots.

## SUNFLOWERS AND OTHER OILSEED CROPS

Calendula, Castor oil plant, Chinese tallowtree, Euphorbia, Evening primrose, Jojoba, Niger seed, Rose hip, Stokes aster, Sunflower, Tallowwood, Tea oil plant, Vernonia

**Application Methods:** Apply by ground or air.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide preplant incorporated in all states. Fall preplant incorporated applications may be made in Minnesota, North Dakota, and South Dakota only. Apply ACUMEN MICROCAP Herbicide preemergence in conventional tillage sunflowers or other oilseeds, **except in the state of California.**

**Plant sunflowers or other oilseeds 1-1/2 inches to 2 inches deep and completely cover with soil.**

**Preplant Incorporated (Spring).** Apply up to 60 days prior to planting and incorporate.

**Preplant Incorporated (Fall Applications in North Dakota, South Dakota and Minnesota).** Apply and immediately incorporate in late fall prior to planting the following spring. Apply in the late fall when soil temperatures are 45° F or below but before the ground freezes. **DO NOT** apply when the air temperature is below 45° F. Prior to planting in the spring, make one shallow additional incorporation to fields treated with ACUMEN MICROCAP Herbicide. Make the spring incorporation at an angle to the last tillage operation.

**Preemergence.** Apply at planting or up to 2 days after planting. Preemergence applications to sunflowers or other Group 20B oilseeds may increase the likelihood of crop injury, especially when plants are grown in stress situations, such as compacted soils. Decreased herbicide performance compared to preplant incorporated applications may also result from a preemergence application. If dry conditions with limited precipitation exist or unseasonably cool temperatures following planting are forecast, apply ACUMEN MICROCAP Herbicide prior to planting and mechanically incorporate with tillage.

**No-till Sunflowers or other oilseeds.** Apply at 3.0 pints per acre up to 30 days before planting (preplant) immediately after planting (preemergence). **DO NOT** use no-till in California.

## Use Rates

**Preplant Incorporated (Spring) or Preemergence (Conventional Tillage)**

Soil Texture	Southern States <sup>1</sup>	Northern States	
		<3% Organic Matter	>3%
Coarse	1.5 pts/A	2.0 pts/A	2.0 pts/A
Medium	2.0 pts/A	2.5 pts/A	3.0 pts/A
Fine	3.0 pts/A	3.0 pts/A	3.0 pts/A

<sup>1</sup> See Use Area for map of specific states.

**Preplant Incorporated (Fall) Application<sup>1</sup>**

Soil Texture	<3% Organic Matter >3%	
Coarse	2.5 pts/A	2.5 pts/A
Medium	3.0 pts/A	3.5 pts/A
Fine	3.0 pts/A	3.5 pts/A

<sup>1</sup> For use in Minnesota, North Dakota and South Dakota only.

## Restrictions (All Tillage Types)

- **DO NOT** apply postemergence.
- **DO NOT** feed forage or graze livestock in treated sunflower or other Group 20B oilseed fields.

## California Restrictions

- **DO NOT** apply preemergence in conventional tillage sunflower or other oilseed crops.
- **DO NOT** apply in no-till sunflowers or other oilseed crops.

## TOBACCO

**Application Methods:** Apply with ground equipment only preplant incorporated, or as a layby application in transplanted tobacco.

## Use Methods, Timings and Use Rates

**Preplant Incorporated.** Apply with ground sprayer and incorporate up to 60 days prior to transplanting tobacco.

Applied according to directions and under normal growing conditions, ACUMEN MICROCAP Herbicide will not harm transplanted tobacco. Under stress conditions for plant growth, such as cold/wet or hot/dry weather, ACUMEN MICROCAP Herbicide can produce a temporary retardation of tobacco development.

**Layby.** Apply as a directed spray following the last normal cultivation (layby), usually 4 to 6 weeks after transplanting tobacco. Apply in a 16-inch to 24-inch band between the crop rows. Contact of the spray solution with tobacco plants may cause damage to the plant.

## Use Rates

### Preplant Incorporated Application

Use Area	Soil Texture	Rate
Florida Georgia Maryland North Carolina South Carolina Virginia	Coarse	2.0 pts/A
	Medium	
	sandy clay loams, loams	2.0 pts/A
	silt loams, silts	2.5 pts/A
	Fine	2.5 pts/A
Other states	Coarse	2.0 pts/A
	Medium	3.0 pts/A
	Fine	3.0 pts/A

### Layby Application

Soil Texture	Broadcast Rate
Coarse	1.5 pts/A
Medium	2.0 pts/A
Fine	2.0 pts/A

## Restrictions

- **DO NOT** apply as a broadcast spray or contact may cause malformed tobacco leaves.

## VEGETABLE SOYBEAN (EDAMAME)

**Application Methods.** Apply only by ground.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide to edamame grown under conventional, minimum; or no-till systems.

**Preplant Surface.** Apply within 15 days of planting. ACUMEN MICROCAP Herbicide may be applied within 45 days of planting when used in a tank mix or applied sequentially with postemergence-applied herbicides registered for use in edamame.

**Preplant Incorporated.** Apply within 60 days of planting and incorporate.

**Preemergence.** Apply at planting or up to 2 days after planting. Apply to a firm seedbed, free of clods. **DO NOT** make applications of ACUMEN MICROCAP Herbicide preemergence north of Interstate 80, except in states of Indiana, Michigan and Ohio.

## Use Rates

### Preplant Surface or Preplant Incorporated

Soil Texture	<3% Organic Matter >3%	
Coarse	1.5 pts/A	2.0 pts/A
Medium	2.5* pts/A	3.0 pts/A
Fine**	3.0 pts/A	3.0 pts/A

\* **DO NOT** exceed 2.1 pts for Southern states; see **Use Area** for map of specific states.  
\*\* For heavy clay soils, apply ACUMEN MICROCAP Herbicide at the broadcast rate of 3.2 pints per acre.

### Preemergence Applications

Soil Texture	<3% Organic Matter >3%	
Coarse	1.5 pts/A	1.5 pts/A
Medium	2.0 pts/A	2.0 pts/A
Fine	2.0 pts/A	2.5 pts/A

Livestock can graze or be fed forage from treated vegetable soybean (edamame) fields.

## Restrictions

- **DO NOT** apply within 85 days of harvest.
- **DO NOT** exceed one application per crop season at the highest rate per acre for any given soil type and application method.
- **DO NOT** use in California.

## WHEAT AND TRITICALE

**Application Methods:** Apply by ground, air or chemigation.

## Use Methods, Timings and Use Rates

Apply ACUMEN MICROCAP Herbicide preemergence, delayed preemergence, or postemergence for weed control in fall-seeded, winter-seeded, or spring-seeded wheat or triticale.

Apply to a seedbed which is firm and free of clods and trash. The seedbed **MUST** be prepared to ensure good seed coverage by the soil and seed to soil contact. Use high quality seed. When applications are intended to be made preemergence or delayed preemergence, plant seed at least 1 inch deep to avoid possible crop injury. Do not plant too deep for proper germination. When application is intended to be made postemergence, plant seed at least 1/2-inch to 1-inch deep to avoid crop injury.

Uniformly apply preemergence, delayed preemergence (after seed germination), or as a postemergence treatment from the 1st-leaf stage of wheat or triticale until before the flag leaf is visible/emerged for weed control. Apply prior to weed germination. Emerged weeds will not be controlled by this treatment.

For control of established weeds, ACUMEN MICROCAP Herbicide may be tank mixed with any postemergence herbicide registered for use in wheat or triticale. ACUMEN MICROCAP Herbicide will provide residual control of the weeds listed in this label. Always perform a mixing test to check the compatibility of ACUMEN MICROCAP Herbicide with all potential tank mix partners.

## Use Rates

Soil Texture	Southern States <sup>1</sup>	Northern States <sup>1</sup>
Coarse	1.5 to 2.0 pts/A	1.5 pts/A
Medium	1.5 to 3.0 pts/A	1.5 to 2.5 pts/A
Fine	2.0 to 3.0 pts/A	2.0 to 3.0 pts/A

<sup>1</sup> See **Use Area** for map of specific states.

In wheat stubble, ACUMEN MICROCAP Herbicide may be applied in the fall, spring or early summer during the fallow period following wheat harvest as a planned residual treatment to control labeled broadleaf and grass weeds. ACUMEN MICROCAP Herbicide must be applied with an adequate tank mix partner (i.e. glyphosate) to provide control of emerged weeds. There must be at least a 4-month interval between a ACUMEN MICROCAP Herbicide fallow application and the rotational planting of any fall-seeded cereal crop. Apply up to, but **DO NOT** exceed, 3 pints/acre of ACUMEN MICROCAP Herbicide in any fallow application. **DO NOT** make more than one application of ACUMEN MICROCAP Herbicide during a single fallow period prior to rotational planting of any fall-seeded cereal crops. Rotational crop restrictions must be adhered to when planting a rotational crop following a fallow application of ACUMEN MICROCAP Herbicide.

## Restrictions

- **DO NOT** apply more than 3.0 pints per acre per season.
- **DO NOT** apply within 60 days before harvest of wheat or triticale grain or straw.
- **DO NOT** apply within 28 days before harvest of wheat or triticale hay.
- **DO NOT** apply within 11 days before harvest of wheat or triticale forage.

**NOTE:** If loss of grain crop occurs, any crop registered for ACUMEN MICROCAP Herbicide preplant incorporated use may be replanted the same year without adverse effects. **DO NOT** replant wheat or triticale.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** DO NOT STORE BELOW 15° F. Extended storage at temperatures below 15° F can result in the formation of crystals on the bottom of container. If crystallization does occur, store the container on its side at room temperature (70° F) and rock occasionally until crystals dissolve.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container.** Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**Triple rinse containers too large to shake (capacity ≥ 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Refillable Container.** Refill this container with pesticide only. Do not reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

**Triple rinse as follows:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Do not reuse the container for any other purpose. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. Do not transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

**IMPORTANT INFORMATION  
READ BEFORE USING PRODUCT**

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**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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