Department of Agriculture
STATE OF HAWAII
LICENSED
PERIOD 2009-2011 LIC. NO.

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Ciramet™

Herbicide

8690.2

Dry Flowable

For use on Wheat, Barley, Triticale and Fallow

Active Ingredient	***By Weight***
Metsulfuron Methyl Methyl 2-[[[[(4-methoxy-6-methyl-1,3,5-triazin-2yl)amino]carbonyl]amino]sulfonyl]benzoate	60%
Other Ingredients	40%
TOTAL	100%

EPA Reg. No. 352-435-85588 EPA Est. No. _____

Nonrefillable Container
Net: _____
OR
Refillable Container
Net: _____

KEEP OUT OF REACH OF CHILDREN

CAUTION

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

FIRST AID

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-888-261-1410 for emergency medical treatment information.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION! Causes eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing dust or spray mist.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

WPS USES: Applicators and other handlers who handle this pesticide for any use covered by the Worker Protection Standard [(40 CFR Part 170)] must wear:

Long-sleeved shirt and long pants.

Shoes plus socks.

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

USER SAFETY RECOMMENDATIONS

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

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

IMPORTANT INFORMATION

PESTICIDE HANDLING

- Calibrate sprayers only with clean water away from the well site.
- Make scheduled checks of spray equipment.
- Assure accurate measurement of pesticides by all operation employees.
- Mix only enough product for the job at hand.
- Avoid overfilling of spray tank.
- Do not discharge excess material on the soil at a single spot in the field or mixing/loading station.
- Dilute and agitate excess solution and apply at labeled rates/uses.
- Avoid storage of pesticides near well sites.
- When triple rinsing the pesticide container, be sure to add the rinsate to the spray mix.

DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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 4 hours.

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

Coveralls.
Shoes plus socks.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep unprotected persons out of treated areas until sprays have dried.

Ciramet™ herbicide must be used only in accordance with directions on this label or in separate published Agsurf directions.

Agsurf will not be responsible for losses or damages resulting from the use of this product in any manner not specifically directed by Agsurf.

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

PRODUCT INFORMATION

Ciramet™ herbicide is recommended for use on land primarily dedicated to the production of wheat, barley, triticale and fallow.

Ciramet™ herbicide is recommended for use on wheat, barley, triticale and fallow in most states. Check with your state extension or Department of Agriculture before use, to be certain Ciramet™ herbicide is registered in your state. Ciramet™ herbicide is not registered for use in Alamosa, Conejos, Costilla, RioGrande, and Saquache counties of Colorado.

Ciramet™ herbicide is a dry-flowable granule that controls weeds in wheat (including durum), barley, triticale and fallow. Ciramet™ herbicide is mixed in water or can be preslurried in water and added to liquid nitrogen carrier solutions and applied as a uniform broadcast spray. A surfactant should be used in the spray mix unless otherwise specified on this label. Ciramet™ herbicide is noncorrosive, nonflammable, nonvolatile, and does not freeze.

Ciramet™ herbicide controls weeds by postemergence activity. For best results, apply Ciramet™ herbicide to young, actively growing weeds. The use rate depends upon the weed spectrum and size of weeds at application. The degree and duration of control may depend on the following factors:

- weed spectrum and infestation intensity
- weed size at application
- environmental condition at and following treatment

Environmental Conditions and Biological Activity

Ciramet™ herbicide is absorbed through the foliage of broadleaf weeds, rapidly inhibiting their growth. Leaves of susceptible plants appear chlorotic from 1 to 3 weeks after application and the growing point subsequently dies.

Application of Ciramet™ herbicide provides the best control in vigorously growing crops that shade competitive weeds. Weed control in areas of thin crop stand or seeding skips may not be as satisfactory. However, a crop canopy that is too dense at application can intercept spray and reduce weed control.

Ciramet™ herbicide may injure crops that are stressed from adverse environmental conditions (such as extreme temperatures or moisture), abnormal soil conditions, or cultural practices. In addition, different varieties of the crop may be sensitive to treatment with Ciramet™ herbicide under otherwise normal conditions. Treatment of such varieties may injure crops.

In warm, moist conditions, the expression of herbicide symptoms is accelerated in weeds; in cold, dry conditions, expression of herbicide symptoms is delayed. In addition, weeds hardened-off by drought stress are less susceptible to Ciramet™ herbicide.

Weed control may be reduced if rainfall or snowfall occurs soon after application.

APPLICATION INFORMATION

FALLOW

Use Rates

Apply Ciramet™ herbicide at 1/10 ounce per acre.

Application Timing

Ciramet™ herbicide may be used as a fallow treatment, in the spring or fall when the majority of weeds have emerged and are actively growing.

Tank Mixtures in Fallow

Ciramet™ herbicide may be used as a fallow treatment, and may be tank mixed with other herbicides that are registered for use in fallow. If those recommendations conflict with this label, do not tank mix that product with Ciramet™ herbicide. Read and follow all label instructions on timing, precautions, and warnings for any companion products before using these tank mixtures. Follow the most restrictive labeling.

WHEAT, BARLEY and TRITICALE

Use Rates

Wheat (including durum), Barley and Triticale

Apply 1/10 ounce Ciramet™ herbicide per acre to wheat, barley or triticale once per use season.

Application Timing

Dryland Wheat, Barley and Triticale
(Except Durum or Wampum Variety)

Make applications after the crop is in the 2-leaf stage but before boot once per use season.

Durum and Wampum Variety Spring Wheat

Make applications after the crop is tillering but before boot once per use season.

Applications to durum and wampum varieties should be made in combination with 2,4-D.

Irrigated Wheat and Barley

Make applications after the crop begins tillering but before boot. First post-treatment irrigation should be delayed for at least 3 days after treatment and should not exceed 1 inch. of water.

Do not apply during boot and early heading, as crop injury may result.

WEEDS CONTROLLED

Unless otherwise directed, treat when weeds are less than 4" tall or in diameter and are actively growing.

Effectiveness may be reduced if rainfall occurs within 4 hours after application.

Cereals and Fallow

1/10 ounce per acre

- Blue/purple mustard*
- Bur buttercup (testiculate)
- Coast fiddleneck (tarweed)
- Common chickweed
- Common purslane
- Conical catchfly
- Cowcockle
- False chamomile
- Field pennycress (fanweed)
- Filaree
- Flixweed*
- Groundsel (common)
- Henbit
- Kochia*
- Lambsquarters (common, slimleaf)
- Mayweed chamomile
- Miners lettuce
- Pigweed (redroot, smooth, tumble)
- Plains coreopsis
- Prickly lettuce*
- Russian thistle*
- Shepherd's purse
- Smallseed falseflax
- Smartweed (green, ladysthumb, pale)
- Snow speedwell
- Tansymustard*
- Treacle mustard (Bushy Wallflower)
- Tumble/Jim Hill mustard
- Volunteer sunflower
- Waterpod
- Wild mustard

*Weeds Suppressed ‡**
Cereals and Fallow

1/10 ounce per acre

- Canada thistle*
- Common sunflower*
- Corn gromwell*
- Knotweed (prostrate)*
- Sowthistle (annual)*
- Wild buckwheat*

* See the **Specific Weed Problems** section.

‡ Weed suppression is a reduction in weed competition (reduced population and/or vigor) as visually compared to an untreated area. The degree of suppression varies with the rate used, the size of the weeds, and the environmental conditions following treatment.

Specific Weed Problems

Note: Thorough spray coverage of all weed species listed below is very important.

Blue Mustard, Flixweed, and Tansymustard: For best results, apply Ciramet™ herbicide tank mixtures with 2,4-D or MCPA postemergence to mustards, but before bloom.

Canada Thistle and Sowthistle: Apply either Ciramet™ herbicide plus surfactant or Ciramet™ herbicide plus 2,4-D or MCPA in the spring after the majority of thistles have emerged and are small (rosette stage to 6" elongating stems) and actively growing. The application will inhibit the ability of emerged thistles to compete with the crop.

Corn Gromwell and Prostrate Knotweed: Apply Ciramet™ herbicide plus surfactant when weeds are actively growing, are no larger than 2" tall, and when crop canopy will allow thorough coverage. Tank mixing 2,4-D or MCPA with Ciramet™ herbicide can improve results.

Kochia, Russian thistle, Prickly lettuce: Naturally occurring resistant biotypes of these weeds are known to occur. For best results, use Ciramet™ herbicide in a tank mix with Dicamba and 2,4-D, or bromoxynil and 2,4-D (such as 3/4 - 1 pint "Buctril" + 1/4 - 3/8 pound active 2,4-D ester). Ciramet™ herbicide should be applied in the spring when kochia, Russian thistle, and prickly lettuce are less than 2" tall or 2" across and are actively growing (refer to the Tank Mixtures section of this label for additional details).

Sunflower (common/volunteer): Apply either Ciramet™ herbicide plus surfactant or Ciramet™ herbicide plus 2,4-D or MCPA after the majority of sunflowers have emerged, are 2" to 4" tall and are actively growing. Use spray volumes of at least 3 gallons by air or 5 gallons by ground.

Wild Buckwheat: For best results, apply Ciramet™ herbicide plus 2,4-D or MCPA when plants have no more than 3 true leaves (not counting the cotyledons). If plants are not actively growing, delay treatment until environmental conditions favor active weed growth.

TANK MIXTURES IN CEREALS (WHEAT, BARLEY AND TRITICALE)

Read and follow all manufacturers' label recommendations for any companion herbicides, fungicides, and/or insecticides. If those recommendations conflict with this label, do not tank mix that product with Ciramet™ herbicide. Read and follow all label instructions on timing, precautions, and warnings for any companion products before using these tank mixtures. Follow the most restrictive labeling.

Ciramet™ herbicide may be tank mixed with other suitable registered herbicides to control weeds listed under **Weeds Suppressed**, weeds resistant to Ciramet™ herbicide, or weeds not listed under **Weeds Controlled**.

With 2,4-D (amine or ester) or MCPA (amine or ester)

Ciramet™ herbicide can be used as a tank-mix treatment with 2,4-D or MCPA (ester formulations provide best results) herbicides after weeds have emerged. For best results, use 1/10 ounce of Ciramet™ herbicide per acre; add 2,4-D or MCPA herbicides to the tank at 1/4 to 1/2 pound active ingredient. Surfactant may be added to the mixture at 1/2 to 1 quart per 100 gallons of spray solution; however, adding surfactant may increase the potential for crop injury.

Apply Ciramet™ herbicide plus MCPA after the 3 to 5-leaf stage but before boot (with Durum and Wampum varieties do not apply before tillering). Apply Ciramet™ herbicide plus 2,4-D after tillering (refer to appropriate 2,4-D manufacturer's label), but before boot.

With Dicamba

For best results, apply Ciramet™ herbicide at 1/10 ounce per acre; add 1/16 to 1/8 pound active ingredient dicamba. Surfactant may be added to the mixture at 1/2 to 1 quart per 100 gallons of spray solution; however, adding surfactant may increase the potential for crop injury. Also refer to dicamba labels for application timing and restrictions

With 2,4-D (amine or ester) and Dicamba

Ciramet™ herbicide may be applied in a 3-way tank mix with formulations of dicamba and 2,4-D. Observe all applicable directions, restrictions and precautions on labels of all products used.

Make applications at 1/10 ounce of Ciramet™ herbicide + 1/16 - 1/12 pound active ingredient dicamba + 4 - 6 ounces active 2,4-D Ester or Amine per acre. Use higher rates when weed infestation is heavy. Add 1-2 pints of surfactant to the 3 way mixture, where necessary, as deemed by local recommendations. Use of additional surfactant may not be needed with the higher phenoxy rates and ester phenoxy formulations. Consult the specific 2,4-D or dicamba label, or local recommendations for more information.

Apply this 3-way combination to winter wheat after the crop is tillering and prior to jointing (first node). In Spring Wheat (including Durum wheat) apply after the crop is tillering and before it exceeds the 5-leaf stage.

Do not apply this 3-way mixture at high rates more than once a year or more than twice per year at the low rates.

With bromoxynil (such as "Buctril", "Bronate")

Ciramet™ herbicide may be tank mixed with bromoxynil containing herbicides registered for use on wheat, barley, or fallow. For best results, add bromoxynil containing herbicides to the tank at 3 to 6 ounces active ingredient per acre (such as "Bronate" or "Buctril" at 3/4 - 1 1/2 pints per acre).

With "Starane"

For improved control of Kochia (2-4" tall), Russian thistle, mustard species, and wild buckwheat, Ciramet™ herbicide may be tank mixed with 1/3 to 1 1/3 pints per acre of "Starane."

With "Starane" + "Salvo"

For improved control of Kochia (2-4" tall), Russian thistle, mustard species and wild buckwheat, Ciramet™ herbicide may be tank mixed with 2/3 to 2 2/3 pints per acre of "Starane" + "Salvo."

With "Starane" + "Sword"

For improved control of Kochia (2-4" tall) Russian thistle, mustard species and wild buckwheat, Ciramet™ herbicide may be tank mixed with 3/4 to 2 3/4 pints per acre of "Starane" + "Sword."

With "Maverick"

Ciramet™ herbicide, can be tank mixed with "Maverick" herbicide for improved control of weeds in wheat.

With "Aim"

Ciramet™ herbicide, can be tank mixed with "Aim" herbicide for improved control of weeds in wheat and barley.

With "Stinger" , "Curtail", or "Curtail M" or "Widematch"

Ciramet™ herbicide, can be tank mixed with "Stinger", "Curtail", or "Curtail M" herbicides for improved control of weeds in wheat and barley.

With "Express"

Ciramet™ herbicide may be tank mixed with "Express" based on local recommendations.

With "Harmony" Extra

Ciramet™ herbicide may be tank mixed with "Harmony" Extra based on local recommendations.

With grass control products

Tank mixtures of Ciramet™ herbicide and grass control products may result in poor grass control. Agsurf recommends that you first consult your state experiment station, university, or extension agent, Agricultural dealer, or Agsurf representative as to the potential for antagonism before using the mixture. If no information is available, limit the initial use of Ciramet™ herbicide and the grass product to a small area.

Do not tank mix Ciramet™ herbicide with "Hoelon" 3EC, as grass control may be reduced.

With "Assert" herbicide or "Avenge" herbicide

Ciramet™ herbicide can be tank mixed with "Avenge" or "Assert". When tank mixing Ciramet™ herbicide with "Assert", always include another broadleaf weed herbicide with a different mode of action (for example: 2,4-D ester, MCPA ester, "Buctril," or "Bronate"). Tankmixed applications of "Express" plus "Assert" may cause temporary crop discoloration, stunting, or injury when heavy rainfall occurs shortly after application.

With "Puma"

Ciramet™ herbicide, can be tank mixed with "Puma" herbicide for improved control of weeds in wheat and barley.

With "Discover NG"

Ciramet™ herbicide, can be tank mixed with "Discover NG" herbicide for improved control of weeds in spring wheat.

With "Everest"

Ciramet™ herbicide, can be tank mixed with "Everest" herbicide for improved control of weeds in spring wheat.

With Insecticides and Fungicides

Ciramet™ herbicide may be tank mixed or used sequentially with insecticides and fungicides registered for use on cereal grains.

However, under certain conditions (drought stress, cold weather, or if the crop is in the 2-4 leaf stage), tank mixes or sequential applications of Ciramet™ herbicide with organophosphate insecticides (such as parathion, "Di-Syston") may produce temporary crop yellowing or, in severe cases, crop injury.

The potential for crop injury is greatest when wide fluctuations in day/night temperatures occur just prior to or soon after application.

Test these mixtures in a small area before treating large areas.

Do not apply Ciramet™ herbicide within 60 days of crop emergence where an organophosphate insecticide (such as "Di-Syston") has been applied as an in-furrow treatment, as crop injury may result.

Do not use Ciramet™ herbicide plus Malathion, as crop injury will result.

With Liquid Nitrogen Solution Fertilizer

Liquid nitrogen fertilizer solutions may be used as a carrier in place of water. Run a tank mix compatibility test before mixing Ciramet™ herbicide in fertilizer solution.

Ciramet™ herbicide must first be slurried with water and then added to liquid nitrogen solutions (e.g., 28-0-0, 32-0-0). Ensure that the agitator is running while the Ciramet™ herbicide is added. Use of this mixture may result in temporary crop yellowing and stunting.

If using low rates of liquid nitrogen fertilizer in the spray solution (less than 50% of the spray solution volume), the addition of surfactant is necessary. Add surfactant at 1/2 pt - 1 qt per 100 gal of spray solution (0.06 -0.25% v/v) based on local recommendations.

When using high rates of liquid nitrogen fertilizer in the spray solution, adding surfactant increases the risk of crop injury. Consult your agricultural dealer, consultant, fieldman, or Agsurf representative for a specific recommendation before adding an adjuvant to these tank mixtures.

If 2,4-D or MCPA is included with Ciramet™ herbicide and fertilizer mixture, ester formulations tend to be more compatible (See manufacturer's label). Do not add surfactant when using Ciramet™ herbicide in tank mix with 2,4-D ester or MCPA ester and liquid nitrogen fertilizer solutions.

Note: In certain areas east of the Mississippi river unacceptable crop response may occur with use of straight or dilute nitrogen fertilizer carrier solutions where cold temperatures or widely fluctuating day/night temperatures exist. In these areas consult your agricultural dealer, consultant, field advisor, or Agsurf representative for a specific recommendation before using nitrogen fertilizer carrier solutions.

Liquid nitrogen fertilizer solutions that contain sulfur can increase crop response.

Do not use low rates of liquid fertilizer as a substitute for a surfactant.

Do not use with liquid fertilizer solutions with a pH less than 3.0.

CIRAMET™ HERBICIDE WITH MCPA, 2, 4-D AND/OR DICAMBA FOR SUPPRESSION OF WINTER ANNUAL BROADLEAF WEEDS IN WINTER WHEAT TO BE GRAZED OUT IN THE STATES OF TEXAS, OKLAHOMA, NEW MEXICO and KANSAS

GENERAL INFORMATION

Ciramet™ herbicide can be tank mixed with MCPA, 2,4-D and/or dicamba for suppression of winter annual broadleaf weeds in winter wheat to be grazed out and not harvested for grain, in the States of Texas, Oklahoma, New Mexico and Kansas.

DIRECTIONS FOR USE

For the suppression of winter annual broadleaf weeds (such as henbit and mustards) in winter wheat in the states of Texas, Oklahoma, New Mexico and Kansas, Ciramet™ herbicide at 0.05 (1/20) ounces per acre should be tank mixed with MCPA, 2,4-D and/or dicamba at label rates. Winter annual broadleaf weeds should be less than 1" tall or in the rosette stage for suppression. Add an Agsurf recommended nonionic surfactant having at least 80% active ingredient at 1 to 2 quarts per 100 gallons of spray solution (0.25 to 0.5% v/v).

Rotation Intervals For Crops in Non-Irrigated Land Following Use of Ciramet™ herbicide at 0.05 (1/20) Ounces Per Acre on Wheat That Will be Grazed Out

Crop	Soil pH	Minimum Cumulative Precipitation (inches)	Minimum Rotation Interval (months)
Sorghum, Grain	7.9 or lower	No restrictions	4
Cotton	7.9 or lower	No restrictions	10
Alfalfa	6.8 or lower	No restrictions	10
	6.9 to 7.9	No restrictions	22
Beans, Dry	6.8 or lower	No restrictions	10
	6.9 to 7.9	No restrictions	22

Rotation Intervals for crops not covered above following the use of Ciramet™ herbicide at 0.05 (1/20) ounces per acre on wheat that will be grazed out.

The minimum rotation interval is 22 months with at least 18" of cumulative precipitation during the period:

- to any crop not listed in the Rotation Intervals table above
- if the soil pH is not in the specified range

To rotate to a crop at an interval shorter than recommended, a field bioassay must be successfully completed to rotate to that crop. See section on Field Bioassay for further information.

IMPORTANT RESTRICTIONS

This treatment is for use on winter wheat that will be grazed out and will not be harvested for grain.

IMPORTANT PRECAUTIONS

Ciramet™ herbicide suppresses weeds by postemergence activity. For best results, apply Ciramet™ herbicide to young, actively growing weeds. The degree and duration of suppression at 1/20 ounce per acre may depend upon the following factors:

- weed spectrum and infestation intensity
- weed size at application
- environmental condition at and following treatment.

WHEAT, BARLEY AND TRITICALE - HARVEST AID

Use Rates

Apply 1/10 ounce of Ciramet™ herbicide per acre in combination with 2,4-D or glyphosate containing products to aid in dry down of many broadleaved weeds, thereby aiding grain harvest.

Application Timing

Make applications after the crop has reached the hard dough stage, but no later than 10 days before harvest.

Tank Mixtures in Harvest Aid

A tank mix of Ciramet™ herbicide plus 2,4-D and surfactant, or "Roundup", will typically aid in dry down of many broadleaved weeds, thereby aiding grain harvest. Postemergence application should be made to actively growing weeds after the crop is in the hard dough stage. If weeds are not dry within 10 days after application, delay harvest until weeds are dry.

See weeds listed in Weeds Controlled chart of this label.

With 2,4-D

Use 1/10 ounce Ciramet™ herbicide plus 1/4 to 1/2 pound active ingredient 2,4-D per acre on moderate weed infestations; higher rates of 2,4-D may be used on large weeds if permitted by the 2,4-D brand labeling. Include 1 to 2 quarts surfactant per 100 gallons spray solution.

In addition to the weeds listed in Weeds Controlled chart of this label, the 2,4-D combination will also dry down common cocklebur, marestail, puncturevine and common and wild sunflower. In areas where 2,4-D use is restricted, apply Ciramet™ herbicide with surfactant only; however, this treatment may be less effective.

With "Roundup"

Use 1/10 ounce Ciramet™ herbicide plus the locally recommended rate of "Roundup" (see "Roundup" label for maximum seasonal rate). CIRAMET™ HERBICIDE requires the use of an adjuvant for optimum activity. Consult the "Roundup" label or local recommendations for the amount of adjuvant to include.

GRAIN SORGHUM

GENERAL INFORMATION

Ciramet™ herbicide is recommended for use on irrigated or dryland grain sorghum in Colorado, Kansas, Nebraska, Oklahoma and Texas (North of I-20).

Use Rates: Apply Ciramet™ herbicide at 1/20 ounce per acre plus 1/4 pound active ingredient 2,4-D amine per acre. Do not use surfactant or crop oil.

Crop Stage: For optimum performance and crop safety, apply Ciramet™ herbicide plus 2,4-D amine when grain sorghum is 3 to 15 inches in height. If sorghum is taller than 10 inches to the top of the canopy, use drop nozzles and keep spray off the foliage. Apply only before the boot stage. Read and follow all other use instructions, warnings and precautions on companion herbicide labels.

Sorghum varieties vary in sensitivity to 2,4-D amine. Spray only varieties known to be tolerant to 2,4-D amine. Contact seed company and Local County Extension Service for this information.

Pest Stage: Application of Ciramet™ herbicide plus 2,4-D amine should be made when all or a majority of the weeds have germinated and emerged. For best results, spray when weeds are less than 6 inches tall.

Weeds Controlled With Tank Mix Of Ciramet™ herbicide plus 2,4-D amine:

Pigweed species

Puncture vine

Velvetleaf

APPLICATION INFORMATION

Ciramet™ herbicide may be applied to grain sorghum by properly calibrated ground or aerial equipment.

Ciramet™ herbicide can be used on either dryland or irrigated grain sorghum. If application is made to irrigated sorghum, delay first post-treatment irrigation for at least 3 days after treatment. The first post-treatment irrigation should not exceed 1".

Use cultivation prior to Ciramet™ herbicide + 2,4-D amine treatment to cover exposed brace roots of grain sorghum to minimize injury from 2,4-D amine.

PRECAUTIONARY STATEMENTS

- Temporary crop yellowing and/or stunting may occur soon after application, especially when crop is under stress conditions.
- Do not use on grain sorghum grown for seed production or syrup. Do not use on forage sorghum.
- Do not use for forage or silage within 30 days of application.
- Do not include a surfactant or crop oil to the tank mix.

- Do not apply this treatment under cold, wet weather conditions or to grain sorghum growing under stress caused by weather, insects or disease as crop injury may result.
- Do not apply to long season grain sorghum varieties or grain sorghum that is planted after July 1, as crop injury or delayed maturity may occur.
- Do not exceed one (1) application per year.
- Ciramet™ herbicide must be used with 2,4-D; in areas where 2,4-D use is restricted, follow requirement of the restriction. If 2,4-D use is prohibited, do not use Ciramet™ herbicide on grain sorghum.

SURFACTANTS

SPRAY ADJUVANTS

Applications of Ciramet™ herbicide must include either a nonionic surfactant or a crop oil concentrate. In addition, an ammonium nitrogen fertilizer may be used. Consult local Agsurf fact sheets, technical bulletins, and service policies prior to using other adjuvant systems. If another herbicide is tank mixed with Ciramet™ herbicide select adjuvants authorized for use with both products. Products must contain only EPA-exempt ingredients (40 CFR 1001).

Antifoaming agents may be needed. Consult your Ag dealer, applicator, or Agsurf representative for a listing of recommended surfactants.

Nonionic Surfactant (NIS)

- Apply 0.06 to 0.50% v/v (1/2 to 4 pints per 100 gallons of spray solution) - See Tank Mixtures section for additional information.
- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12.

Exceptions: On all spring wheat and spring or winter barley use 1/2 to 1 quart per 100 gallons.

Petroleum Crop Oil Concentrate (COC) or Modified Seed Oil (MSO)

- Apply at 1% v/v (1 gallon per 100 gallons spray solution) or 2% under arid conditions.
- Oil adjuvants must contain at least 80% high quality, petroleum (mineral) or modified vegetable seed oil with at least 15% surfactant emulsifiers.

Ammonium Nitrogen Fertilizer

- Use 2 quarts/acre of a high-quality urea ammonium nitrate (UAN), such as 28%N or 32%N, or 2 pounds/acre of a spray-grade ammonium sulfate (AMS). Use 4 quarts/acre UAN or 4 pounds/acre AMS under arid conditions.
- Do not use liquid nitrogen fertilizer as the total carrier solution.

Special Adjuvant Types

- Combination adjuvant products may be used at doses that provide the required amount of NIS, COC, MSO and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.
- In addition to the adjuvants specified above, other adjuvant types may be used if they provide the same functionality and have been evaluated and approved by Agsurf product management.

Antifoaming agents may be used if needed.

Do not use low rates of liquid fertilizer as a substitute for surfactant .

GROUND APPLICATION

To obtain optimum spray distribution and thorough coverage, use flat-fan or low-volume flood nozzles.

For flood nozzles on 30" spacings, use at least 10 gallons per acre (GPA), flood nozzles no larger than TK10 (or equivalent), and a pressure of at least 30 pounds per square inch (psi). For 40" nozzle spacings, use at least 13 GPA; for 60" spacings, use at least 20 GPA. It is essential to overlap the nozzles 100% for all spacings.

With “Raindrop RA” nozzles, use at least 30 GPA and ensure that nozzle spray patterns overlap 100%.

For flat-fan nozzles, use at least 3 GPA for applications to wheat or barley.

Use 50-mesh screens or larger.

Aerial Application

Use nozzle types and arrangements that provide optimum spray distribution and maximum coverage.

Wheat, Barley, Triticale and Fallow-use 1 to 5 GPA. Use at least 3 GPA in Idaho, Oregon, or Utah.

When applying Ciramet™ herbicide by air in areas adjacent to sensitive crops, use solid stream nozzles oriented straight back.

Adjust the swath to avoid spray drift damage to sensitive crops downwind and/or use ground equipment to treat the border edge of fields. See the Spray Drift Management section of this label.

Product Measurement

Ciramet™ herbicide is measured using the Ciramet™ herbicide volumetric measuring cylinder. The degree of accuracy of this cylinder varies by +/- 7.5%. For more precise measurement, use scales calibrated in ounces.

WITH LIQUID NITROGEN SOLUTION FERTILIZER

Liquid nitrogen fertilizer solutions may be used as a carrier in place of water. Run a tank mix compatibility test before mixing Ciramet™ herbicide in fertilizer solution.

Ciramet™ herbicide must first be slurried with water and then added to liquid nitrogen solutions (e.g., 28-0-0, 32-0-0). Ensure that the agitator is running while the Ciramet™ herbicide is added. Use of this mixture may result in temporary crop yellowing and stunting.

If using low rates of liquid nitrogen fertilizer in the spray solution (less than 50% of the spray solution volume), the addition of surfactant is necessary. Add surfactant at 1/4 pt per 100 gal of spray solution (0.03% v/v).

When using high rates of liquid nitrogen fertilizer in the spray solution, adding surfactant increases the risk of crop injury. Consult your agricultural dealer, consultant, fieldman, or Agsurf representative for a specific recommendation before adding an adjuvant to these tank mixtures.

If 2,4-D or MCPA is included with Ciramet™ herbicide and fertilizer mixture, ester formulations tend to be more compatible (See manufacturer's label). Do not add surfactant when using Ciramet™ herbicide in tank mix with 2,4-D ester and liquid nitrogen fertilizer solutions.

Note: In certain areas east of the Mississippi river unacceptable crop response may occur with use of straight or dilute nitrogen fertilizer carrier solutions where cold temperatures or widely fluctuating day/night temperatures exist. In these areas consult your agricultural dealer, consultant, field advisor, or Agsurf representative for a specific recommendation before using nitrogen fertilizer carrier solutions.

Liquid nitrogen fertilizer solutions that contain sulfur can increase crop response.

Do not use low rates of liquid fertilizer as a substitute for a surfactant.

Do not use with liquid fertilizer solutions with a pH less than 3.0.

CROP ROTATION

Before using Ciramet™ herbicide, carefully consider your crop rotation plans and options. For rotational flexibility, do not treat all of your wheat, barley, triticale or fallow acres at the same time.

Minimum Rotational Intervals

Minimum rotation intervals* are determined by the rate of breakdown of Ciramet™ herbicide applied. Ciramet™ herbicide breakdown in the soil is affected by soil pH, presence of soil microorganisms, soil temperature, and soil moisture. Low soil pH, high soil temperature, and high soil moisture increase Ciramet™ herbicide breakdown in soil, while high soil pH, low soil temperature, and low soil moisture slow Ciramet™ herbicide breakdown.

Of these 3 factors, only soil pH remains relatively constant. Soil temperature, and to a greater extent, soil moisture, can vary significantly from year to year and from area to area. For this reason, soil temperatures and soil moisture should be monitored regularly when considering crop rotations.

* The minimum rotation interval represents the period of time from the last application to the anticipated date of the next planting.

Soil pH Limitations

Ciramet™ herbicide should not be used on soils having a pH above 7.9, as extended soil residual activity could extend crop rotation intervals beyond normal. Under certain conditions, Ciramet™ herbicide could remain in the soil for 34 months or more, injuring wheat and barley. In addition, other crops planted in high-pH soils can be extremely sensitive to low concentrations of Ciramet™ herbicide.

Checking Soil pH

Before using Ciramet™ herbicide, determine the soil pH of the areas of intended use. To obtain a representative pH value for the test area, take several 0" to 4" samples from different areas of the field and analyze them separately. Consult local extension publications for additional information on recommended soil sampling procedures.

BIOASSAY

A field bioassay must be completed before rotating to any crop not listed (See the Rotation Intervals table), or if the soil pH is not in the specified range, or if the use rate applied is not specified in the table, or if the minimum cumulative precipitation has not occurred since application.

Field Bioassay

To conduct a field bioassay, grow test strips of the crop or crops you plan to grow the following year in fields previously treated with Ciramet™ herbicide. Crop response to the bioassay will indicate whether or not to rotate to the crop(s) grown in the test strips.

If a field bioassay is planned, check with your local Agricultural dealer or Agsurf representative for information detailing the field bioassay procedure.

Rotational Intervals for Cereals

All Areas - Following Use of Ciramet™ herbicide at 1/10 ounce per Acre

Crop	Soil pH	Minimum Cumulative Precipitation (inches)	Minimum Rotation Interval (months)
Winter and spring wheat	7.9 or lower	No restrictions	1
Durum wheat, barley, spring/winter oat	7.9 or lower	No restrictions	10

Rotation Intervals For Crops in Non-Irrigated Land

Following Use of Ciramet™ herbicide at 1/10 ounce per Acre on Wheat, Barley, Triticale or Fallow

Location		Crop	Soil pH	Minimum Cumulative Precipitation (inches)	Minimum Rotation Interval (months)
State	County or Area				
Colorado	Statewide	Grain sorghum, Proso millet	7.9 or lower	No restrictions	10
		Flax, Safflower, Sunflower	7.9 or lower	No restrictions	22
		Field corn	7.9 or lower	15	12
		IR Corn	7.9 or lower	No restrictions	4
		STS Soybeans	7.9 or lower	No restrictions	4
Idaho	Southern Idaho	Flax, Safflower, Sunflower	7.9 or lower	No restrictions	22
	Statewide	Peas Lentils Canola	6.8 or lower	18	10
		Peas	6.9 to 7.9	18	15
		Lentils	6.9 to 7.9	18	34
		Canola	6.9 to 7.9	18	22
		Condiment mustard	7.3 or lower	10	10
		Condiment mustard	7.4 or higher	28	34
		Chickpeas	7.3 or lower	10	10
		Chickpeas	7.4 or higher	28	34
Kansas	Statewide	Grain sorghum, Proso millet	7.9 or lower	No restrictions	10
		Flax, Safflower, Sunflower	7.9 or lower	No restrictions	22
	Central and Western Kansas (West of the Flint Hills)	Field corn	7.9 or lower	15	12
		IR Corn	7.9 or lower	15	4
	Western Kansas W. of Hwy. 183	Soybeans	7.5 or lower 7.6–7.9	22 33	22 34
	Central Kansas; generally E. of Hwy. 183 and W. of the Flinthills	Soybeans	7.9 or lower	15	12
		STS Soybeans	7.9 or lower	15	4
Montana	Statewide	Grain sorghum, Proso millet, Field corn	7.9 or lower	22	22
		Alfalfa (hay only)	7.6–7.9	No restrictions	34
			7.5 or lower	No restrictions	22
		Flax, Safflower, Sunflower	7.9 or lower	No restrictions	22

Continued on next page

Rotation Intervals For Crops in Non-Irrigated Land (continued)

Following Use of Ciramet™ herbicide at 1/10 oz per Acre on Wheat, Barley, Triticale or Fallow

Location		Crop	Soil pH	Minimum Cumulative Precipitation (inches)	Minimum Rotation Interval (months)
State	County or Area				
Nebraska	Statewide	Grain sorghum, Proso millet	7.9 or lower	No restrictions	10
		Flax, Safflower, Sunflower	7.9 or lower	No restrictions	22
		IR Corn STS Soybeans	7.9 or lower	No restrictions	4
	Generally W. of Hwy. 77 and E. of the Panhandle	Field corn	7.9 or lower	15	12
		Soybeans	7.5 or lower	22	22
			7.6-7.9	33	34
New Mexico	Statewide	Grain sorghum, Proso millet	7.9 or lower	No restrictions	10
		Flax, Safflower, Sunflower	7.9 or lower	No restrictions	22
	Eastern New Mexico	Cotton (dryland only)	7.9 or lower	30	22
North Dakota	W. of Hwy. 1	Grain sorghum, Proso millet, Field corn, Dry beans, Flax, Safflower, Soybean, Sunflower	7.9 or lower	22	22
	E. of Hwy. 1	Grain sorghum, Proso millet, Field corn, Dry beans, Flax, Safflower, Soybean, Sunflower	7.9 or lower	34	34
Oklahoma	Statewide	Grain sorghum, Proso millet	7.9 or lower	No restrictions	10
		Flax, Safflower, Sunflower	7.9 or lower	No restrictions	22
		Field corn	7.9 or lower	15	12
		IR Corn STS Soybean	7.9 or lower	No restrictions	4
	Panhandle	Cotton (dryland only)	7.9 or lower	30	22
	E. of the Panhandle	Cotton (dryland only)	7.9 or lower	25	14
Oregon	Statewide	Peas Lentils Canola	6.8 or lower	18	10
		Peas	6.9 to 7.9	18	15
		Lentils	6.9 to 7.9	18	34
		Canola	6.9 to 7.9	18	22
		Condiment mustard	7.3 or lower	10	10
		Condiment mustard	7.4 or higher	28	34
		Chickpeas	7.3 or lower	10	10
		Chickpeas	7.4 or higher	28	34

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Rotation Intervals For Crops in Non-Irrigated Land (continued)

Following Use of Ciramet™ herbicide at 1/10 oz per Acre on Wheat, Barley, Triticale or Fallow

Location		Crop	Soil pH	Minimum Cumulative Precipitation (inches)	Minimum Rotation Interval (months)
State	**County or Area**				
South Dakota	Statewide	Flax, Safflower, Soybean, Sunflower	7.9 or lower	No restrictions	22
	S. of Hwy. 212 & E. of the Missouri River, & S. of Hwy. 34 & W. of Missouri River	Grain sorghum, Proso millet	7.9 or lower	13	12
	Generally E. of Missouri River & S. of Hwy. 14, & W. of Missouri River	Field corn	7.9 or lower	15	12
Texas	Statewide	Grain sorghum, Proso millet	7.9 or lower	No restrictions	10
		Flax, Safflower, Soybean, Sunflower	7.9 or lower	No restrictions	22
	Panhandle	Field corn	7.9 or lower	15	12
		Cotton (dryland only)	7.9 or lower	30	22
	N. Central Texas*	Field corn	7.9 or lower	15	12
		Cotton (dryland only)	7.9 or lower	25	14
	* The counties of N. Central Texas are: Archer, Baylor, Bell, Bosque, Bowie, Callahan, Camp, Cass, Clay, Collin, Cooke, Coryell, Dallas, Delta, Denton, Eastland, Ellis, Falls, Fannin, Foard, Franklin, Grayson, Hardeman, Haskell, Hill, Hood, Hopkins, Hunt, Jack, Johnson, Kaufman, Knox, Lamar, Limestone, McLennan, Milam, Montague, Morris, Nafarro, Palo Pinto, Parker, Rains, Red River, Robertson, Rockwall, Shackelford, Somervell, Stephens, Tarrent, Throckmorton, Titus, Upshur, Van Zandt, Wilbarger, Wichita, Williamson, Wise, Wood, Young.				
Washington	Statewide	Peas Lentils Canola	6.8 or lower	18	10
		Peas	6.9 to 7.9	18	15
		Lentils	6.9 to 7.9	18	34
		Canola	6.9 to 7.9	18	22
		Condiment mustard	7.3 or lower	10	10
		Condiment mustard	7.4 or higher	28	34
		Chickpeas	7.3 or lower	10	10
		Chickpeas	7.4 or higher	28	34
Utah	Statewide	Flax, Safflower, Sunflower	7.9 or lower	No restrictions	22

Continued on next page

Rotation Intervals For Crops in Non-Irrigated Land (continued)

Following Use of Ciramet™ herbicide at 1/10 oz per Acre on Wheat, Barley, Triticale or Fallow

Location		Crop	Soil pH	Minimum Cumulative Precipitation (inches)	Minimum Rotation Interval (months)
State	County or Area				
Wyoming	Statewide	Flax, Safflower, Sunflower	7.9 or lower	No restrictions	22
	Southern Wyoming	Grain sorghum, Proso millet	7.9 or lower	No restrictions	10
	Southern Wyoming (Goshen, Laramie, and Platte counties only)	Field corn	7.9 or lower	15	12
	Northern Wyoming	Grain sorghum, Proso millet, Field corn	7.9 or lower	22	22

Rotation Intervals not covered above - The minimum rotation interval is 34 months with at least 28" of cumulative precipitation during the period :

- to any major field crop not listed (See the Rotation Intervals table)
- if the soil pH is not in the specified range
- if the use rate applied is not specified in the table
- or if the minimum cumulative precipitation has not occurred since application.

To rotate to a major field crop at an interval shorter than recommended, a field bioassay must be successfully completed to that crop. A field bioassay must be successfully completed before rotation to any minor crops (as determined by the USDA criteria). See section on Field Bioassay for further information.

RECROPPING INTERVALS FOR GRASSES ON CONSERVATION RESERVE PROGRAM (CRP)

Whenever Ciramet™ herbicide has previously been used in wheat, barley, triticale or fallow, the following grasses may be planted after the intervals specified in the tables below. The planting of grass and legume mixtures is not recommended as injury to the legume may occur.

- Bentgrasses
- Blue grama
- Bluestems - Big, Little, Plains, Sand, WW Spar
- Buffalograss
- Galleta
- Green needlegrass
- Green sprangletop
- Indian ricegrass
- Lovegrasses - Sand, Weeping
- Orchardgrass (excluding Paiute)
- Prairie sandreed
- Sand dropseed
- Sheep fescue
- Sideoats grama
- Switchgrass
- Wild-ryegrasses - Beardless, Russian
- Wheatgrasses - Crested, Intermediate, Pubescent, Slender, Streambank, Tall, Thickspike, Western

ROTATION INTERVALS

MN, MT, ND, SD, and Northern WY:

Soil pH	Use Rate (ounces/acre)	Minimum Interval for Planting Grasses
7.5 or lower	1/10	4 months (all grasses)
7.6 to 7.9	1/10	4 months (Wheatgrasses only)

AR, CO, ID, KS, LA, NE, NM, OK, OR, TX, UT, WA, Southern WY:

Soil pH	Use Rate (ounces/acre)	Minimum Interval for Planting Grasses
7.9 or lower	1/10	2 months (all grasses)

GRAZING

There are no grazing restrictions on Ciramet™ herbicide.

IMPORTANT PRECAUTIONS

Treated vegetation may be cut for forage or hay. Coveralls, shoes plus socks must be worn if cutting within 4 hours of treatment.

MIXING INSTRUCTIONS

1. Fill the tank 1/4 to 1/3 full of water (If using liquid nitrogen fertilizer solution in place of water, see Tank Mixtures sections for additional details).
2. While agitating, add the required amount of Ciramet™ herbicide.
3. Continue agitation until the Ciramet™ herbicide is fully dispersed, at least 5 minutes.
4. Once the Ciramet™ herbicide is fully dispersed, maintain agitation and continue filling tank with water. Ciramet™ herbicide should be thoroughly mixed with water before adding any other material.
5. As the tank is filling, add tank mix partners (if desired) then add the necessary volume of nonionic surfactant. Always add surfactant last.
6. If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.
7. Apply Ciramet™ herbicide spray mixture within 24 hours of mixing to avoid product degradation.
8. If Ciramet™ herbicide and a tank mix partner are to be applied in multiple loads, pre-slurry the Ciramet™ herbicide in clean water prior to adding to the tank. This will prevent the tank mix partner from interfering with the dissolution of the Ciramet™ herbicide.

Do not use Ciramet™ herbicide with spray additives that reduce the pH of the spray solution to below 3.0.

SPRAY EQUIPMENT

For specific application equipment, refer to the manufacturer's recommendations for additional information on GPA, pressure, speed, nozzle types and arrangements, nozzle heights above the target canopy, etc.

Be sure to calibrate air or ground equipment properly before application. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern with minimum drift. Use higher spray volumes to obtain better coverage when the crop canopy is dense. Avoid swath overlapping, and shut off spray booms while starting, turning, slowing, or stopping to avoid crop injury.

Do not make applications using equipment and/or spray volumes or under weather conditions that might cause spray to drift onto nontarget sites. For additional information on spray drift, refer to the **Spray Drift Management** section of the label.

Continuous agitation is required to keep Ciramet™ herbicide in suspension.

SPRAYER CLEANUP

Spray equipment must be cleaned before Ciramet™ herbicide is sprayed. Follow the cleanup procedures specified on the labels of previously applied products. If no directions are provided, follow the six steps outlined in **After Spraying Ciramet™ herbicide** section of this label.

At the End of the Day

When multiple loads of Ciramet™ herbicide are applied, it is recommended that at the end of each day of spraying, the interior of the tank be rinsed with fresh water and then partially filled, and the boom and hoses flushed. This will prevent the buildup of dried pesticide deposits that can accumulate in the application equipment.

After Spraying Ciramet™ herbicide and Before Spraying Crops Other Than Wheat, Barley, Triticale or Fallow

To avoid subsequent injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of Ciramet™ herbicide as follows:

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water. Loosen and physically remove any visible deposits.
2. Fill the tank with clean water and 1 gal of household ammonia* (contains 3% active) for every 100 gal of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 min. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank.

3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat step 2.
5. Rinse the tank, boom, and hoses with clean water.
6. If only Ammonia is used as a cleaner, the rinsate solution may be applied back to the crop(s) recommended on this label. Do not exceed the maximum labeled use rate. If other cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on site or at an approved waste disposal facility.

   * Equivalent amounts of an alternate-strength ammonia solution or an Agsurf-approved cleaner can be used in the cleanout procedure. Carefully read and follow the individual cleaner instructions. Consult your agricultural dealer, applicator, or Agsurf representative for a listing of approved cleaners.

Notes:

1. **Attention:** Do not use chlorine bleach with ammonia, as dangerous gases will form. Do not clean equipment in an enclosed area.
2. Steam-cleaning aerial spray tanks is recommended prior to performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When Ciramet™ herbicide is tank mixed with other pesticides, all required cleanout procedures should be examined and the most rigorous procedure should be followed.
4. In addition to this cleanout procedure, all precleanout guidelines on subsequently applied products should be followed as per the individual labels.
5. Where routine spraying practices include shared equipment frequently being switched between applications of Ciramet™ herbicide and applications of other pesticides to Ciramet™ herbicide-sensitive crops during the same spray season, it is recommended that a sprayer be dedicated to Ciramet™ herbicide to further reduce the chance of crop injury.

SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS! See **Wind**, **Temperature and Humidity**, and **Temperature Inversions** sections of this label.

Controlling Droplet Size - General Techniques

- **Volume -** Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure -** Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- **Nozzle Type -** Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

Controlling Droplet Size - Aircraft

- **Number of Nozzles -** Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation -** Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type -** Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- **Boom Length -** The boom length should not exceed 3/4 of the wing or rotor length - longer booms increase drift potential.
- **Application Height -** Application more than 10 ft above the canopy increases the potential for spray drift.

BOOM HEIGHT

Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

WIND

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID GUSTY OR WINDLESS CONDITIONS.

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

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

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide recommendations available in your area.

INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

PRECAUTIONS

- Do not apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots extend, or in locations where the product may be washed or moved into contact with their roots, as injury or loss of desirable trees or other plants may result.
- Do not use on lawns, walks, driveways, tennis courts, golf courses, athletic fields, commercial sod operations, or other high-maintenance, fine turfgrass areas, or similar areas.
- Do not use on grasses grown for seed.
- Do not apply to irrigated land where tailwater will be used to irrigate crops other than wheat and barley.

- Do not apply to frozen ground as surface runoff may occur.
- Do not apply to snow-covered ground.
- Wheat and barley varieties may differ in their response to various herbicides. Agsurf recommends that you first consult your state experiment station, university, or extension agent as to sensitivity to any herbicide. If no information is available, limit the initial use of Ciramet™ herbicide to a small area.
- Under certain conditions such as heavy rainfall, prolonged cold weather, or wide fluctuations in day/night temperatures prior to or soon after Ciramet™ herbicide application, temporary discoloration and/or crop injury may occur. Ciramet™ herbicide should not be applied to wheat or barley that is stressed by severe weather conditions, drought, low fertility, water-saturated soil, disease, or insect damage, as crop injury may result. Risk of injury is greatest when crop is in the 2 to 5- leaf stage. Severe winter stress, drought, disease, or insect damage following application also may result in crop injury.
- The combined treatment effects of Ciramet™ herbicide postemergence preceded by preemergence wild oat herbicides may cause crop injury to spring wheat when crop stress (soil crusting, planting too deep, prolonged cold weather, or drought) causes poor seedling vigor.
- In the Pacific Northwest, to prevent cold weather-related crop injury, avoid making applications during winter months when weather conditions are unpredictable and can be severe.
- Do not apply to wheat, barley or triticale undersown with legumes, as injury to the forage may result.
- To reduce the potential for movement of treated soil due to wind erosion, do not apply to powdery dry or light sandy soils until they have been stabilized by rainfall, trashy mulch, reduced tillage, or other cultural practices. Injury to immediately adjacent crops may occur when treated soil is blown onto land used to produce crops other than cereal grains or pasture/rangeland.
- For ground applications applied to weeds when dry, dusty field conditions exist, control of weeds in wheel track areas may be reduced. The addition of 2,4-D or MCPA should improve weed control under these conditions.
- Preplant or preemergence applications of 2,4-D or herbicides containing 2,4-D made within 2 weeks of planting spring cereals may cause crop injury when used in conjunction with early postemergence applications of Ciramet™ herbicide. For increased crop safety, delay Ciramet™ herbicide treatment until crop tillering has begun.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place.

Pesticide Disposal: Do not contaminate water, food, or feed by disposal. Waste resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling: Refer to the Net Contents section of this product's labeling for the applicable "Nonrefillable Container" or "Refillable Container" designation.

Nonrefillable Plastic and Metal Containers (Capacity Equal to or Less Than 50 Pounds): Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water 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. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities

Nonrefillable Plastic and Metal Containers (Capacity Greater Than 50 Pounds): Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Plastic and Metal Containers, e.g., Intermediate Bulk Containers [IBC] (Size or Shape Too Large to be Tipped, Rolled or Turned Upside Down): Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying the contents from this container into application equipment or mix tank and before final disposal using the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Paper or Plastic Bags, Fiber Sacks including Flexible Intermediate Bulk Containers (FIBC) or Fiber Drums With Liners: Nonrefillable container. Do not reuse or refill this container. Completely empty paper or plastic bag, fiber sack or drum liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer for recycling if available or dispose of empty paper or plastic bag, fiber sack or fiber drum and liner in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

Refillable Fiber Drums With Liners: Refillable container (fiber drum only). Refilling Fiber Drum: Refill this fiber drum with Ciramet™ herbicide containing metsulfuron methyl only. Do not reuse this fiber drum for any other purpose. Cleaning before refilling is the responsibility of the refiller. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Disposing of Fiber Drum and/or Liner: Do not reuse this fiber drum for any other purpose other than refilling (see preceding). Cleaning the container (liner and/or fiber drum) before final disposal is the responsibility of the person disposing of the container. Offer the liner for recycling if available or dispose of liner in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner. To clean the fiber drum before final disposal, completely empty the fiber drum by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer the fiber drum for recycling if available or dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

All Other Refillable Containers: Refillable container. Refilling Container: Refill this container with Ciramet™ herbicide containing metsulfuron methyl only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. If damage is found, do not use the container, contact Agsurf at the number below for instructions. Check for leaks after refilling and before transporting. If leaks are found, do not reuse or transport container, contact Agsurf at the number below for instructions. Disposing of Container: Do not reuse this container for any other purpose other than refilling (see preceding). Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, use the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Outer Foil Pouches of Water Soluble Packets (WSP): Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or, dispose of the empty outer foil pouch in the trash as long as WSP is unbroken. If the outer pouch contacts the formulated product in any way, the pouch must be triple rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer pouch as described previously.

Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, contact Agsurf at 1-888-261-1410, day or night.

NOTICE TO BUYER: Purchase of this material does not confer any rights under patents of countries outside of the United States.

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Agsurf warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for the purpose stated in the Directions for Use, subject to the inherent risks described above, when used in accordance with the Directions for Use under normal conditions.

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SUPPLEMENTAL LABELING

8690.2

Ciramet™ Herbicide

EPA Reg. No. 352-435-85588

FOR WEED CONTROL IN SUGARCANE IN THE STATE OF HAWAII

DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state, consult the agency responsible for pesticide regulation.

GENERAL INFORMATION

Ciramet™ herbicide is recommended for use on sugarcane in Hawaii.

INFORMATION ON RESISTANT WEEDS

Naturally-occurring weed biotypes resistant to this product are known to exist in Hawaii sugarcane. To delay the development of resistant biotypes, refer to the Weed Resistance section on the Federal Section 3 label.

SUGARCANE MAXIMUM USE RATE: Do not apply more than 6.25 ounces of product per acre per crop.

WEED CONTROL IN SUGARCANE: For best weed control or weed suppression, apply Ciramet™ herbicide as a preplant/preemergence broadcast application or as postemergence direct spray application to weeds when environmental conditions favor active growth of broadleaf weeds. Unless otherwise directed, always include a surfactant at 0.25 to 0.50% V/V for postemergence mixture.

PREPLANT/PREEMERGENCE APPLICATION: Apply as a broadcast application at a rate of 0.83 to 3.33 ounces per acre with ground equipment or air. Application should be made before crop emerges as crop injury to some varieties may occur.

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POSTEMERGENCE APPLICATION: Apply as a directed spray application to emerged weeds at rates of 0.83 to 3.33 ounces per acre with ground equipment or by hand equipment. Avoid contact with the sugarcane foliage as injury may occur.

WEEDS CONTROLLED: Ciramet™ herbicide will control a number of broadleaf weeds including:

Amaranthus sp.
Ipomoea triloba (Aiea Morningglory)
Portulaca sp. (Purslane)
Euphorbia sp. (Spurge)
Momordica charantia (Peria)
Erigeron canadensis (Fireweed)
Crotalaria sp.
Ageratum sp.
Crassocephalum crepidioides (Thick head)

PARTIALLY CONTROLLED
Chloris inflata (Swollen fingergrass)

NOTE: Do not apply Ciramet™ herbicide closer than 16 months before harvest.

PRECAUTIONS
- Do not use liquid fertilizer in addition or as a substitute for a surfactant.
- Do not use on soils with pH greater than 7.9 (for example, highly calcareous soils) if the following crop is sensitive to Ciramet™ herbicide. Extended soil residual activity could adversely affect minimum rotation intervals for all crops.
- Do not apply to irrigated land where tailwater will be used to irrigate crops other than sugarcane. Varieties of sugarcane may differ in their tolerance to herbicides and some varieties can be adversely affected with post emergence applications. Therefore it is recommended that a small test block be installed prior to large scale applications.
- Do not apply Ciramet™ herbicide to sugarcane that is stressed by severe weather conditions, drought, low fertility, water saturated soil, disease or insect damage, as crop injury may result. Under certain conditions such as heavy rainfall, temporary discoloration and/or crop injury may occur. To reduce the potential for movement of treated soil due to wind erosion, do not apply to powdery dry or light sandy soils until they have been stabilized by rainfall, trashy mulch, reduced tillage or other cultural practices. Injury to adjacent crops may occur when treated soil is blown onto land used to produce other crops. For ground applications applied to weeds when dry, dusty field conditions exist, control of weeds in wheel track areas may be reduced.

Ciramet™ herbicide must be cleaned from application equipment according to cleanup procedures described in the SPRAYER CLEANUP section of the Federal Section 3 label.

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IMPORTANT BEFORE USING CIRAMET™ HERBICIDE, READ AND FOLLOW ALL APPLICABLE DIRECTIONS, RESTRICTIONS AND PRECAUTIONS ON THE EPA-REGISTERED LABEL.

This bulletin contains new or supplemental instructions for use of this product which do not appear on the EPA-registered package label. Follow the instructions carefully.

This labeling must be in the possession of the user at the time of pesticide application. Read the Limitation of Warranty and Liability on the Section 3 Federal product label before buying or using THIS product. If terms are not acceptable, return the unopened package at once to Seller for full refund of purchase price paid. Otherwise, use by Buyer or any other User constitutes acceptance of the terms of the Limitation of Warranty and Liability on the Section 3 Federal product label.

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