

Octane[®] 2% SC

Herbicide

SPECIMEN



GROUP 14 HERBICIDE

A NONSELECTIVE CONTACT HERBICIDE FOR BROADLEAF WEED CONTROL AND FOR CONTROL OF SILVERY THREAD MOSS FOR USE IN NURSERIES AND ORNAMENTAL PLANTINGS; SOD FARMS; CHRISTMAS TREES; AND ESTABLISHED ORNAMENTAL TURF

Active Ingredient:

Pyraflufen ethyl: Acetic acid, [2-chloro-5-(4-chloro-5-(difluoromethoxy)-1-methyl-1H-pyrazol-3-yl)-4-fluorophenoxy]-, ethyl ester2.0%

Other Ingredients:..... 98.0%

TOTAL.....100.0%

Contains 0.17 lbs. pyraflufen-ethyl per gallon

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

Manufactured for:

SePRO Corporation, 11550 N. Meridian St., Ste. 600, Carmel, IN 46032, U.S.A.

EPA Reg. No. 71711-25-67690

FPL20170927

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Wear long-sleeved shirt and long pants, socks, shoes, and chemical resistant gloves.

FIRST AID

If on skin or clothing	<ul style="list-style-type: none">Take off contaminated clothing.Rinse skin immediately with plenty of water for 15 - 20 minutes.Call a poison control center or doctor for treatment advice.
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HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For additional information on this pesticide product, including human health concerns and medical emergencies and in case of fire or spills, call **INFOTRAC 1-800-535-5053**.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves

User Safety Requirements

Follow the 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.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

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.

ENVIRONMENTAL HAZARDS

This product is toxic to fish and aquatic invertebrates. This product may contaminate water through drift of spray in wind or via runoff events. Use care when applying in areas adjacent to any body of water. Do not apply directly to water, 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 washwater or rinsate. Do not apply when weather conditions favor drift from treated areas.

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 State or Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

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

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

For early entry into 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, wear:

- Coveralls
- Chemical resistant gloves
- Shoes plus socks

NONAGRICULTURAL 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. For other uses, including interiorscapes and other nonagricultural uses, do not enter treated areas without protective clothing until sprays have dried.

USE INFORMATION

OCTANE 2% SC Herbicide is a contact herbicide, and requires thorough coverage for complete broadleaf and bryophytic weed control.

OCTANE 2% SC Herbicide must be tank mixed with another foliar active broadleaf herbicide for complete control of most broadleaf weeds.

Do not apply OCTANE 2% SC Herbicide through any type of irrigation system.

OCTANE 2% SC Herbicide is rainfast one hour after application.

ROTATIONAL CROP RESTRICTIONS

Crop / Crop Group	Rotational / Plantback Intervals
Corn Cotton Grape Olive Pome Fruits (Crop Group 11-10) Pomegranate Potato Soybean Stone Fruits (Crop Group 12) Tree Nuts (Crop Group 14) Plus Pistachio Triticale; Wheat	0 days following application
Bulb Vegetables (Crop Group 3) Cereal Grains (Crop Group 15, except corn, wheat, and triticale; see 0-day plantback interval above) Brassica (Cole) Leafy Vegetables (Crop Group 5) Cucurbit Vegetables (Crop Group 9) Fruiting Vegetables (Crop Group 8) (Except Cucurbits) Leafy Vegetables (Crop Group 4) (Except Brassica Vegetables) Legume Vegetables, Succulent or Dried (Crop Group 6) Oilseed Group (Crop Group 20) Root and Tuber Vegetables (Crop Group 1, except potato; see 0-day plantback interval above) Sugarcane	1 day following preplant burndown application
All other rotational crops	Do not plant for 30 days following the last application of OCTANE 2% SC Herbicide.

BROADLEAF WEEDS CONTROLLED

The following broadleaf weed species can be controlled or suppressed up to 4 inches in height or less or rosettes of 3 inches in diameter or less. Tank mixtures of OCTANE 2% SC Herbicide with other labeled broadleaf herbicides may be needed for control of some weed species. Control may be reduced with weeds larger than 4 inches in height or 3 inches in diameter.

Alkaliweed*	Henbit	Purslane, common
Amaranth, Palmer*	Horsenettle*	Radish, wild
Bedstraw	Kochia	Ragweed, common
Beggartick, hairy	Ladysthumb	Ragweed, giant
Beggarweed, Florida	Lambsquarters, common	Redmaid
Bindweed, field	Lettuce, prickly	Rocket, London
Buckwheat, wild	Mallow, common	Sesbania, hemp
Canola	Malva spp.	Shepherd's-purse
Carpetweed	Marestail*	Smartweed, Pennsylvania
Celery, wild	Milkthistle	Smellmelon
Chickweed	Morningglory, species	Sowthistle, annual
Clover, white	Mustard, wild*	Spurge, leafy
Cocklebur	Nettle, stinging	Sunflower, common
Cotton, volunteer (conventional, GMO varieties)	Nightshade, black	Tansymustard, western
Dandelion, common	Nightshade, silverleaf	Thistle, Canada Thistle, Russian
Dock, curly	Panicum willowweed	Toadflax, Dalmatian
Dollarweed	Pigweed, redroot	Velvetleaf
Eclipta	Pigweed, smooth	Virginia-creeper
Eveningprimrose, cutleaf	Pineapple-weed	Waterhemp, common
Fleabane* Geranium, Carolina	Poinsettia, wild	Waterhemp, tall
	Poison-ivy	
	Potato, volunteer	
	Prickly sida (teaweed)	

*suppression

BRYOPHITIC WEEDS CONTROLLED

Silvery thread moss (non-vascular plant)

WEED RESISTANCE

Pyraflufen-ethyl, the active ingredient in this product, is a Group 14 herbicide based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain plants naturally resistant to Group 14 herbicides. Such resistant weed plants may not be effectively managed using Group 14 herbicides but may be effectively managed utilizing another herbicide alone or in mixtures from a different Group and/or by using cultural or mechanical practices. However, a herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides. Consult your local company representative, state cooperative extension service, professional consultants or other qualified authorities to determine appropriate actions for treating specific resistant weeds.

BEST MANAGEMENT PRACTICES

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended. A diversified weed management program may include the use of multiple herbicides with different modes of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using the labeled rate and directions for use is important to delay the selection for resistance. Scouting after a herbicide application is important because it can facilitate the early identification of weed shifts and/or weed resistance and thus provide direction on future weed management practices. One of the best ways to contain resistant populations is to implement measures to avoid allowing weeds to reproduce by seed or to proliferate vegetatively. Cleaning equipment between sites and avoiding movement of plant material between sites will greatly aid in retarding the spread of resistant weed seed.

TANK MIXTURES

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.

OCTANE 2% SC Herbicide may be applied as a tankmix or in sequential application with other herbicide, fungicide, or insecticide products. Weather, crop conditions, or the presence of certain weeds, crop damaging insects, or diseases will indicate the inclusion of other pesticides in the application.

NOTE: It is recommended that the compatibility of OCTANE 2% SC Herbicide in any tankmix combination be tested before use. To determine the physical compatibility with other products, use a jar test, as described below:

Using a quart jar, add the proportionate amounts of the products to 1 qt. of water. Add wettable powders and water-dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

Read and follow all label directions for each tankmix product. Always use in accordance with the most restrictive of label precautions and limitations.

MIXING DIRECTIONS

OCTANE 2% SC Herbicide Alone: Fill spray tank with $\frac{3}{4}$ of the amount of water needed for the intended application and then turn on agitation. Pour the specified amount of product on the surface of the water in the spray tank. Add the remaining water volume to the spray tank with agitation running. Keep agitation running during filling and spraying operations. If spraying must be stopped before emptying the sprayer, resume agitation before spraying the remainder of the load. Mix only as much spray solution as can be sprayed within four hours. Storage and use of the previous day's spray mix may result in reduced activity.

OCTANE 2% SC Herbicide in Tank Mixtures: Begin with clean equipment. Fill spray tank with $\frac{3}{4}$ of the amount of water needed for the intended application and turn on agitation. If using a buffering agent, add after filling the tank with $\frac{3}{4}$ amount of water. Add the specified amount of tankmix products in the following order while maintaining agitation:

- 1) products in water-soluble packets
- 2) wettable powders
- 3) water-dispersible granulars and/or soluble powders
- 4) flowable liquids (including OCTANE 2% SC Herbicide)
- 5) emulsifiable concentrates
- 6) adjuvants and/or oils
- 7) remaining amount of water to achieve the desired level

Always follow the labeled mixing instructions of any partner products. Keep agitation running during filling and spraying operations. If spraying must be stopped before emptying the sprayer, resume agitation before spraying the remainder of the load. Mix only as much spray solution as can be sprayed within four hours. Storage and use of the previous day's spray mix may result in reduced activity.

Use an approved agricultural buffering agent, buffering to pH 7.5 or less if using OCTANE 2% SC Herbicide in a water source greater than or equal to pH 7.5. Always buffer the water source BEFORE adding OCTANE 2% SC Herbicide to the spray tank.

SPRAY DRIFT

Avoid spray drift to all other crops and nontarget areas. Do not apply when weather conditions may cause drift. Do not allow this product to drift onto nontarget areas. Drift may result in illegal residues or injury to adjacent crops and vegetation in the form of leaf yellowing and defoliation. To avoid spray drift, DO NOT apply aerially when wind speed is greater than 10 mph or during periods of temperature inversions. Use of larger droplet size will also reduce spray drift.

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

The interaction of equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making decisions. Droplet size, boom height, temperature inversions, and wind speed are the primary factors determining drift. The specific application conditions required for the use of this product are described below.

Information on Droplet Size

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

Controlling Droplet Size

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.

- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.
- **Maintenance of Nozzles** – Periodic inspection and subsequent replacement of nozzles to ensure proper chemical application is recommended.

Boom Length

For some use patterns, reducing the effective boom length to less than ¾ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

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

Swath Adjustment

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

Wind

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

Temperature and Humidity

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

Temperature Inversions

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

Sensitive Areas

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

EQUIPMENT CLEANING

Do not allow the spray solution to dry in the application equipment. After application and before using the sprayer equipment for any other applications, the sprayer must be thoroughly cleaned. Applicators must ensure proper equipment clean-out for any other products mixed with OCTANE 2% SC Herbicide as provided on the other product label(s). Immediately following application, clean all equipment thoroughly with detergent or a spray tank cleaner and water as described below. Should residues of OCTANE 2% SC Herbicide remain in inadequately cleaned equipment, they may be released in subsequent applications and cause injury to crops.

1. Drain sprayer tank, hoses, and spray boom, and thoroughly rinse with clean water the inside of the spray tank, sprayer hoses, boom, and nozzles to remove any sediment or residues.
2. Fill the tank 1/2 full with clean water, add the appropriate detergent (follow manufacturer’s directions for use). Fill tank to capacity and operate the sprayer with agitation for 15 minutes to flush hoses, boom, and nozzles.
3. Drain the sprayer tank, lines, and booms. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Remove and clean spray nozzles, tips, and screens.

4. Dispose of all cleaning solutions, rinsate, and washwaters in accordance with federal, state, and local regulations.

**APPLICATION AND DOSAGE
SPOT TREATMENT**

For spot treatment to listed broadleaf weeds or for sucker management, refer to the information below to determine the amount of OCTANE 2% SC Herbicide to add to a tank. Spray using a pressure (pump-up) sprayer (or similar application equipment) until wet but prior to runoff. Use information for rates, concentrations, water volumes, and timing and frequency of application can be found in the Rate/Acre and Directions for Use columns in the APPLICATION AND DOSAGE tables. Please refer to and follow all precautions and restrictions under Directions for Use for the crop to be treated.

Fluid oz of OCTANE 2% SC Herbicide to add to sprayer tank

Sprayer tank capacity (gallons)	Spray volume (gallons/A)	fluid oz OCTANE 2% SC Herbicide to add per tank for a rate of 1.0 fl. oz./A (0.0013 lb ai/A)	fluid oz OCTANE 2% SC Herbicide to add per tank for a rate of 4.0 fl. oz./A (0.0053 lb ai/A)
1	20	0.05	0.20
	30	0.03	0.13
	40	0.03	0.10
3	20	0.15	0.60
	30	0.10	0.40
	40	0.08	0.30
5	20	0.25	1.00
	30	0.17	0.67
	40	0.13	0.50
10	20	0.50	2.00
	30	0.33	1.33
	40	0.25	1.00

Formula

$$\text{Fluid oz OCTANE 2\% SC to add to sprayer tank} = \frac{\text{Application rate} \times \text{Sprayer tank capacity}}{\text{Spray volume}}$$

Example Calculation for 1 gallon sprayer tank capacity

$$\begin{aligned} \text{Fluid oz OCTANE 2\% SC to add to sprayer tank} &= \frac{4.0 \text{ fl. oz. /A} \times 1 \text{ gallon}}{40 \text{ gallons/A}} \\ &= 0.10 \text{ fl. oz.} \end{aligned}$$

$$\begin{aligned} \text{where: Application rate} &= 4.0 \text{ fl. oz./A} \\ \text{Sprayer tank capacity} &= 1 \text{ gallon} \\ \text{Spray volume} &= 40 \text{ gallons/A} \end{aligned}$$

Example Calculation for 5 gallon sprayer tank capacity

$$\begin{aligned} \text{Fluid oz OCTANE 2\% SC to add to sprayer tank} &= \frac{4.0 \text{ fl. oz. /A} \times 5 \text{ gallons}}{40 \text{ gallons/A}} \\ &= 0.50 \text{ fl. oz.} \end{aligned}$$

$$\begin{aligned} \text{where: Application rate} &= 4.0 \text{ fl. oz./A} \\ \text{Sprayer tank capacity} &= 5 \text{ gallons} \\ \text{Spray volume} &= 40 \text{ gallons/A} \end{aligned}$$

ESTABLISHED ORNAMENTAL TURF LAWNS (RESIDENTIAL, INDUSTRIAL, AND INSTITUTIONAL), PARKS, CEMETERIES, ATHLETIC FIELDS, GOLF COURSES (FAIRWAYS, APRONS, GREENS, TEES, AND ROUGHS), AND SOD FARMS

Do not allow people (other than the applicator) or pets on treatment area during the application and until sprays have dried.

Pest	Rate/Acre	Directions for Use
Silvery Thread Moss	2.0 to 6.8 fl. oz./acre (0.046 to 0.156 fl.oz./1000 ft²) (0.003 to 0.009 lb ai/acre)	<ul style="list-style-type: none"> • For ground application, use a minimum of 40 gallons of water per acre. • Allow at least 14 days between applications. • Multiple applications will be required for complete control.
Broadleaf weeds	1.0 to 4.0 fl. oz./ acre (0.0013 to 0.0053 lb ai/ acre)	<ul style="list-style-type: none"> • For ground application, use a minimum of 20 gallons of water per acre. • Allow at least 30 days between applications for control of broadleaf weeds.
Turf Areas (all uses)		<ul style="list-style-type: none"> • Do not apply more than 13.6 fl. oz. OCTANE 2% SC/acre per year (0.018 lb a.i./acre). • The use of a non-ionic surfactant at a rate of 0.25% v/v is recommended to obtain best results. • Do not apply by air.

Spray Concentrate

Make an appropriate amount of spray concentrate for the area to be treated by adding 10 fl. oz. of Octane 2% SC Herbicide to 120 fl. oz. of water (e.g., 1.25 fl. oz. Octane 2% SC Herbicide to 15 fl. oz. water). Use the appropriate amount of concentrate as specified in the dosage tables below for application by pressure (pump-up) sprayer, hose-end sprayer, or similar application equipment.

Spot treatment: Pressure sprayer (Pump-up Sprayer)

Adjust spray nozzle to give coarse spray. Aim at center of weed and spray to wet. A repeat application may be required for hard-to-kill weeds. Do not use a hose-end sprayer for spot treatments.

Turf Species	Application Rate	Amount of Spray Concentrate (fluid ounces)	Amount of water to be applied (gallons)	Area to Treat (square feet)
Cool season grasses: bluegrass, fescue, ryegrass Warm season grasses: bahigrass, common bermudagrass, centipedegrass, St. Augustine grass, zoysia grass	3.4 fl. oz./acre (0.0045 lb ai/acre)	1.0	4	1000
		0.5	2	500

Formula

Amount of Spray Concentrate, fl. oz.
 = (Application Rate) x (Spray Concentrate Dilution) x (Area to Treat)
 x (Conversion Factor)

Example Calculation: Amount of Spray Concentrate to treat 1000 sq ft

Amount of Spray Concentrate, fl. oz.
 = $\frac{3.4 \text{ fl. oz.}}{A} \times \left(\frac{130 \text{ fl. oz. Spray Concentrate}}{10 \text{ fl. oz. OCTAINE 2\% SC}} \right) \times 1000 \text{ sq. ft.} \times \frac{1 \text{ acre}}{43560 \text{ sq. ft.}}$
 = $\frac{3.4 \times 13 \times 1000}{43560}$
 = 1.0 fl oz spray concentrate to treat 1000 sq. ft.

where: Application rate = 3.4 fl. oz./A
 Spray Concentrate Dilution: = 130 fl. oz. Spray Concentrate/
 10 fl. oz. OCTAINE 2% SC
 Area to Treat: = 1000 sq. ft.
 Conversion Factor: = 1 acre/43560 sq. ft.

Entire lawn: Dial Type Hose-End Sprayer

Spray lawn using coarse spray. Apply evenly over area to be treated. One application should be sufficient. Effects begin to show after 24 to 48 hours with plant death occurring within 7 to 14 days.

- 1) Measure the total square footage area to be sprayed. To determine the total square foot area, multiply the length by the width of the lawn area to be treated. Subtract square footage of non-treatment areas including flower beds, shrub beds, driveways and sidewalks.
- 2) The application rate of this product is indicated in the following table. Add the appropriate amount of spray concentrate to the spray bottle, [jar], [reservoir], as indicated in the table depending on the lawn area to be treated.
- 3) Set the dial to the correct fluid ounce setting mix rate indicated in the following table.
- 4) Connect the hose, turn on water and spray evenly over the lawn treatment area. One gallon of mixed spray solution should cover approximately 2000 square feet.
- 5) Monitor the spray solution level in the spray bottle, [jar], [reservoir], to gauge coverage.

Turf Species	Application Rate	Area to Treat (square feet)	Amount of Spray Concentrate (fluid ounces)	Dial-type Hose-end sprayer mix setting (fl. oz. per gallon)
Cool season grasses: bluegrass, fescue, ryegrass	3.4 fl. oz./acre (0.0045 lb a.i./acre)	1000	1.0	2.0 fl. oz.
		5000	5.0	
		8000	8.0	

Formula

Amount of Spray Concentrate, fl. oz.
 = (Application Rate) x (Spray Concentrate Dilution) x (Area to Treat)
 x (Conversion Factor)

Example Calculation: fl. oz. Spray Concentrate to treat 5000 sq ft

Amount of Spray Concentrate, fl. oz.
 = $\frac{3.4 \text{ fl. oz.}}{A} \times \left(\frac{130 \text{ fl. oz. Spray Concentrate}}{10 \text{ fl. oz. OCTAINE 2\% SC}} \right) \times 5000 \text{ sq. ft.} \times \frac{1 \text{ acre}}{43560 \text{ sq. ft.}}$
 = 5.0 fl. oz. spray concentrate to treat 5000 sq. ft.

where:

Application rate = 3.4 fl. oz./A
 Spray Concentrate Dilution: = 130 fl. oz. Spray Concentrate/
 10 fl. oz. OCTAINE 2% SC
 Area to Treat: = 5000 sq. ft.
 Conversion Factor: = 1 acre/43560 sq. ft.

Broadcast Application: Spray using coarse spray. Apply evenly over area to be treated.

Turf Species	Application Rate	Amount of Spray Concentrate (fluid ounces)	Area to Treat (square feet)
Cool season grasses: bluegrass, fescue, ryegrass; Warm season grasses: bahigrass, common bermudagrass, centipedegrass, St Augustine grass, zoysia grass	3.4 fl. oz./acre (0.0045 lb a.i./acre)	1.0	1000
		5.0	5000
		8.0	8000

Formula

Amount of Spray Concentrate, fl. oz.
 = (Application Rate) x (Spray Concentrate Dilution) x (Area to Treat)
 x (Conversion Factor)

Example Calculation: fl. oz. Spray Concentrate to treat 8000 sq ft

Amount of Spray Concentrate, fl. oz.
 = $\frac{3.4 \text{ fl. oz.}}{A} \times \left(\frac{130 \text{ fl. oz. Spray Concentrate}}{10 \text{ fl. oz. OCTAINE 2\% SC}} \right) \times 8000 \text{ sq. ft.} \times \frac{1 \text{ acre}}{43560 \text{ sq. ft.}}$
 = 8.0 fl oz spray concentrate to treat 8000 sq. ft.

where: Application rate = 3.4 fl. oz./A
 Spray Concentrate Dilution: = 130 fl. oz. Spray Concentrate/
 10 fl. oz. OCTAINE 2% SC
 Area to Treat: = 8000 sq. ft.
 Conversion Factor: = 1 acre/43560 sq. ft.

PRECAUTIONS FOR USE IN NURSERIES AND ORNAMENTAL PLANTINGS; SOD FARMS; CHRISTMAS TREES AND CONIFER PLANTATION SITE PREPARATION; ESTABLISHED TURF AREAS

Turfgrass Tolerance

Established turfgrasses tolerant to application of OCTANE 2% SC Herbicide at labeled rates are listed below. For turfgrass species not listed on this label, the user should apply OCTANE 2% SC Herbicide to a small test area to assure tolerance. A slight transitory yellowing or discoloration may occur on some sensitive turfgrass species under stress 3 to 5 days following application of OCTANE 2% SC Herbicide at labeled rates. Recovery is typically 4 to 7 days from application.

Cool Season Turfgrasses (creeping bentgrass, Kentucky bluegrass, rough bluegrass, tall fescue, perennial ryegrass). Cool season grasses, both newly seeded and established, are generally tolerant to application of OCTANE 2% SC Herbicide at labeled rates. To evaluate tolerance of certain species, apply to a small test area before treating large areas to assure tolerance. Be aware and observe all label restrictions regarding turfgrass tolerance when OCTANE 2% SC Herbicide is tank mixed with another product.

Warm Season Turfgrasses (common and hybrid bermudagrass, centipedegrass, St. Augustinegrass, zoysiagrass). Warm season turfgrasses listed above are generally tolerant to applications of OCTANE 2% SC Herbicide at labeled rates. Centipedegrass may exhibit a slight yellowing 3 to 7 days after application, however complete recovery is expected. To evaluate tolerance of certain species, apply to a small test area before treating large areas to assure tolerance. Be aware and observe all label restrictions regarding turfgrass tolerance when OCTANE 2% SC Herbicide is tank mixed with another product.

Newly Seeded, Sodded, or Sprigged Turfgrass

OCTANE 2% SC Herbicide may be applied to newly seeded, sodded, or sprigged turfgrass that is established and not subject to impending stress due to moisture, temperature, or other cultural practices. Areas treated with OCTANE 2% SC Herbicide may be seeded or overseeded one day following application.

Dormant Turfgrass

Applications of OCTANE 2% SC Herbicide to dormant warm season turfgrasses are permitted. Avoid applications when warm season turfgrasses are transitioning into or out of dormancy.

Apply OCTANE 2% SC Herbicide at rates specified in the dosage table below for control of broadleaf weeds. OCTANE 2% SC Herbicide is a broadleaf contact herbicide. OCTANE 2% SC Herbicide may be tank mixed with other registered grass herbicides for control of grassy weeds. **Avoid contact with desirable vegetation. Do not apply to lawns or turf where clovers and carpetgrass are desirable.**

Spray Volume

OCTANE 2% SC Herbicide is a contact herbicide that causes herbicidal symptoms only to plant parts that come into contact with spray applications. Therefore, proper spray volume and uniform coverage are important to maximize efficacy of OCTANE 2% SC Herbicide. Uniform sprays should be applied at 20 to 200 gallons/A (0.5 to 4.5 gallons per 1000 sq. ft.). Higher spray volumes should be used to target high weed populations and/or weeds contained in dense turfgrass canopies.

Use of Adjuvants

Addition of surfactants (spreaders/stickers) to the spray solution will improve efficacy and contact activity of OCTANE 2% SC Herbicide. Follow manufacturer's recommended use rates for specific sites.

Use	Rate/Acre	Directions for Use
Nursery and ornamental plantings Sod farms Christmas trees and conifer plantation site preparation Established Ornamental turf	When not tank mixing with other herbicides: Apply OCTANE 2% SC Herbicide at rates of 1.0 to 4.0 fluid ounces per acre (0.0013 to 0.0053 lb ai/acre) in 20 to 40 GPA for control of seedling, non-mature winter and summer annual weeds and/or for temporary burndown of weeds listed in <i>Broadleaf Weeds Controlled</i> . Tank mixes including other broadleaf herbicides with OCTANE 2% SC Herbicide may be needed for control of larger winter and summer annual broadleaf weeds.	<ul style="list-style-type: none"> Do not exceed 13.6 fl. oz./A (0.0181 lb ai/A) per year using ground equipment. Allow a minimum of 30 days between applications for control of broadleaf weeds. Do not apply by air.
	When tank mixing with other herbicides: Apply OCTANE 2% SC Herbicide at rates of 0.7 to 1.5 fluid ounces per acre (0.0009 to 0.0020 lb ai/acre) in tank mix combinations with herbicides registered for use such as amines, esters, and salts of 2,4-D, chloroprop, dicamba, mecoprop, MCPA, triclopyr, fluroxypyr, and various combination of these products for control of broadleaf annual weeds and perennial weeds listed in <i>Broadleaf Weeds Controlled</i> . Residual, long-term control of the target weeds is as defined by the labeling of the companion product. For tank mixing with herbicides follow the tank mix directions.	

Backpack Sprayer Dosage Chart

For use in backpack sprayers having tank capacity of 3 to 5 gallons, accurate calibration and measurement of the appropriate amount of product is important to deliver the desired rate of OCTANE 2% SC Herbicide. Use the chart below to determine the quantity of OCTANE 2% SC Herbicide to be added to a backpack sprayer having a capacity of 3 to 5 gallons to equal a 1.5 fl. oz./A (0.0020 lb ai/A) rate.

Backpack tank capacity (gallons)	Spray volume (gallons/A)	fluid oz Octane 2% SC per tank for 1.5 fl. oz./A	ml Octane 2% SC per tank for 1.5 fl. oz./A
3	20	0.23	6.6
	30	0.15	4.4
	40	0.11	3.3
4	20	0.30	8.9
	30	0.20	5.9
	40	0.15	4.4
5	20	0.38	11.1
	30	0.25	7.4
	40	0.19	5.5

Formula

$$\text{Fluid oz OCTANE 2\% SC to add to sprayer tank} = \frac{\text{Application rate} \times \text{Sprayer tank capacity}}{\text{Spray volume}}$$

Example Calculation for 4 gallon sprayer tank capacity

$$\text{Fluid oz OCTANE 2\% SC to add to sprayer tank} = \frac{1.5 \text{ fl. oz./A} \times 4 \text{ gallon}}{30 \text{ gallons/A}} = 0.20 \text{ fl. oz.}$$

where: Application rate = 1.5 fl. oz./A
 Sprayer tank capacity = 4 gallon
 Spray volume = 30 gallons/A

For smaller volume sprayers less than three (3) gallons in size, measure 0.03 to 0.07 fl. oz. (1 to 2.1 ml) of OCTANE 2% SC Herbicide per one (1) gallon of water when tank mixing with other herbicides to equal a 1.5 fl. oz./A (0.0020 lb ai/A) rate. For specific measurements based on spray volume (gallons/A), see the table below.

Spray Volume (gallons/A)	fluid oz Octane 2% SC per gallon water for 1.5 fl. oz./A	ml Octane 2% SC per gallon water for 1.5 fl. oz./A
20	0.07	2.1
30	0.05	1.4
40	0.03	1.0

Formula

$$\text{Fluid oz OCTANE 2\% SC per gallon for 1.5 fl.oz./A} = \frac{\text{Application rate} \times \text{Sprayer tank capacity}}{\text{Spray volume}}$$

Example Calculation for 1 gallon sprayer tank capacity

$$\text{Fluid oz OCTANE 2\% SC to add to sprayer tank} = \frac{1.5 \text{ fl. oz./A} \times 1 \text{ gallon}}{30 \text{ gallons/A}} = 0.05 \text{ fl. oz.}$$

where: Application rate = 1.5 fl. oz./A
 Sprayer tank capacity = 1 gallon
 Spray volume = 30 gallons/A

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

Pesticide Storage: Store in original container, and keep tightly closed when not in use. Store in a cool, dry place. **Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling:

[Nonrefillable plastic container (Less than 5 gallons)] Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then 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.

IMPORTANT: READ BEFORE USE

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