

Musketeer®

Turf Growth Regulator

SPECIMEN



For growth management and quality improvement of turfgrasses on golf courses.

Active Ingredients

flurprimidol: α -(1-methylethyl)- α -[4-(trifluoromethoxy)phenyl]-5-pyrimidinemethanol.....	5.6%
paclobutrazol: (\pm)-(R*,R*)- β -[[4-chlorophenyl)methyl]- α -(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol.....	5.6%
trinexapac-ethyl: 4-(cyclopropyl-alpha-hydroxymethylene)-3,5-dioxo-cyclohexanecarboxylic acid ethyl ester.....	1.4%
Other Ingredients	87.4%
TOTAL	100.0%

Contains 0.44 pounds of flurprimidol per gallon of product.

Contains 0.44 pounds of paclobutrazol per gallon of product.

Contains 0.11 pounds of trinexapac-ethyl per gallon of product.

Keep Out of Reach of Children

WARNING / AVISO

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

SPECIALTY CHEMICAL: Do not ship or store with food, feeds, drugs or clothing.

Refer to inside of label booklet for additional precautionary information and Directions for Use, including Storage and Disposal.

Notice: Read the entire label before using. Use only according to label directions. **Before buying or using this product, read Warranty Disclaimer and Misuse statements inside label booklet. If terms are unacceptable, return at once unopened.**

©Musketeer is a registered trademark of SePRO Corporation
SePRO Corporation 11550 North Meridian Street, Suite 600
Carmel, IN 46032 U.S.A.

EPA Reg. No. 67690-57

FPL20170402

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

WARNING. Causes substantial but temporary eye injury. Harmful if swallowed. Avoid contact with skin or clothing.

Do not get in eyes or on clothing. Wear protective eyewear such as goggles, face shield, or safety glasses. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Keep Out of Reach of Children

WARNING / AVISO

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

FIRST AID

If in eyes	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.• Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
If swallowed	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything by mouth to an unconscious person.
If on skin or clothing	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15 to 20 minutes.• Call a poison control center or doctor for treatment advice.
If inhaled	<ul style="list-style-type: none">• Move person to fresh air.• If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably mouth-to-mouth, if possible.• Call a poison control center or doctor for further treatment advice.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call **INFOTRAC** at **1-800-535-5053**.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category B or C on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants;
- Shoes plus socks;
- Chemical-resistant gloves (such as butyl rubber or barrier laminate \geq 14 mls); and
- Protective eyewear.

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. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS

Users should:

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

ENVIRONMENTAL HAZARDS

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

Ground Water Advisory:

This pesticide has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory:

This product is classified as having potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs, will reduce the potential loading of flurprimidol from runoff and sediment.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all directions for use carefully before applying. Use only according to label directions.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170).

The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter treated area without footwear until sprays have dried.

IN CASE OF EMERGENCY

In case of large-scale spillage regarding this product, call INFOTRAC at 1-800-535-5053.

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- INFOTRAC: 1-800-535-5053

Steps to be taken in case material is released or spilled:

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

Avoiding Injurious Spray Drift

Apply only when there is little or no hazard for spray drift. Very small quantities of spray, which may not be visible, may seriously injure susceptible plants. Do not spray when wind is blowing toward desirable susceptible crops or ornamental plants near enough to be injured. Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

Product Information for Growth Regulation of Perennial Turfgrasses

Musketeer Turf Growth Regulator ("Musketeer") integrates patented† synergy of turf growth regulator technology for use on perennial turfgrasses on golf courses. It reduces stem elongation and leaf blade length in perennial turfgrasses resulting in a more compact and dense growth form. Growth regulation results from suppression of the plant hormone, gibberellic acid (GA), responsible for cell elongation in most plants.

Musketeer's patented site of action plant growth regulator (PGR) synergy results in growth suppression, improved turfgrass color and quality, extended spray intervals, and suppression of *Poa annua*. Plant physiological advantages to applications of this product include:

1. Multiple plant sites of uptake: Musketeer is absorbed by plants via roots, stems, and leaves; and
2. Multi-site activity within gibberellic acid (GA) biosynthesis pathway: Musketeer inhibits GA production at both early and late stages in the pathway.

Product absorption via the roots and foliage allows for more efficient uptake by the plant ensuring an optimal amount of active ingredient is available for GA inhibition. Additionally, blocking GA biosynthesis early and late in the biological pathway regulates GA more efficiently than at a single site within this cycle.

†**The synergy derived from the combination of Type II Class A and Type II Class B PGRs is protected by United States Patent No. 7,135,435. Additional patent rights pending.**

Apply broadcast treatments to medium to high quality turfgrass areas. Follow an appropriate fertility program for the desired turf species, in conjunction with this product's applications, to provide the best turfgrass enhancement and reduce potential for discoloration.

Benefits of Musketeer Applications to Turfgrass

- Shoot growth suppression of warm and cool season turfgrasses resulting in decreased mowing frequency and turfgrass clippings.
- Increased turfgrass density, wear resistance, and improved color on warm and cool season turfgrass species resulting in improved turf quality.
- Reduction of *Poa annua* (annual bluegrass) populations in cool-season turfgrasses.
- Improved water use efficiency of warm and cool season turfgrass resulting in pre-drought stress conditioning.

NOTICE TO USER: Turfgrass responses to this product may vary within turfgrass species due to the large number of cultivars and varieties available. Neither the manufacturer nor seller has determined if this product can be used safely or effectively on turfgrass species not mentioned on this label. For turfgrass species not listed on this label the user should apply product to a small test area to determine growth response and desired level of growth regulation prior to large scale applications.

Use Restrictions for Perennial Turfgrasses

- DO NOT use on turf being grown for sale or other commercial use as sod, or for commercial seed production or for research purposes.
- DO NOT use on residential lawns.
- DO NOT apply to bermudagrass putting greens or overseeded bermudagrass putting greens.
- DO NOT apply to shrubs, bedding plants, and/or food plants.
- NOT for use on turfgrasses under stress due to temperature and moisture extremes and disease, and/or insect pressures.
- DO NOT apply until 6 to 8 weeks after turfgrass sprigging or laying sod. Turfgrass must be well established and actively growing prior to application.
- DO NOT apply to saturated soils or when a significant moisture event is anticipated.
- DO NOT apply to areas where *Poa annua* is the desired turfgrass species or areas containing greater than 80% *Poa annua*.
- DO NOT apply to turf used for livestock production.
- Multiple applications can be made annually, but do not apply more than 40 fl oz/A of product for any single application, and more than 580 fl oz/A of product per year.
- **Chemigation:** Do Not apply through any type of irrigation system.
- **New York:** For any Musketeer application greater than 30 fl oz/A, a minimum interval of 21 days is required between repeat applications.

Use Precautions for Perennial Turfgrasses

- Delay applications to newly seeded turfgrasses until turf is well established and actively growing.
- Application of an oxadiazon-based preemergence product should be spaced at least 4 weeks apart from Musketeer application on putting greens.
- Additional turfgrass growth regulation may occur when product is tank mixed or used in conjunction with demethylation inhibitor (DMI) or sterol inhibiting fungicides.

Application Timing

Apply Musketeer to actively growing turfgrass. Make Spring applications after resumption of active seasonal growth of turfgrass. Schedule the final application of the season a minimum of 4 weeks before the onset of inactive grass growth or winter dormancy. To avoid delayed Spring transition of bermudagrass, apply to overseeded turfgrasses in dormant bermudagrass stands at least 4 weeks prior to expected bermudagrass green-up.

Irrigation

Apply when rainfall is not expected, or irrigation can be delayed, for at least 2 hours after application or until product has dried on the leaf surface. For best results, subsequent rainfall or irrigation should occur within 24 hours after application. Avoid mowing treated turfgrass areas until after rainfall or irrigation occurs.

Turf Color and Post Treatment Turf Management

Treated turfgrass may appear darker green in color. This color change, which appears 1 to 2 weeks after treatment, may persist an additional 3 to 6 weeks. Manage treated areas to encourage the growth of a healthy vigorous turf.

Application Directions

Mixing Directions

Add Musketeer to a spray tank half filled with clean water while agitating. Allow sufficient mixing time to ensure consistent mixing. Finish filling the spray tank. Continue agitation throughout the spraying operation to ensure uniform application. Product should be applied using a boom-type sprayer with bypass and/or mechanical agitation calibrated to deliver 20 to 100 gallons/acre of spray solution (0.5 to 2.5 gallons/1,000 ft²). In-line strainers and nozzle screens should be 50 mesh or larger. The use of a coloring agent or foam to mark areas already sprayed is suggested for uniform application without skips and overlaps. Performance may be improved with the addition of a readily available nitrogen (N) source at 0.125 to 0.5 lbs N/1,000 ft² or iron (Fe) at suggested label rates to the spray mix.

Musketeer + Tank Mixtures

Musketeer can be tank mixed and is compatible with most commonly-used pesticides and foliar nutrient products. However, test compatibility of this product with tank mix partners before use.

NOTE: Test the compatibility of this product in any tank-mix combination 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 quart 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 sequence for adding required ingredients to the spray tank.

Read and follow all label directions for each tank-mix product.

GROWTH REDUCTION OF PERENNIAL TURFGRASS SPECIES

A multiple application program using this product provides growth reduction of perennial turfgrass species resulting in decreased mowing frequency and

turfgrass clippings. For cool-season grasses, begin initial applications in early spring following resumption of active growth. For warm-season grasses, begin initial applications when the grass has completely recovered from winter dormancy and is growing vigorously. For both warm and cool-season grasses, discontinue applications a minimum of 4 weeks before the onset of inactive grass growth or winter dormancy. Use lower rate range in early spring and late fall applications to avoid excessive growth regulation. Refer to Table 1 for rates for growth regulation of perennial turfgrass species.

- o **Bentgrass Greens with more than 50% *Poa annua* (Annual Bluegrass):** Apply Musketeer to bentgrass as part of an overall greens management program both for growth regulation and *Poa annua* suppression. Start with initial application of Musketeer at 12 to 15 fl. oz./A in the spring months after bentgrass greens are growing vigorously and have been mowed 3 or 4 times. Repeat applications of 12 to 18 fl. oz./A of Musketeer at 2 to 4 week intervals through early fall.

- **Kentucky bluegrass, Perennial ryegrass mixtures**

Apply Musketeer for *Poa annua* suppression in fairway height Kentucky bluegrass and perennial ryegrass mixtures at a rate of 18 to 30 fl. oz./A in early spring following resumption of active growth of the grass. Repeat applications at 18 to 36 fl. oz./A at 2 to 6 week intervals until late summer or early fall. Reduced rates should be considered in Kentucky bluegrass, perennial ryegrass mixtures with high populations of *Poa annua* or when temporary *Poa annua* discoloration cannot be tolerated. Normal management practices such as fertilization, aeration and interseeding/overseeding will encourage growth of bluegrass and/or ryegrass.

- **Perennial ryegrass**

Apply Musketeer for *Poa annua* suppression in fairway height perennial ryegrass at a rate of 20 to 30 fl. oz./A in early spring following resumption of active growth of the grass. Repeat applications of Musketeer at 20 to 40 fl. oz./A at 2 to 6 week intervals until late summer or early fall. Reduced rates should be considered in perennial ryegrass with high populations of *Poa annua* or when temporary *Poa annua* discoloration cannot be tolerated. For bermudagrass fairways overseeded with perennial ryegrass delay applications until perennial ryegrass is well established (4 weeks after germination). To avoid delayed spring green-up of bermudagrass, conduct the final spring application a minimum of 4 weeks prior to expected bermudagrass green-up. Normal management practices such as fertilization, aeration and interseeding/overseeding will encourage growth of perennial ryegrass.

Turfgrass Species	Early Spring/Late Fall Applications	Repeat Applications	
	Rate of Musketeer (fl. oz./A) ^{2,3}	Rate of Musketeer (fl. oz./A) ²	Treatment Interval
Cool-Season Turfgrasses			
Bentgrass (golf course fairway)	18 – 30	18 – 36	2 to 6 weeks
Bentgrass putting greens	12 – 18	12 – 22	2 to 4 weeks
Kentucky Bluegrass/ Perennial Ryegrass Mixture	18 – 30	18 – 36	2 to 6 weeks
Perennial Ryegrass ¹	20 – 30	20 – 40	2 to 6 weeks
Warm-Season Turfgrasses			
Hybrid Bermudagrass ⁴	15 – 30	20 – 30	2 to 6 weeks

¹ For perennial ryegrass overseeded fairways, delay applications until perennial ryegrass is well established (3 to 4 weeks after germination). To avoid delayed spring green-up of bermudagrass, conduct final spring application a minimum of 4 weeks prior to expected bermudagrass green-up.

² Utilize higher rates in the rate range for perennial turfgrass species maintained at higher mowing heights.

³ Use lower rate ranges during early spring or late fall when turfgrass growth and vigor are reduced.

⁴ Initiate applications in the spring after the turf has fully greened up and recovered from dormancy. Discontinue applications approximately 1 month before the onset of winter dormancy.

POA ANNUA (ANNUAL BLUEGRASS) CONVERSION TO PERENNIAL TURFGRASSES

A growth regulation program using Musketeer provides *Poa annua* suppression and cool season turf conversion. This program provides a gradual perennial grass conversion reducing *Poa annua* populations over one to several growing seasons. Temporary initial discoloration of *Poa annua* is possible with higher rates of this product, especially during temperature extremes. To maximize seedling establishment during interseeding or overseeding practices, delay applications for 14 days prior to and/or after date of seeding. Refer to Table 2 for rates for *Poa annua* suppression in cool-season turfgrasses.

- **Bentgrass (golf course fairway)**

Apply Musketeer for *Poa annua* suppression in fairway height bentgrass at a rate of 18 to 30 fl. oz./A in early spring following resumption of active growth of the grass. Apply repeat applications of 18 to 36 fl. oz. product/A at 2 to 6 week intervals until late summer or early fall. Reduced rates should be considered in bentgrass fairways with high populations of *Poa annua* or when temporary *Poa annua* discoloration cannot be tolerated. Normal management practices such as fertilization, aeration and interseeding/overseeding will encourage growth of bentgrass.

- **Bentgrass Putting Greens**

Annual turfgrass species, such as *Poa annua* are more strongly regulated by applications of Musketeer, often resulting in transitory yellowing or temporary discoloration. Therefore, reduced rates of Musketeer should be used on bentgrass putting greens with high populations of *Poa annua* (>50%) or when temporary *Poa annua* discoloration cannot be tolerated. Over time, programmed applications throughout the growing season will suppress *Poa annua* populations, resulting in increased populations of bentgrass. Follow normal management practices such as fertilization, aeration and interseeding/overseeding that encourages growth of bentgrass. Use of Musketeer on bentgrass greens may increase putting speed without reducing the height of cut.

- o **Bentgrass Greens with less than 50% *Poa annua* (Annual Bluegrass):**

Apply Musketeer to bentgrass as part of an overall greens management program both for growth regulation and *Poa annua* suppression. Start with initial application of Musketeer at 12 to 18 fl. oz./A in the spring months after bentgrass greens are growing vigorously and have been mowed 3 or 4 times. Repeat applications of 12 to 22 fl. oz./A of Musketeer at 2 to 4 week intervals through early fall.

Turfgrass Species	% <i>Poa annua</i>	Initial spring application ¹	Repeat applications ¹	
		Rate of Musketeer (fl. oz./A)	Rate of Musketeer (fl. oz./A)	Treatment Interval
Bentgrass (golf course fairway)	0 - 80%	18 – 30	18 – 36	2 to 6 weeks
Bentgrass Putting Greens	< 50%	12 – 18	12 – 22	2 to 4 weeks
Bentgrass Putting Greens	> 50%	12 – 15	12 – 18	2 to 4 weeks
Kentucky Bluegrass/ Perennial Ryegrass Mixture	0 - 80%	18 – 30	18 – 36	2 to 6 weeks
Perennial Ryegrass ²	0 - 80%	20 – 30	20 – 40	2 to 6 weeks

¹ Apply in early spring following resumption of active growth of the grass.

Discontinue fall applications 4 weeks before the onset of inactive grass growth or winter dormancy.

² For perennial ryegrass overseeded fairways, delay applications until perennial ryegrass is well established (4 weeks after germination).

Dollar Spot (*Sclerotinia homoeocarpa*) Suppression in Creeping Bentgrass

Two of the active ingredients in Musketeer are structurally similar to pyrimidine and triazole fungicides that provide Dollar Spot control. Programmed applications of Musketeer for turf growth suppression or *Poa annua* conversion have also been shown to suppress Dollar Spot incidence in creeping bentgrass fairways, greens and tees. Research results have shown Musketeer applications at labeled rates and application intervals can significantly reduce Dollar Spot incidence and populations when compared to untreated control plots. Musketeer must not be used to replace labeled fungicides for the control of Dollar Spot; rather programmed use of Musketeer may result in longer or improved control of Dollar Spot in conjunction with conventional fungicides, or delays in the appearance of Dollar Spot disease, thus leading to the potential for an overall reduction in annual fungicide use.

STORAGE AND DISPOSAL

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

Pesticide Storage: Keep from freezing. Store in original container only. Do not store near feed or foodstuffs.

In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

Pesticide Disposal: Wastes resulting from use of this product may be used according to label directions or disposed of at an approved waste disposal facility.

Container Handling

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

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

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

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

Warranty Disclaimer: SePRO Corporation warrants that this product conforms to the chemical description on the product label. Testing and research have also determined that this product is reasonably fit for the uses described on the product label. To the extent consistent with applicable law, SePRO Corporation makes no other express or implied warranty of fitness or merchantability nor any other express or implied warranty and any such warranties are expressly disclaimed.

Misuse: Federal law prohibits the use of this product in a manner inconsistent with its label directions. To the extent consistent with applicable law, the buyer assumes responsibility for any adverse consequences if this product is not used according to its label directions. In no case shall SePRO Corporation be liable for any losses or damages resulting from the use, handling or application of this product in a manner inconsistent with its label.

For additional important labeling information regarding SePRO Corporation's Terms and Conditions of Use, Inherent Risks of Use and Limitation of Remedies, please visit <http://seprolabels.com/terms> or scan the image below.



©Copyright 2017 SePRO Corporation

®Musketeer is a registered trademark of SePRO Corporation



SePRO Corporation
11550 North Meridian Street, Suite 600
Carmel, IN 46032 U.S.A.