

100-1014

10/19/2006

1/22



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OCT 19 2006

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Patrick McCain
Syngenta Crop Protection, Inc.
P.O. Box 18300
Greensboro, NC 27419-8300

SUBJECT: Application for Amended Registration
Paclobutrazol 2SC
EPA Reg. No. 100-1014
Your Resubmission Dated September 11, 2006

Dear Mr. McCain:

The amended labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act as amended is acceptable provided the following change is made:

1. On page 10 in the Program Scheduling section, second paragraph, second line, the sentence should read "apply an appropriate control product at its recommended rate...."

Submit one copy of your final printed labels before you release the product for shipment.

If you have any questions regarding this correspondence, contact Rose Kearns of my staff by phone at 703-305-5611 or via email at kearns.rosemary@epa.gov or myself at 703-308-9443 or via email at kish.tony@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Tony Kish".

Tony Kish
Product Manager (22)
Fungicide Branch
Registration Division (7505P)

Enclosure

2/22

PACLOBUTRAZOL 2SC

PLANT GROWTH REGULATOR FOR TURFGRASS & TREES

Active Ingredient:

Paclobutrazol

(±)-(R*,R*)-beta-[(4-chlorophenyl)methyl]-alpha-(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol 22.3%

Other Ingredients: 77.7%

Total: 100.0%

Contains 2 lbs. active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-1014

EPA Est.

Product of the United Kingdom
Formulated in the USA

ACCEPTED
with COMMENTS
In EPA Letter Dated
OCT 19 2006

**Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.**
100-1014

Net Contents / U.S. Standard Measure

| FIRST AID | |
|---|--|
| If swallowed | <ul style="list-style-type: none"> • Call 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 the 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 15-20 minutes. • Call a poison control center or doctor for treatment advice. |
| If in eyes | <ul style="list-style-type: none"> • 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 treatment advice. |
| Have the product container or label with you when calling a poison control center or doctor or going for treatment. | |
| HOTLINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) Call 1-800-888-8372 | |

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing.

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 F on an EPA chemical resistance category selection chart.

4/22

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate or butyl rubber or nitrile rubber or viton
- Shoes plus socks

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

| |
|--|
| <p>User Safety Recommendations</p> <p>Users should:</p> <ul style="list-style-type: none">• Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.• Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.• Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. |
|--|

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 by cleaning of equipment or disposal of equipment washwaters.

Physical or Chemical Hazards

Do not use or store near heat or open flame.

5/22

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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

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

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

~~To the extent permitted by law, in no event shall SYNGENTA or Seller shall not. It is the intention of SYNGENTA and Seller that in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product.~~ **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and of Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

6/22

DIRECTIONS FOR USE

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

FAILURE TO FOLLOW THE USE DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN PLANT INJURY OR POOR DISEASE CONTROL.

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 and 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, 40CFR 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). 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.

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
- Chemical-resistant gloves such as barrier laminate or butyl rubber or nitrile rubber or viton
- Shoes plus socks

STORAGE AND DISPOSAL

Restrictions:

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty containers.

7/02

Pesticide Storage

Keep container closed when not in use. Do not store near food or feed. Protect from freezing. In case of spill or leak on floor or paved surfaces, soak up with sand, earth or synthetic absorbent. Remove to chemical waste area.

Pesticide Disposal

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

Container Disposal

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

TURF

GENERAL INFORMATION

Paclobutrazol 2SC is a plant growth regulator for turfgrass that slows grass growth for up to ~~three~~ two months after application. The frequency of mowing can be reduced by up to 50% during the period of effective retardation. ~~Used alone, Paclobutrazol 2SC will not prevent seedhead production, and tank mixture for a spray program using an appropriate seedhead control agent (Embark[®]) is required in situations where seedhead visibility is a problem.~~ Use of Paclobutrazol 2SC on fine turf should be accompanied by moderate-to-high fertility to maintain turfgrass appearance and reduce discoloration. Growth and development of some grasses (e.g. *Poa annua*) can be more retarded than others significantly reduced, leading to selective control after prolonged use in mixed populations.

What Applications of Paclobutrazol 2SC to Turfgrasses Provide

- Slowed vertical growth and reduced mowing for 6 to 8 weeks on established hybrid bermudagrass, bentgrass and perennial ryegrass fairways, tees and roughs, and on St. Augustinegrass and Kentucky bluegrass/perennial ryegrass turf areas (use reduced rates on bentgrass and overseeded bermudagrass greens.
- Improved and extended fertilizer performance for up to 12 weeks when combined with a nitrogen fertilizer while improving turfgrass quality versus fertilizer alone.

8/22

- Reduced potential for scalping of all turfgrass areas.
- Better ball playability on hybrid bermudagrass due to increased turf density and tighter-knit turf areas.
- Suppression of *Poa annua* by reducing its growth and competitive ability.

When to Use for Growth Suppression of Warm-Season Grasses

Use anytime when established hybrid bermudagrass and St. Augustinegrass are green, actively growing and have recovered from dormancy (filled in fully following winter).

When to Use for Growth Suppression of Cool-Season Grasses and ~~Poa annua~~

Apply in spring after green-up and after turf has been mowed once or twice. Apply at least 1 month before onset of high air temperatures. In late summer/early fall, apply at least 1 month before anticipated first killing frost.

When to Use for *Poa annua* Suppression

Apply when the *Poa annua* is actively growing. In moderate climates the application timing may be fall through late spring. In Northern climates, spring and fall timings are recommended. In climates with a prolonged winter dormancy, fall applications can be made up to one month prior to anticipated first killing frost. Repeat application should be made as part of a *Poa annua* suppression program.

When to Use for Color and Quality Enhancement of Winter Overseeded Turf and *Poa annua* Suppression

Apply anytime after overseeded turf has successfully established itself (cool-season turf species should be near 85% of turf composition). Do not apply after March 15th to putting greens to avoid delay in bermudagrass green-up. Moderate soil moisture conditions should be present before and after application to achieve best regulating effect.

USE DIRECTIONS

Apply treatment solution uniformly to turf. For best results, apply 0.25 inch of water within 24 hours after application to remove product from foliage and onto soil surface.

Apply with standard pressurized spray application equipment with by-pass or mechanical agitation using strainer screens of 50 (or coarser) mesh. Product should be added during filling of applicator tank. When tank is allowed to stand, vigorous agitation should be used to assure material suspension before application.

9/22

Apply Paclobutrazol 2SC to turf in sufficient amount of water (minimum 1 gallon treatment solution per 1,000 sq. ft. = 43.5 gal/acre) to ensure uniform coverage. For best results, use 2 to ~~5~~ 3 gallons of water per 1,000 sq. ft. A color agent or other marking device is advised to avoid skipping and/or overlapping.

Treatment Coverage Chart¹

| Rate of Active Ingredient per Acre | Fluid Ounces of Product per Acre |
|------------------------------------|----------------------------------|
| 0.10 lbs. a.i./A | 6.4 oz. |
| <u>0.16 lbs. a.i./A</u> | <u>10.0 oz.</u> |
| 0.25 lbs. a.i./A | 16.0 oz. |
| 0.50 lbs. a.i./A | 32.0 oz. |
| 0.75 lbs. a.i./A | 48.0 oz. |

1 Product should be mixed with minimum 1 gal water/1,000 sq. ft. Use 2 to ~~5~~ 3 gals/1,000 sq. ft. for best results.

Specific Rates

| Warm Season Grasses | Cool Season Grasses ¹ (except putting greens) | Bentgrass Putting Greens & Overseeded Bermuda | <u>Overseeded Bermudagrass</u> |
|-------------------------------|--|---|---------------------------------|
| 0.50 lbs a.i./A (sandy soils) | 0.25 to 0.50 lbs. a.i./A | 0.10 to 0.25 lbs. a.i./A | <u>0.10 to 0.16 lbs. a.i./A</u> |
| 0.75 lbs a.i./A (clay soils) | | | |

¹ Reduce application rate by 50% if *Poa annua* is a significant portion of turfgrass population (greater than 50%).

Apply 0.5 to 0.9 lbs. nitrogen/1,000 sq. ft. of a non-burning fertilizer product on warm and cool season grasses. Apply 0.25 to 0.5 lbs. nitrogen/1,000 sq. ft. on bentgrass greens and overseeded bermudagrass.

Results to Expect from Application of Paclobutrazol 2SC

When applied as directed, vertical growth of turf will be slowed within 3-10 days, resulting in reduced mowing frequency for a 6- to 8-week period. Following applications, turf will gradually undergo increased greening and density, which may persist up to 12 weeks.

Following application of product, weed populations should not be any greater than on untreated turf, although weed visibility may be higher on regulated turf.

10/22

Growth and competitive ability of *Poa annua* will be reduced within 1 to 2 weeks after application; regulation will last 3 to 8 weeks. Turfgrass shoots and leaves tissue will become discolored for 3 to 8 weeks following onset of growth regulation. With proper fertilization, desired turfgrasses will be stimulated to crowd out weakened *Poa annua*.

As density of treated fairways increases due to altered growth habit, ball playability may improve, causing ball to sit higher on turf. This result is most evident on hybrid bermudagrass.

Seedhead formation will not be prevented. Seedheads should be mowed off as they grow above turf cutting height to maintain a desirable-looking turf.

Excessive irrigation and/or nitrogen fertilization may shorten period of growth regulation.

Regulator response will vary somewhat according to turf variety. For St. Augustinegrass, Bitter Blue will be the most responsive and Floratam the least responsive.

HYBRID BERMUDAGRASS

| Cultivar | Sensitivity/Activity | Period of Growth Regulation | Period of Color Response |
|--------------|----------------------|-----------------------------|--------------------------|
| Tifway I, II | Medium/Good | 5 - 6 weeks | 6 - 8 weeks |
| Tifgreen | High/Excellent | 6 - 8 weeks | 8 - 10 weeks |
| Ormond | High/Excellent | 6 - 8 weeks | 8 - 10 weeks |

ST. AUGUSTINEGRASS

| Cultivar | Sensitivity/Activity | Period of Growth Regulation | Period of Color Response |
|-----------------------------|----------------------|-----------------------------|--------------------------|
| Floratam | Low/Moderate | 4 - 8 6 weeks | 5 - 8 weeks |
| Floralawn | Low/Moderate | 4 - 8 6 weeks | 5 - 8 weeks |
| Floratine | Medium/Good | 6 - 7 weeks | 7 - 8 weeks |
| Raleigh, Texas Common | Medium/Good | 6 - 7 weeks | 7 - 8 weeks |
| Bitter Blue, Seville | High/Excellent | 7 - 8 weeks | 8 - 10 weeks |

Program Scheduling

If crabgrass or other annual grassy weeds have been a problem in the past, an application of the appropriate preemergence weed control product should be made before the use of Paclobutrazol 2SC. Space the applications of Paclobutrazol 2SC and oxadiazon-based preemergence products ~~(Crabgrass/Grassgrass Preventer)~~ at least 4 weeks apart on putting greens.

If a weed, disease or insect problem occurs after application of Paclobutrazol 2SC, apply an appropriate control product at recommended rate. Paclobutrazol 2SC is compatible with most existing control products. Use of Paclobutrazol 2SC in combination with fungicides containing propiconazole, fenarimol, triadimefon, and myclobutanil can result in increased growth inhibition of *Poa annua* on putting greens.

For Growth Regulation

Repeat applications can be made within the same growing season as long as the turf is actively growing. ~~may be made, but no sooner than 8 weeks following initial application.~~ Turfgrass species and growth rate will dictate rate and timing of applications. Do not make more than 3 applications per calendar year. Do not apply more than 4 quarts per acre per year (2 lbs. ai/A).

For *Poa annua* Suppression

Paclobutrazol 2SC will suppress the growth and competitive ability of *Poa annua*. Apply when *Poa annua* is actively growing at 16 to 32 ounce per acre. Lower rates and more frequent applications can be made if *Poa annua* discoloration cannot be tolerated. However, only moderate *Poa annua* suppression may be achieved. Do not apply more than 4 quarts per acre per year (2 lbs. ai/A).

For Color, Quality Enhancement, and *Poa annua* Suppression in Overseedings

On bentgrass greens and overseeded bermudagrass greens, repeat applications can be made as long as the turf is actively growing 4 to 6 weeks apart. Do not make more than 4 applications per calendar year. Do not apply more than 4 quarts per acre per year (2 lbs. ai/A). Apply to overseeded turf when seed has established and turf composition is near 85% of the cool season species.

Do not apply to overseeded bermudagrass greens after March 15th to avoid delay of spring greenup of dwarf-type bermudagrass.

Do not aerify or topdress and drag greens with steel mats while under growth regulation.

Do not seed within 6 weeks prior to or 2 weeks after application of Paclobutrazol 2SC.

12/22

If Embark is used for *Poa annua* seedhead control, apply this product **at least** 14 days after application of Embark.

GENERAL PRECAUTIONS

Not for use on bermudagrass putting greens except for winter overseeding enhancement use.

Not for use on athletic fields under heavy traffic where maximum growth potential of turf is desired.

Not for use on shrubs, flowers, fruits, or vegetable plants (applications to turf areas under trees will not affect/harm trees).

Do not use during periods of extreme dry or cold weather conditions, or during heavy insect or disease activity.

Do not apply product when soil is already saturated. Heavy rainfall or irrigation in the treated areas may cause active ingredient to move laterally on slopes and collect in low areas. These areas may undergo more severe growth control for a longer period of time.

Do not use on areas containing greater than 70% *Poa annua*, since discoloration of *Poa* may be unacceptable.

Delay treatment of newly-sodded or sprigged turf until grass has knitted down and rooted firmly.

Delay sprigging for at least 4 weeks and sodding at least 2 weeks after application is made.

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

Withhold application on large turf areas that have been thinned from winter drainage, disease, or insects until desired fill-in is achieved.

Assure that dosage rates are measured accurately since rates greater than those recommended may cause undesirable turf growth control and may discolor areas temporarily.

Shake container thoroughly before use.

For best residual activity, Paclobutrazol 2SC should be removed from leaf surfaces by irrigation or rainfall prior to mowing.

13/22

~~Do not mow treated grass for at least three days following application.~~

Broadleaf weeds are not significantly affected by Paclobutrazol 2SC. To control the growth of weeds, treat with an appropriate herbicide when weeds are actively growing. Carefully follow label directions.

Do not use on areas to be cultivated for food or food crops or to be resown with grasses within two years of treatment.

Do not apply more than 4 qts. per acre per year (2 lbs. ai/A).

Do not graze treated areas or harvest for forage or hay.

TREES

GENERAL INFORMATION

Paclobutrazol 2SC is a xylem mobile plant regulator that slows vegetative growth as well as creating other physiological effects by inhibiting gibberellin biosynthesis. Paclobutrazol 2SC reduces the above ground vegetative growth and changes specific morphological characteristics of the plant. Paclobutrazol 2SC is most effective when applied to the soil near the base of the tree either by soil injection or with basal soil drench.

Paclobutrazol 2SC can be used on listed trees found in such areas as urban environments, utility rights-of-way, residential areas and other non-crop areas.

Characteristics of results in the tree:

The activity of Paclobutrazol 2SC occurs following root uptake and xylem translocation throughout the tree canopy. This occurs within a few weeks, although maximum growth inhibition Results may not be fully visible for up to 18 months following application. Initial effects of Paclobutrazol 2SC may be observed as intense greening of the foliage with no phytotoxicity. Trees treated with Paclobutrazol 2SC will exhibit shorter internodes, a reduction in the diameter growth of the main stem wood, thicker leaf cuticles, and an increase in fine root growth in some species. Smaller leaf size and enhanced flowering may also be observed in some species.

GENERAL PRECAUTIONS

- Apply at recommended rates and follow safety procedures.
- Trees not used for food production and that are not specifically listed on this label may be treated if all other label directions are followed.
- Local soil and environmental conditions can affect the degree and longevity of effect following application of Paclobutrazol 2SC. Follow label instructions to increase effectiveness depending on these factors.

14/22

- Do not reapply Paclobutrazol 2SC until symptoms from the previous applications begin to disappear, or within 3 years of the last application, whichever comes first.
- For hard-to-wet soils, the mobility of Paclobutrazol 2SC can be enhanced by using a nonionic, organosilicone surfactant.
- Trees growing in heavily compacted soils may need to be vertical mulched or soil aerated for Paclobutrazol 2SC to effectively promote root growth.
- Basal drench and soil injection application of Paclobutrazol 2SC may result in localized, temporary discoloration of turfgrass immediately adjacent to the treatment site.
- Avoid basal drench applications on slopes or other areas where Paclobutrazol 2SC or treated soil may be washed away from the base of the tree by rainfall or irrigation.
- Treatment of trees bordered by shrubs and/or herbaceous ornamentals may cause these plants to be affected if their roots extend into the treatment zone.
- Do not treat sugar maple trees or any other trees that are or could be tapped for sugar within one year of application.
- Do not treat nut or fruit trees that will be harvested within one year of application.
- Do not treat trees that are severely stressed or rapidly declining
- Do not apply this product through any type of irrigation system.

APPLICATION METHODS

Paclobutrazol 2SC may be applied as a basal drench or by soil injection. Application should be made as close to the tree and the soil interface as possible to obtain the most consistent results.

Basal Drench

Apply the required dose (see Table 1 for rates based on tree size and species) ~~total m~~ ~~per acre to the application rate and tree size (DBH)~~ uniformly around the base of the tree at the point of contact between the soil and the tree trunk (Figure 1). The diluted mixture of Paclobutrazol 2SC may be carefully poured around the tree or an applicator that provides a controlled flow may be used. If there is potential for rainfall or irrigation to move the surface applied product to non-target plants, apply Paclobutrazol 2SC diluted mixture to the bottom of a shallow furrow around the base of the tree. After applying, refill the furrow with untreated soil.

Soil Injection

The diluted mixture of Paclobutrazol 2SC should be injected approximately 3-6 inches deep. Use injection equipment capable of delivery at 60-150 ~~100-200~~ psi. Injection orifices should be oriented to release the diluted product horizontally at the point of injection. The required dose should be divided evenly among injection sites spaced as uniformly as possible around the tree trunk. The injection sites should be positioned to release the Paclobutrazol 2SC diluted mixture as close as possible to the point of contact between the soil and the tree beneath the soil so that the active ingredient may

15/22

be readily absorbed by the tree (Figure 2). Injection sites should also be located next to buttress roots (Figure 2). For trees less than 6 inches DBH, use at least 4 evenly spaced injection sites per tree.

APPLICATION TIMING

Applications can be made throughout the year, weather permitting, except when the soil is frozen or saturated with water. Note: Paclobutrazol 2SC is absorbed by plant roots and translocated to the growing tissues in response to evaporative water loss (transpiration). If applications are made after fall leaf drop, uptake of Paclobutrazol 2SC will not occur until development of new leaves in the spring and resumption of evaporative water loss.

MIXING PROCEDURES

Refer to Table 1. When mixing large amounts of Paclobutrazol 2SC, use a suspension aid to improve suspension of the diluted mixture at a rate of approximately ½ pint to 2 pints per 100 gallons. Mix one quart of Paclobutrazol 2SC to make 3 gallons of diluted mixture. To improve suspension of the diluted mixture, the addition of a suspension aid at a rate of approximately ½ pint to 2 pints per 100 gallons is recommended. To re-suspend a solution that has settled, use 1 to 2 pints of a suspension aid per 100 gallons. Follow all label directions and precautions on the product label of the suspension aid.

If applying mixture to compacted soils, high clay content soils, or other hard-to-wet soils, use a nonionic, organosilicone wetting agent (surfactant) to increase penetration of the soil. Mix approximately ½ ounce surfactant per 3 gallons or 1 pint surfactant per 100 gallons. Follow all label directions and precautions on the product label.

16/22

Application Rates

| Application Rate Ranges for Diluted Mixture of Paclobutrazol 2SC for Treatment of Various Tree Species* | | |
|---|--|--|
| 10 to 100 ml (1-2 grams a.i.) Per inch DBH | 100 to 450 ml (2-6 grams a.i.) Per inch DBH | 450 to 2000 ml (3-4 grams a.i.) Per inch DBH |
| Australian Pine Dogwood Redwood Sweetgum | Basswood Beech Boxelder Eucalypt Catalpa Elm Hickory Horse Chestnut Linden Locust, Honey Maple Mountain Ash Olive - Russian Sassafras Walnut | Alder Fir Aspen Birch Bradford Pear Cedar, Red Cassey Black Cottonwood Eucalyptus Hackberry Locust, Black Magnolia Mulberry Oak Pines Poplar Redwood Sycamore Willow |

*For soils that are or soils with a high organic matter or clay content use the higher end of the range.

17/22

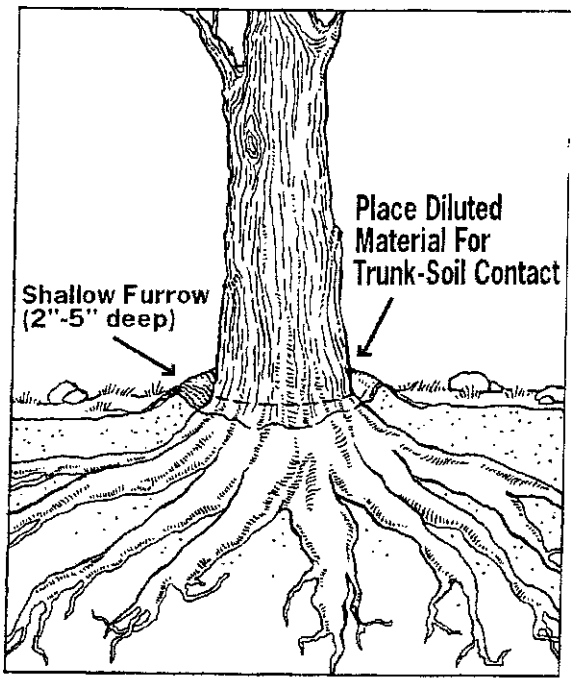


Figure 1. Placement of Paclobutrazol 2SC as a basal drench

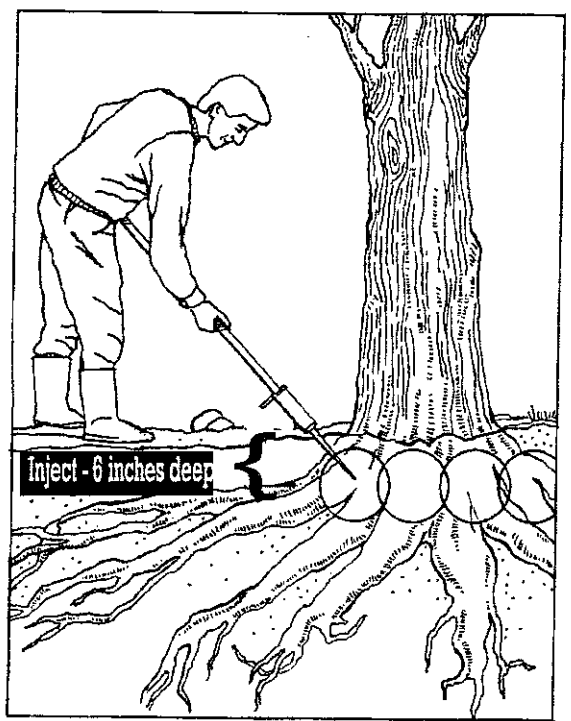


Figure 2. Placement of Paclobutrazol 2SC as a soil injected treatment

18/22

Amount of Paclobutrazol 25C Diluted Mixtures Required for Specific Application Rates and Tree Size

| Dia. of Tree at Breast Height (DBH) (inches) | 50 ml per inch DBH | 100 ml per inch DBH | 150 ml per inch DBH | 200 ml per inch DBH |
|--|--------------------|---------------------|---------------------|---------------------|
| | Total ml Required | Total ml Required | Total ml Required | Total ml Required |
| 4 | 200 | 400 | 600 | 800 |
| 5 | 250 | 500 | 750 | 1000 |
| 6 | 300 | 600 | 900 | 1200 |
| 7 | 350 | 700 | 1050 | 1400 |
| 8 | 400 | 800 | 1200 | 1600 |
| 9 | 450 | 900 | 1350 | 1800 |
| 10 | 500 | 1000 | 1500 | 2000 |
| 11 | 550 | 1100 | 1650 | 2200 |
| 12 | 600 | 1200 | 1800 | 2400 |
| 13 | 650 | 1300 | 1950 | 2600 |
| 14 | 700 | 1400 | 2100 | 2800 |
| 15 | 750 | 1500 | 2250 | 3000 |
| 16 | 800 | 1600 | 2400 | 3200 |
| 17 | 850 | 1700 | 2550 | 3400 |
| 18 | 900 | 1800 | 2700 | 3600 |
| 19 | 950 | 1900 | 2850 | 3800 |
| 20 | 1000 | 2000 | 3000 | 4000 |
| 21 | 1050 | 2100 | 3150 | 4200 |
| 22 | 1100 | 2200 | 3300 | 4400 |
| 23 | 1150 | 2300 | 3450 | 4600 |
| 24 | 1200 | 2400 | 3600 | 4800 |
| 25 | 1250 | 2500 | 3750 | 5000 |
| 26 | 1300 | 2600 | 3900 | 5200 |
| 27 | 1350 | 2700 | 4050 | 5400 |
| 28 | 1400 | 2800 | 4200 | 5600 |
| 29 | 1450 | 2900 | 4350 | 5800 |
| 30 | 1500 | 3000 | 4500 | 6000 |
| 31 | 1550 | 3100 | 4650 | 6200 |
| 32 | 1600 | 3200 | 4800 | 6400 |
| 33 | 1650 | 3300 | 4950 | 6600 |
| 34 | 1700 | 3400 | 5100 | 6800 |
| 35 | 1750 | 3500 | 5250 | 7000 |
| 36 | 1800 | 3600 | 5400 | 7200 |

19/22

Table 1: Amount of Paclobutrazol 2SC and Minimum Water Required for Specific Trees and Tree Sizes

| DBH (in.) | Tree Species Group (See Table 2) | | | | | | | | | | | |
|--------------|----------------------------------|----------------|------------------------------|----------------|------------------------------|----------------|------------------------------|----------------|------------------------------|----------------|------------------------------|----------------|
| | Group A | | Group B | | Group C | | Group D | | Group E | | Group F | |
| | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) |
| 4 | 17 | 500 | 33 | 667 | 42 | 833 | 46 | 917 | 50 | 1,000 | 67 | 1,333 |
| 5 | 20 | 625 | 42 | 833 | 52 | 1,042 | 57 | 1,146 | 63 | 1,250 | 83 | 1,667 |
| 6 | 25 | 750 | 50 | 1,000 | 63 | 1,250 | 69 | 1,375 | 75 | 1,500 | 100 | 2,000 |
| 7 | 44 | 875 | 58 | 1,167 | 73 | 1,458 | 80 | 1,604 | 88 | 1,750 | 117 | 2,333 |
| 8 | 50 | 1,000 | 67 | 1,333 | 83 | 1,667 | 92 | 1,833 | 100 | 2,000 | 133 | 2,667 |
| 9 | 56 | 1,125 | 75 | 1,500 | 94 | 1,875 | 103 | 2,063 | 113 | 2,250 | 150 | 3,000 |
| 10 | 63 | 1,250 | 83 | 1,667 | 104 | 2,083 | 115 | 2,292 | 125 | 2,500 | 167 | 3,333 |
| 11 | 69 | 1,375 | 92 | 1,833 | 115 | 2,292 | 126 | 2,521 | 138 | 2,750 | 183 | 3,667 |
| 12 | 75 | 1,500 | 100 | 2,000 | 125 | 2,500 | 138 | 2,750 | 150 | 3,000 | 200 | 4,000 |
| 13 | 81 | 1,625 | 108 | 2,167 | 135 | 2,708 | 149 | 2,979 | 163 | 3,250 | 217 | 4,333 |
| 14 | 88 | 1,750 | 117 | 2,333 | 146 | 2,917 | 160 | 3,208 | 175 | 3,500 | 233 | 4,667 |
| 15 | 94 | 1,875 | 125 | 2,500 | 156 | 3,125 | 172 | 3,438 | 188 | 3,750 | 250 | 5,000 |
| 16 | 100 | 2,000 | 133 | 2,667 | 167 | 3,333 | 183 | 3,667 | 200 | 4,000 | 267 | 5,333 |
| 17 | 106 | 2,125 | 142 | 2,833 | 177 | 3,542 | 195 | 3,896 | 213 | 4,250 | 283 | 5,667 |
| 18 | 113 | 2,250 | 150 | 3,000 | 188 | 3,750 | 206 | 4,125 | 225 | 4,500 | 300 | 6,000 |
| 19 | 119 | 2,375 | 158 | 3,167 | 198 | 3,958 | 218 | 4,354 | 238 | 4,750 | 317 | 6,333 |
| 20 | 125 | 2,500 | 167 | 3,333 | 208 | 4,167 | 229 | 4,583 | 250 | 5,000 | 333 | 6,667 |
| 21 | 131 | 2,625 | 175 | 3,500 | 219 | 4,375 | 241 | 4,813 | 263 | 5,250 | 350 | 7,000 |
| 22 | 138 | 2,750 | 183 | 3,667 | 229 | 4,583 | 252 | 5,042 | 275 | 5,500 | 367 | 7,333 |
| 23 | 144 | 2,875 | 192 | 3,833 | 240 | 4,792 | 264 | 5,271 | 288 | 5,750 | 383 | 7,667 |
| 24 | 150 | 3,000 | 200 | 4,000 | 250 | 5,000 | 275 | 5,500 | 300 | 6,000 | 400 | 8,000 |
| 25 | 156 | 3,125 | 208 | 4,167 | 260 | 5,208 | 287 | 5,729 | 313 | 6,250 | 417 | 8,333 |
| 26 | 163 | 3,250 | 217 | 4,333 | 271 | 5,417 | 298 | 5,958 | 325 | 6,500 | 433 | 8,667 |
| 27 | 169 | 3,375 | 225 | 4,500 | 281 | 5,625 | 309 | 6,188 | 338 | 6,750 | 450 | 9,000 |
| 28 | 175 | 3,500 | 233 | 4,667 | 292 | 5,833 | 321 | 6,417 | 350 | 7,000 | 467 | 9,333 |
| 29 | 181 | 3,625 | 242 | 4,833 | 302 | 6,042 | 332 | 6,646 | 363 | 7,250 | 483 | 9,667 |
| 30 | 188 | 3,750 | 250 | 5,000 | 313 | 6,250 | 344 | 6,875 | 375 | 7,500 | 500 | 10,000 |
| 31 | 194 | 3,875 | 258 | 5,167 | 323 | 6,458 | 355 | 7,104 | 388 | 7,750 | 517 | 10,333 |
| 32 | 200 | 4,000 | 267 | 5,333 | 333 | 6,667 | 367 | 7,333 | 400 | 8,000 | 533 | 10,667 |
| 33 | 206 | 4,125 | 275 | 5,500 | 344 | 6,875 | 378 | 7,563 | 413 | 8,250 | 550 | 11,000 |
| 34 | 213 | 4,250 | 283 | 5,667 | 354 | 7,083 | 390 | 7,792 | 425 | 8,500 | 567 | 11,333 |
| 35 | 219 | 4,375 | 292 | 5,833 | 365 | 7,292 | 401 | 8,021 | 438 | 8,750 | 583 | 11,667 |
| 36 | 225 | 4,500 | 300 | 6,000 | 375 | 7,500 | 413 | 8,250 | 450 | 9,000 | 600 | 12,000 |
| 37 | 231 | 4,625 | 308 | 6,167 | 385 | 7,708 | 424 | 8,479 | 463 | 9,250 | 617 | 12,333 |
| 38 | 238 | 4,750 | 317 | 6,333 | 396 | 7,917 | 435 | 8,708 | 475 | 9,500 | 633 | 12,667 |
| 39 | 244 | 4,875 | 325 | 6,500 | 406 | 8,125 | 447 | 8,938 | 488 | 9,750 | 650 | 13,000 |
| 40 | 250 | 5,000 | 333 | 6,667 | 417 | 8,333 | 458 | 9,167 | 500 | 10,000 | 667 | 13,333 |

20/22

| DBH (in.) | Tree Species Group (See Table 2) | | | | | | | | | | | |
|--------------|----------------------------------|----------------|------------------------------|----------------|------------------------------|----------------|------------------------------|----------------|------------------------------|----------------|------------------------------|----------------|
| | Group A | | Group B | | Group C | | Group D | | Group E | | Group F | |
| | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) | Paclobutrazol 2SC (ml) | Water* (ml) |
| 41 | 256 | 5,125 | 342 | 6,833 | 427 | 8,542 | 470 | 9,396 | 513 | 10,250 | 683 | 13,667 |
| 42 | 263 | 5,250 | 350 | 7,000 | 438 | 8,750 | 481 | 9,625 | 525 | 10,500 | 700 | 14,000 |
| 43 | 269 | 5,375 | 358 | 7,167 | 448 | 8,958 | 493 | 9,854 | 538 | 10,750 | 717 | 14,333 |
| 44 | 275 | 5,500 | 367 | 7,333 | 458 | 9,167 | 504 | 10,083 | 550 | 11,000 | 733 | 14,667 |
| 45 | 281 | 5,625 | 375 | 7,500 | 469 | 9,375 | 516 | 10,313 | 563 | 11,250 | 750 | 15,000 |
| 46 | 288 | 5,750 | 383 | 7,667 | 479 | 9,583 | 527 | 10,542 | 575 | 11,500 | 767 | 15,333 |
| 47 | 294 | 5,875 | 392 | 7,833 | 490 | 9,792 | 539 | 10,771 | 588 | 11,750 | 783 | 15,667 |
| 48 | 300 | 6,000 | 400 | 8,000 | 500 | 10,000 | 550 | 11,000 | 600 | 12,000 | 800 | 15,000 |
| 49 | 306 | 6,125 | 408 | 8,167 | 510 | 10,208 | 562 | 11,229 | 613 | 12,250 | 817 | 16,333 |
| 50 | 313 | 6,250 | 417 | 8,333 | 521 | 10,417 | 573 | 11,458 | 625 | 12,500 | 833 | 16,667 |

*More water may be used than indicated on the table to deliver the desired rate of product. Do not use less water as distribution of the chemical in the tree can be compromised.

Visit our website at [insert company website] or call [insert company telephone number] for additional information about this product.

2/22

Table 2: Tree Species for Each Group Corresponding to Application Rates in Table 1.

| <u>Group A</u> | <u>Group E</u> | <u>Group F</u> |
|--|---|--|
| <u>Australian pine (NOT Austrian Pine)</u> | <u>Anaqua*</u> | <u>Alder</u> |
| <u>Dogwood</u> | <u>Baytree</u> | <u>Arborvitae</u> |
| <u>Sweetgum (eastern US)</u> | <u>Beech</u> | <u>Ash - All Species</u> |
| <u>Redbud</u> | <u>Camphor</u> | <u>Aspen**</u> |
| | <u>Cedar - Deodora</u> | <u>Banyan*</u> |
| | <u>Chinaberry</u> | <u>Birch - All Species</u> |
| | <u>Catalpa</u> | <u>Black olive</u> |
| | <u>Ebony - Texas*</u> | <u>Bradford pear</u> |
| | <u>Hickory</u> | <u>Cedar - All others (except Deodora)</u> |
| | <u>Holly - American</u> | <u>Cherry - black</u> |
| | <u>Locust - Honey</u> | <u>Cottonwood**</u> |
| | <u>Mesquite*</u> | <u>Crabapple</u> |
| | <u>Mimosa*</u> | <u>Eucalyptus</u> |
| | <u>Oak - Black</u> | <u>Fir</u> |
| | <u>Oak - Live - large (>10" DBH)</u> | <u>Hackberry</u> |
| | <u>Oak - Pin</u> | <u>Hawthorne</u> |
| | <u>Oak - Post</u> | <u>Hemlock</u> |
| | <u>Oak - Red</u> | <u>Jackaranda</u> |
| | <u>Oak - Sandshinnery</u> | <u>Juniper</u> |
| | <u>Oak - Water</u> | <u>Laurel</u> |
| | <u>Oak - White</u> | <u>Locust - Black</u> |
| | <u>Oak - Willow</u> | <u>Magnolia</u> |
| | <u>Olive - Russian</u> | <u>Melaleuca*</u> |
| | <u>Paloverde*</u> | <u>Mugo Pine</u> |
| | <u>Paulownia</u> | <u>Mulberry</u> |
| | <u>Pecan*</u> | <u>Oak - Laurel</u> |
| | <u>Raintree*</u> | <u>Oak - valley</u> |
| | <u>Saltcedar*</u> | <u>Osage orange</u> |
| | <u>Sassafrass</u> | <u>Palms*</u> |
| | <u>Soapberry*</u> | <u>Pear - Bradford</u> |
| | <u>Sumac - African*</u> | <u>Photinia</u> |
| | <u>Walnut</u> | <u>Pines - All Species**</u> |
| | | <u>Poplar - Lombardy, Tulip, Yellow**</u> |
| | | <u>Redwood</u> |
| | | <u>Spruce - All Species</u> |
| | | <u>Sugarberry</u> |
| | | <u>Sycamore**</u> |
| | | <u>Tallow - Chinese</u> |
| | | <u>Waxmyrtle - Pacific</u> |
| | | <u>Tallowood*</u> |
| | | <u>Tamarisk*</u> |
| | | <u>Willow</u> |
| | | <u>Yew</u> |

* These trees may exhibit variable results

** These trees have a limited response to Paclobutrazol 2SC and may need multiple consecutive years of treatment for acceptable growth control

22/22

The Syngenta logo is trademark of a Syngenta Group Company

Embark® Trademark of PBI/Gordon Corp.

©200_ Syngenta

For non-emergency (e.g., current product information) call
Syngenta Crop Protection at 1-800-334-9481.

Product of the United Kingdom
Formulated in the USA

Syngenta Crop Protection, Inc.
Greensboro, North Carolina 27409
www.syngenta-us.com

PAC 2SC 1014 MAS AMEND0306B TURF-TREE – df – 09/06/06
000100-01014.20060321B.PAC-2SC-AMEND0306B-TURF-TREE.PDF