



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 20 2004

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mr. Richard Gorrell
Bayer Environmental Science
95 Chestnut Ridge Road
Montvale, NJ 07645

Dear Mr. Gorrell:

Subject: Revolver Herbicide Amendment
EPA Registration Number 432-1266
Application dated May 28, 2004

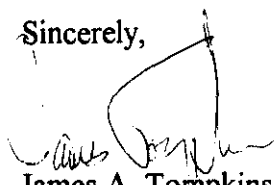
The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act as amended is acceptable, provided you make the following changes before you release the product for shipment.

1. Add Note To Physician statement that states:
"Contains petroleum distillate. Vomiting may cause aspiration pneumonia."
2. Change order of precautionary statements to match order of First Aid statements. Both should be ordered so that the most severe route of exposure is listed first.
3. Add the following to the User Safety Recommendations box:
"Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing."
"Users should 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."
4. Remove the phrase "Do not contaminate water, food or feed by storage or disposal" from under PESTICIDE STORAGE, and place directly before PESTICIDE STORAGE and after the heading STORAGE AND DISPOSAL. Place appropriate pesticide storage text in the PESTICIDE STORAGE section.
5. Change the statement "In situations where multiple applications on the same treated area exceeds this limit, do not treat more than 10,000 square feet per acre of turf area" under the Rate Recommendation Table for Weed Control section to "In the case of spot treatments, do not treat more than 10,000 square feet per acre of turf area."

Submit three (3) copies of final printed labeling incorporating the above changes before you release the product for shipment. Amended labeling will supercede all previously accepted ones. A stamped copy of labeling is enclosed for your records.

If you have any questions, please contact Hope Johnson at 703-305-5410.

Sincerely,



James A. Tompkins
Product Manager 25
Herbicide Branch
Registration Division (7505C)

JUL 20 2004
Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

432-1266

Revolver™ Herbicide

A Herbicide for the Control of Annual and Perennial Grasses in Bermudagrass and Zoysiagrass

ACTIVE INGREDIENTS: Foramsulfuron* (CAS Number 173159-57-4)..... 2.34%

OTHER INGREDIENTS: **..... 97.66%

*This product is a suspension concentrate containing 0.19 lbai/gal. Protected by U.S. Patent No 5,922,646.....**TOTAL: 100.00%**

**Contains Petroleum Distillates

Shake well before use.

EPA Reg No. 432-1266

E.P.A. Est. No.

KEEP OUT OF REACH OF CHILDREN CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

For MEDICAL And TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-228-5635

For PRODUCT USE Information Call 1-888-331-2867

FIRST AID

IF SWALLOWED:	<ul style="list-style-type: none">• Immediately call a poison control center or doctor.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give any liquid to the person.• 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.
For MEDICAL Emergencies Call 24 Hours A Day 1-800-334-7577.	
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	

PRECAUTIONARY STATEMENTS

CAUTION

HAZARD TO HUMANS AND DOMESTIC ANIMALS

Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

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 A on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear: Long-sleeved shirt and long pants, socks, shoes and chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride. 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.

Engineering control statement:

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

USER SAFETY RECOMMENDATIONS

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

ENVIRONMENTAL HAZARDS

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 cleaning equipment or disposing of equipment washwaters. Do not drain or rinse equipment near desirable vegetation.

Do not apply when conditions favor drift from treated areas.

Non-target plants may be adversely affected if the pesticide is allowed to drift from areas of application. To prevent damage to crops and other desirable plants, read and follow all directions and precautions on this label before using.

DIRECTIONS FOR USE

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

Read entire label before using this product.

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 same area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticides.

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 intervals. 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 over long-sleeved shirt and long pants, socks and shoes and chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.

NON-AGRICULTURAL USE REQUIREMENTS

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

STORAGE AND DISPOSAL**PESTICIDE STORAGE**

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

PESTICIDE DISPOSAL

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL

Empty containers should be triple rinsed (or equivalent), then offered for recycling or reconditioning; or puncture and disposed of in a sanitary landfill, or by incineration; or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

GENERAL INFORMATION

USES

REVOLVER Herbicide is a postemergent sulfonylurea herbicide for application as a foliar spray. REVOLVER is intended for professional use on golf course turf, sports fields, commercial lawns, cemeteries, parks, campsites, recreational areas, home lawns, roadsides, school grounds, and sodfarms to control cool season grasses and weeds from tolerant grasses.

SYMPTOMS

Weed growth ceases within hours after application. Symptoms progress from yellowing to necrosis generally resulting in eventual plant death within 1-4 weeks after application. The speed of symptom development varies with temperature and will be faster at warmer temperatures than cooler temperatures. For best results to control mature weeds, it is recommended that treatments occur in spring or through fall when the daily average temperature is above 55 degrees.

TURF TOLERANCE

REVOLVER Herbicide has been tested and can be used on the following warm season turfgrass cultivars.

Bermudagrass: Baby, Common, Tifway 419, Tifgreen 328, Tifton 10, TifSport, Tifdwarf, Tifeagle, Vamont

Zoysiagrass: Meyer, Jamar, Palisades, Zeon, Zenith (seeded), El Toro, Cavalier, DeAnza, Greg Norman Zoysia, Crowne

Other warm season turfgrass and their cultivars may be tolerant to foramsulfuron; however, tolerance testing should be done prior to use

Cool season turfgrasses, such as Bentgrass, Ryegrass, Fescues, and Kentucky Bluegrass are intolerant to Revolver.

USE OF REVOLVER AROUND SENSITIVE GRASSES:

Recommendations to avoid tracking or movement after application of Revolver to adjacent sensitive grasses such as bentgrass, ryegrass, and Poa trivialis.

- Allow an adequate buffer zone between sensitive grasses and the treated area. If uncertain about the size of the buffer, 15 feet is suggested.
- The product should dry on the leaf surface prior to allowing traffic on the treated area.
- Risk to sensitive grasses adjacent to Revolver applications is decreased when the soil is at less than field capacity. Avoid application when heavy rain is imminent or when the soil is saturated.
- Revolver is foliar absorbed; irrigation is not recommended immediately after application. However, for the next 2 mornings after application, if dew is present, irrigate lightly (0.1-0.2 inches) prior to allowing traffic (mowing, etc.) each day in the area. Avoid water runoff during these irrigation cycles.

APPLICATION METHODS, MIXING, AND COMPATIBILITY

Uniform, thorough spray coverage is important to achieve consistent weed control. Select spray nozzles and pressure that deliver **MEDIUM** spray droplets as indicated in nozzle manufacturer's catalogs and in accordance with ASAE Standard S-572. Nozzles that deliver **COARSE** spray droplets may be used to reduce spray drift provided spray volume per acre (GPA) is increased to maintain coverage of weeds.

Application

Broadcast:

REVOLVER Herbicide can be applied as a broadcast treatment in a minimum of 25 gallons of water per acre. For weed control in dense weed populations or under adverse growing conditions, higher spray volumes up to 60 gallons per acre are recommended. Rates are listed in the weed control recommendation table.

Hand held sprayer for spot treatment:

For hand held pump type sprayers, mix 0.5 to 1 fluid ounce of Revolver per gallon of water, depending on the weed and stage of growth. Use the higher rate for the more difficult to control or larger weeds. Spray to wet. Do not apply beyond runoff.

SPRAY SOLUTION pH

The efficacy of REVOLVER Herbicide may be affected by the pH of the spray solution. A pH near 7 is ideal. If pH is less than 6, add a buffer.

Mixing Instructions

REVOLVER Herbicide must be applied with clean and properly calibrated equipment. Prior to adding REVOLVER Herbicide, ensure that the spray tank, filters and nozzles have been thoroughly cleaned.

1. Fill spray-tank with 25% to 50% of the required volume of water, and begin agitation prior to the addition of REVOLVER Herbicide.
2. Continue agitation to ensure full dispersion of REVOLVER Herbicide.
3. If REVOLVER Herbicide is applied in a tank mixture with other pesticides, add REVOLVER Herbicide to the spray tank first and ensure it is thoroughly dispersed before adding other pesticides.
4. Continue to fill the spray tank with water to the desired volume and agitate while adding spray adjuvants and nitrogen fertilizers.

Continue agitation during application to ensure a uniform spray mixture.

RE-SUSPENDING SUSPENSION CONCENTRATE PRODUCTS IN SPRAY SOLUTION

Like other suspension concentrates, REVOLVER Herbicide will settle if left standing without agitation. If the spray solution is allowed to settle for one hour or more, re-agitate the spray solution.

COMPATIBILITY

If REVOLVER Herbicide is to be tank mixed with other pesticides not listed specifically on this label, compatibility should be tested prior to mixing. To test for compatibility, use a small container and mix a small amount (0.5 to 1qt) of spray, combining all ingredients in the same ratio as the anticipated use. If any indications of physical incompatibility develop (precipitation, settling, changes in color) do not use this mixture for spraying. Indications of incompatibility usually occur within 5-15 minutes after mixing. Read and follow the label of each tank mix product used for precautionary statements, directions for use, geographic and other restrictions.

WEED CONTROL AND TRANSITION RECOMMENDATIONS

REVOLVER Herbicide can be applied to Bermudagrass for removal of ryegrass and *Poa annua* during the spring transition. Treatments should be applied when Bermudagrass has resumed growth and removal of ryegrass is desired. Rate and temperature will influence the speed of removal. Higher labeled rates and warmer spring temperatures will result in faster removal. The best time for application within the transition period will vary by location. Addition of nitrogen fertilizer in the tank mixture at the time of application may improve turf quality by increasing Bermudagrass growth during the transition. Rates are listed in the weed control recommendation table.

VOLUNTEER RYEGRASS, TALL FESCUE, AND OTHER COOL SEASON GRASSES

REVOLVER Herbicide can be used to remove clumps of cool season grasses from desired turf. Herbicide rate and temperature will influence the speed of removal. Higher labeled rates and air temperatures will result in quicker removal. Rates are listed in the weed control recommendation table. For best results to control mature weeds, it is recommended that treatments occur in spring or through fall when the daily average temperature is above 55 degrees.

ANNUAL BLUEGRASS (*POA ANNUA*)

REVOLVER Herbicide may be used to control annual bluegrass.

Non Overseeded warm season turfgrass:

Revolver may be used on desired turf that has not been overseeded with a cool season grass. Later germinating annual bluegrass will require additional applications.

As Revolver does not have significant preemergent weed control activity, applications can be made in conjunction with a preemergent such as Ronstar® herbicide to obtain pre and post activity. Always follow the most restrictive overseeding interval on the products used. Rates are listed in the weed control recommendation table.

BERMUDAGRASS, GREENS, TEES, and COLLARS, AND APPROACHES

REVOLVER Herbicide may be used to remove *Poa trivialis*, *Poa annua*, ryegrass, and bentgrass from Bermudagrass greens, tees, and collars. Higher labeled rates and air temperatures will result in faster removal. Bermudagrass should be actively growing prior to transitional use of REVOLVER to ensure fill in. Rates are listed in the weed control recommendation table. Do not use more than 0.4 fluid ounces per 1000 square feet on these areas per application.

OVERSEEDDED BERMUDAGRASS, GREENS, TEES, COLLARS, AND APPROACHES

REVOLVER Herbicide may be used to remove *Poa trivialis*, *Poa annua*, ryegrass, and bentgrass from Bermudagrass greens, tees, collars and approaches surrounding Bermudagrass greens. Application should be made to Bermudagrass during the spring transition. Higher labeled rates and air temperatures will result in faster removal. Bermudagrass should be actively growing prior to transitional use of REVOLVER to ensure fill in. Rates are listed in the weed control recommendation table. Do not use more than 0.4 fluid ounces per 1000 square feet on these areas per application.

GOOSEGRASS

Fairways and Roughs

Make two applications of Revolver Herbicide at a 6-14 day interval. Tank mixes with Sencor or MSMA may improve control. The lower rate may be used for control of goosegrass at the 1-3 leaf stage. If using the 0.4 rate, and regrowth occurs, a third application may be necessary to control large established goosegrass. This third application should be made prior to early tillering

Green, Tees, and Collars

Make two applications of Revolver Herbicide at a 6-14 day interval. If using the 0.4 oz rate and regrowth occurs, a third application may be necessary to control large established goosegrass. This third application should be made prior to early tillering

Rates are listed in the weed control recommendation table.

Spot Treatment Weed Suppression:

Dallisgrass Suppression:

Revolver used in late summer or early fall will provide suppression of dallisgrass when used in spot treatments. Use Revolver at 1.0 fl oz per gallon and spray to wet followed 7-14 days later with an additional spot treatment. If regrowth occurs a third application may be necessary. Results are improved when the Revolver spot treatments are preceded 7 days prior with an application of MSMA at the recommended dallisgrass rate.

Other Weeds suppressed with spot treatments: Mouseear Chickweed, White clover, bur clover, hop clover, Large crabgrass.

RATE RECOMENDATION TABLE FOR WEED CONTROL

REVOLVER Herbicide should be applied at a rate of 0.1 to 0.6 ounces of product per 1000 sq. ft. Because REVOLVER Herbicide provides control of emerged weeds and has limited soil residual, sequential applications or residual tank mixtures may be required to control weeds emerging after application. **Broadcast applications of REVOLVER Herbicide should not exceed a maximum of 1.25 ounces of product per 1000 sq. ft per use season.** In situations where multiple applications on the same treated area exceeds this limit, do not treat more than 10,000 square feet per acre of turf area.

Weed or Grass Species Controlled	Product Application Rate Ounces/1000 sq. ft.	Product Application Rate Ounces/5000 sq. ft.	Product Application Rate Ounces/Acre
Ryegrass (transition)	0.2 - 0.4	0.4, - 2	5.5 - 17.4
Volunteer ryegrass, tall fescue, and other cool season grasses	0.2 - 0.6	1 - 3	8.8 - 26.2
Annual bluegrass	0.2 - 0.4	1 - 2	8.8 - 17.4
<i>Poa trivialis</i> , <i>Poa annua</i> , goosegrass and bentgrass in overseeded bermudagrass greens, tees, and collars	0.1 - 0.4	0.5 - 2.0	4.4 - 17.4
Goosegrass	0.4 - 0.6	2 - 3	17.4 - 26.2
Centipedegrass (suppression), Bahiagrass, Dallisgrass	0.6	3	26.2
Henbit, Doveweed, Carolina false dandelion, Little Barley	0.4	2	17.4

* Multiple applications may be required to control Goosegrass, large volunteer ryegrass, or where 0.1 oz rate is used

Weed Resistance

ALS-resistance exists in some biotypes. These biotypes are not controlled by REVOLVER Herbicide. Consider using herbicides with other modes of action to control resistant species.

TANK MIX RECOMMENDATIONS FOR REVOLVER HERBICIDE

The following products have been tested for physical compatibility and have shown to be compatible.

When using REVOLVER Herbicide in tank mix combinations, follow the precautions and directions of the most restrictive label. Test compatibility with other unlisted pesticides prior to use.

Herbicides

Atrazine	Image®*
Manage®	MSMA*
Sencor®*	Ronstar®

*Note that tank mixtures of REVOLVER Herbicide with Image, Sencor or MSMA may increase temporary discoloration (yellowing) on Bermudagrass.

Insecticides

Sevin®

Foliar Insecticide Interaction

Foliar applications of an OP insecticide should **not** be made within 7 days of a REVOLVER Herbicide application or injury may result.

Tank Mixtures with Fungicides

26GT®

TANK CLEANUP PROCEDURE

1. Drain the tank completely, then wash out tank, boom and hoses with clean water. Drain again.
2. Fill the tank half full with clean water and add ammonia (i.e. 3% domestic ammonia solution) at a dilution rate of 1% (i.e. 1 gallon of domestic ammonia for every 100 gallons of rinsate). Completely fill the tank with water. Agitate/recirculate and flush through boom and hoses. Leave agitation on for 10 minutes. Drain tank completely.
3. Repeat Step 2.
4. Remove nozzles and screens and soak them in a 1% ammonia solution. Inspect nozzles and screens and remove visible residues.
5. Flush tank, boom, and hoses with clean water.
6. Inspect tank for visible residues. If present, repeat Step 2.

PRECAUTIONS FOR USE

1. Rainfall within 2 hours may necessitate retreatment with REVOLVER Herbicide or may result in reduced weed control. Applications should be made to actively growing weeds. Weed control may be reduced if application is made in the presence of heavy dew, fog, and mist/rain or when weeds are under stress due to drought.
2. DO NOT apply when wind causes drift to off-site vegetation as injury may occur. Small amounts of REVOLVER Herbicide delivered via drift or spray tank contamination can damage other plants. Careful management of spray drift and tank cleanout is recommended.
3. DO NOT broadcast more than 1.25 oz/1000 sq. ft. of REVOLVER Herbicide to turf in one growing season.
4. Do not apply this product by air or through any type of irrigation system.
5. Apply Revolver Herbicide spray mixtures within 24 hours of mixing to avoid product degradation.
6. Do not apply REVOLVER Herbicide on turf exhibiting injury from previous applications of other products.
7. Do not apply REVOLVER HERBICIDE within 2 weeks of Bermudagrass sprigging.
8. Do not apply REVOLVER HERBICIDE within 2 weeks prior to overseeding Bermudagrass with a cool season grass such as ryegrass, some temporary stunting may occur for up to two weeks.
9. Avoid excessive mechanical disruptions such as aerification and verticutting within 1 week prior to or after application

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and should be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Turf injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Bayer Environmental Science. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: BAYER ENVIRONMENTAL SCIENCE MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer Environmental Science is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. BAYER ENVIRONMENTAL SCIENCE DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

LIMITATIONS OF LIABILITY: THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER ENVIRONMENTAL SCIENCES ELECTION, THE REPLACEMENT OF PRODUCT.

26GT, Finale, Sevin, Sencor Ronstar and Illoxan, are registered trademarks of the Bayer Environmental Science.

Image is a registered trademark of the BASF Corporation.

Manage is a registered trademark of the Monsanto Company.

Trimec Plus is a registered trademark of PBI/Gordon Corp.

Bayer Environmental Science
95 Chestnut Ridge Rd
Montvale, New Jersey

EPA REVOLVER Amend 5-28-04 Revised RMG 7/19/04