

PM 25 7969-88 2/12/99 page 1822  
**BASF**

**Vantage<sup>®</sup>**  
herbicide

**Active Ingredient:**

Sethoxydim\*: [2-[1-(ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one].....13.0%

**Inert Ingredients:**.....87.0%

**Total**.....100.0%

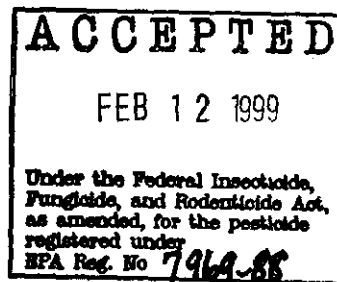
\*Equivalent to 1.0 pound of sethoxydim per gallon

EPA Reg. No. 7969-88

EPA Est. No. 34313-TX-01

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**



See the attached booklet for complete **Precautionary Statements, Statements of Practical Treatment, Directions For Use, and Conditions of Sale and Warranty.**

**Net contents: 1 gallon (3.76 liters)**

## Precautionary Statements

### Hazards to Humans and Domestic Animals

**Caution.** Causes moderate eye injury. Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes, or clothing.

### Statement of Practical Treatment

**If in eyes:** Flush with plenty of water. Call a physician if irritation persists.

**If on skin:** Wash with plenty of soap and water. Get medical attention.

**If swallowed:** Promptly drink a large quantity of milk, egg whites, gelatin solution, or, if these are not available, large quantities of water. Avoid alcohol.

### Personal Protective Equipment (PPE)

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

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, or viton  $\geq 14$  mils
- Shoes plus socks

Wash thoroughly with soap and water after handling. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not re-use them. 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 Controls 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.
- 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

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

### Endangered Species Concerns

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of federal law.

## Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

All applicable directions, restrictions, precautions and **Conditions of Sale and Warranty** are to be followed. This labeling must be in the user's possession during application.

## 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), notification to workers, and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of **12 hours**.

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, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, or viton  $\geq 14$  mils
- Shoes plus socks

## Nonagricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, nurseries, or greenhouses. Do not allow people or pets to come into contact with treated areas until sprays have dried.

## Storage and Disposal

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

**Pesticide Storage:** Do not store below 32° F or above 100° F. Store in a dry place away from heat or open flame. Avoid contamination of feed or foodstuffs.

**Pesticide Disposal:** Pesticide wastes are toxic. Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal:**

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

**In Case of Emergency**

In case of large-scale spillage regarding this product, avoid contact, isolate area, and keep out animals and unprotected persons. Confine spill and call:

CHEMTREC 800-424-9300

BASF Corporation 800-832-HELP

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment.
- Your local poison control center (hospital).
- BASF Corporation (800-832-HELP).

**I. General Information**

**Vantage® herbicide** is a selective, broad spectrum, postemergence herbicide for control of annual and perennial grass weeds in turf, ornamentals, nonfood, and noncrop sites listed on this label. **Vantage** does not control sedges or broadleaf weeds. Essentially, all grass crops, such as sorghum, corn, small grains, and rice, as well as ornamental grasses, such as turf, are susceptible to **Vantage**. A program for total vegetation suppression may necessitate the use of a broadleaf herbicide. Any combination treatment using **Vantage**, either tank mixed or sequential, should be tested to determine if seedhead growth suppression is maintained without increased injury or discoloration to tall fescue or other desired plant species. A reduction in grass competition may make certain broadleaf weeds appear more prominent or may allow new weeds to germinate.

**Vantage** may be used in or around the following sites:

Airports	Perennial peanuts (nonfood)
Bedding plants	Pipeline pumping stations
Centipedegrass and fine fescue turf	Potting and top soils
Drug and medicinal crops	Public buildings
Electrical transformer stations	Recreation areas
Fences and hedgerows	Rights-of-ways
Fine fescue seed production	Roadsides
General indoor/outdoor sites	Sewage disposal areas
Ground covers	Shrubs
Industrial sites	Storage yards
Other paved areas	Trees, Christmas trees
	Uncultivated agricultural areas
	Wildflowers

**Mode of Action**

**Vantage** rapidly enters the targeted grass weed through its foliage and translocates throughout the plant. The effects range from slowing or stopping growth (generally within 2 days), to foliage reddening and leaf tip burn. Subsequently, foliage burnback occurs. These symptoms will generally be observed within 3 weeks depending on environmental conditions.

**Crop Tolerance**

All labeled crops are tolerant to **Vantage** at all stages of growth. Leaf speckling may occur, but plants generally outgrow this condition within 10 days. New growth is normal and crop vigor is not reduced.

**Notice to user:** Due to variability within species, and in application techniques and equipment, and the number of tank mix combinations, neither the manufacturer nor the seller has determined whether or not **Vantage** can safely be used on all varieties and species of nonbearing food crops, trees, shrubs, ornamentals, bedding plants, ground covers, nursery, wildflowers, Christmas trees, turf and other non-food crops under all conditions. It is recommended, therefore, that the professional user determine if **Vantage** can be used safely before broad use by applying the recommended use rate of **Vantage** under the conditions expected to be encountered on a small test area. Any adverse effects should be visible within 7 days.

**Herbicide Resistance**

Repeated use of **Vantage** (or similar postemergence grass herbicides with the same mode of action) may lead to the selection of naturally occurring biotypes with resistance to these products. If poor performance cannot be attributed to adverse weather conditions or improper application methods, a resistant biotype may be present. Consult your local representative or agricultural advisor for assistance.

**Irrigation**

In irrigated areas, it may be necessary to irrigate before treatment to ensure active weed growth.

**Coverage**

Apply **Vantage** to the foliage of grasses on a spray-to-wet basis uniformly and completely. Dense leaf canopies shelter smaller grassy weeds and can prevent adequate spray coverage. Do not spray to the point of runoff.

**Cultivation/Mowing**

If cultivation is an option, do not cultivate during the time between 5 days before and 7 days after applying **Vantage**. Cultivating 7-14 days after treatment may help provide season-long control of perennial grasses. Centipedegrass and fine fescue areas should not be mowed within 7 days before or after applying **Vantage**. Increased control has been observed when mowing is delayed until 14 days after application. Grass weeds that have been mowed or have regrown from mowed stubble may be controlled poorly. Repeat application if new germination or regrowth occurs.

**Cleaning Spray Equipment**

Clean spray equipment thoroughly using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions before and after applying this product.

**II. Application Instructions**

Applications can be made to actively growing grassy weeds as aerial, broadcast, band, or spot spray applications at the rates and growth stages listed in Tables 1 and 2, unless instructed differently in section VII. **Crop-Specific Information**. The most effective control will result from making postemergent applications of **Vantage** early, when grassy weeds are small. Delaying application permits grassy weeds to exceed the maximum size stated and will prevent adequate control.

Do not apply when conditions favor drift from target area or when windspeed is greater than 10 mph.

## Ground Application (Broadcast)

**Water Volume:** Use 5-50 gallons of spray solution per acre (1-10 pints per 1,000 square feet).

**Spray Pressure:** Use 30-60 psi (measured at the boom, not at the pump or in the line). When crop and grass weed foliage is dense, use a minimum of 20 gallons (3.67 pints per 1,000 square feet) of water and 60 psi.

**Application Equipment:** Use standard high-pressure pesticide flat fan or hollow cone nozzles spaced up to 20 inches apart. Do not use flood, whirl chamber, or controlled droplet applicator (CDA) nozzles as erratic coverage can cause inconsistent weed control. Refer to the nozzle manufacturer's directions for recommended height.

Do not use selective application equipment such as recirculating sprayers or wiper applicators.

## Spot or Small Area Application

**Vantage** can be applied using tank-type, knapsack sprayers, high-volume equipment with hand guns, or other suitable nozzle arrangements. Prepare a solution of **Vantage® herbicide** in water according to **Table 2**.

Do not make spot treatments in addition to broadcast or band treatment

**Table 1. Application Rates for Grass Control**

Grass	Vantage (Rate)	
	Grasses up to 6" height	Grasses up to 12" height
Bahiagrass <sup>1</sup> Barnyardgrass Bentgrass, Colonial , Highland Broadleaf Signalgrass Crabgrass, Large <sup>1</sup> , Smooth <sup>1</sup> Downy Brome <sup>4</sup> German Velvetgrass <sup>1</sup> Goosegrass <sup>1,2</sup> Johnsongrass, Rhizome , Seedling Junglerice Lovegrass Orchardgrass, Seedling Panicum, Browntop , Fall , Texas Quackgrass Ryegrass, Annual <sup>3</sup> Sandbur, Field Shattercane/Wildcane Sprangletop, Red* Tall Fescue, Seedling Volunteer, Barley , Oats , Rye , Wheat Wild Oats Wild Proso Millet Wirestem Muhly Witchgrass Woolly Cupgrass	2.25 pints per acre or 0.8 fluid ounces per 1,000 square feet	3.75 pints per acre or 1.4 fluid ounces per 1,000 square feet
<sup>1</sup> up to 4" <sup>2</sup> In Seedling Centipedegrass and fine fescue, use 1.5 pints (0.5 fluid ounces). <sup>3</sup> up to 8" <sup>4</sup> up to 6" * Not recommended in CA, AZ, or Western NM.		

**Table 2. Spot Treatment Application Rates**

Grass (see Appendix for the complete list of grasses controlled)	Concentration of Vantage in Spray Solution
Annual grasses up to 6" height	1.5%
Annual grasses up to 12" height	2.25%
Perennial grasses	2.25% <sup>1</sup>
<sup>1</sup> Use 1.5% for wirestem muhly.	

**Table 3. Spot Treatment Dilution**

Spray Solution Volume	Amount of Vantage to be Added	
	1.5% v/v	2.25% v/v
1 gallon	2 fl. oz.	3 fl. oz.
3 gallons	6 fl. oz.	9 fl. oz.
5 gallons	9.5 fl. oz.	14.5 fl. oz.
<sup>1</sup> Use 1.5% for wirestem muhly.		

### III. Additives

No additives or adjuvants are recommended for use with **Vantage® herbicide**.

#### Compatibility Test for Tank Mix Components

Add components in the following sequence using 2 teaspoons for each pound or 1 teaspoon for each pint of recommended label rate per acre.

- 1) **Water:** — For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes, adjust rates accordingly. Use only water from the intended source at the source temperature.
- 2) **Products in PVA bags:** — Cut an opening in the water-soluble PVA bag just large enough to use a teaspoon for measuring purposes. Use the opened water-soluble PVA bag first when preparing spray solution. Cap the jar and invert 10 cycles.
- 3) **Water-dispersible products:** — (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions) Cap the jar and invert 10 cycles.
- 4) **Water-soluble products:** — Cap the jar and invert 10 cycles.
- 5) **Emulsifiable concentrates:** — (**Vantage**) Cap the jar and invert 10 cycles.
- 6) **Water-soluble additives:** — Cap the jar and invert 10 cycles.
- 7) Let the solution stand for 15 minutes.
- 8) **Evaluate** the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. Do not use any spray solution that could clog spray nozzles.

### IV. Mixing Order

- 1) **Water:** Begin by agitating a thoroughly clean sprayer tank half full of clean water.
- 2) **Products in PVA bags:** Rinse the tank thoroughly before adding any material in PVA bags as boron residue will prevent adequate mixing. Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and is evenly mixed in the spray tank before continuing.
- 3) **Water-dispersible products:** (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
- 4) **Water-soluble products**
- 5) **Emulsifiable concentrates** (**Vantage**)
- 6) **Water-soluble additives**
- 7) **Remaining quantity water**

Maintain constant agitation during application.

### V. Tank Mixing Application

Read and follow the applicable **Restrictions and Limitations and Directions For Use** on all products involved in tank mixing. Refer to section **VII. Crop-Specific Information** for more details.

The most restrictive labeling applies to tank mixes.

Separate applications should be made if all target grassy weeds are not at the correct growth stage for treatment at the same time.

Tank mixing **Vantage** with some postemergence broadleaf herbicides has shown some reduction or failure to control some grassy weeds that would otherwise be controlled and therefore may require a higher rate of **Vantage**. However, do not exceed the maximum rate per application as listed in **Table 6**. If regrowth occurs or an additional flush of new grasses emerges, reapply **Vantage** according to recommended rates in **Table 4**.

#### Tank Mix Partners

The following herbicides may be tank mixed with **Vantage** according to the instructions in the respective product labels.

- **Basagran® T/O**
- **Basagran® SG**
- **Fortune®**
- **Goal®**
- **Stinger®**
- **Surflan® AS**

\*For use only in AZ, NV, OR, WA.

Physical incompatibility, reduced grass weed control, or crop injury may result from mixing **Vantage** with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. BASF does not recommend using tank mixes other than those listed on BASF labeling. Local agricultural authorities may be a source of information when using other than BASF recommended tank mixes.

### VIII. General Restrictions and Limitations — All Crops

- **Maximum seasonal use rate:** See section IX. **Crop-Specific Information** for crop-specific maximum seasonal use rates.
- **Restricted Entry Interval (REI): 12 hours.**
- Avoid all direct or indirect contact with any desired grass crop unless otherwise recommended on the **Vantage® herbicide** label.
- Do not use treated vegetation as pasture, hay, feed, or forage.
- Do not apply **Vantage** with another pesticide whose label cautions against use with additives, surfactants, or oil adjuvants.
- Do not use **selective application equipment** such as recirculating sprayers, wiper applicators, or **shielded applicators**.
- **Stress:** Do not apply to grasses or crops under stress such as stress due to lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, or widely fluctuating temperatures, as unsatisfactory control will probably result.
- Do not apply to crops that show **injury** (leaf phytotoxicity or plant stunting) produced by any other prior herbicide applications, because this injury may be enhanced or prolonged.
- **Rainfast Period:** **Vantage** is rainfast 1 hour after application.
- Do not apply through any type of **irrigation** equipment.

## IX. Crop-Specific Information

### Christmas Tree and Deciduous Tree Farms

**Vantage® herbicide** may be used to control annual and perennial grasses in Christmas and deciduous tree farms. If a Christmas tree or deciduous tree is not listed in the **Appendix**, the user may determine if **Vantage** can be used safely prior to broad use by applying the recommended use rate of **Vantage** to the target plant on a small test area under the conditions expected to be encountered. Any adverse effects should be visible within 7 days.

Table 4. Christmas Trees

Common Name	Scientific Name
Fir, Balsam	<i>Abies balsamea</i>
, Douglas	<i>Pseudotsuga mensiesii</i>
, Frasier	<i>Abies fraseri</i>
, Grand	<i>Abies grandis</i>
, Noble	<i>Abies procera</i> (A. nobilis)
, Nordmann	<i>Abies nordmanniana</i>
, Red	<i>Abies magnifica</i>
, Shasta	<i>Abies magnifica</i>
, Turkish	
, White	<i>Abies concolor</i>
Hemlock, Canada	<i>Tsuga canadensis</i>
Pine, Austrian	<i>Pinus nigra</i>
, Lodgepole	<i>Pinus contorta latifolia</i>
, Monterey	<i>Pinus radiata</i>
, Ponderosa	<i>Pinus ponderosa</i>
, Scotch	<i>Pinus sylvestris</i>
, Southern (Longleaf)	<i>Pinus palustris</i>
, Virginia	<i>Pinus virginiana</i>
, White	<i>Pinus strobus</i>
Spruce, Black Hills	<i>Picea glauca</i>
, Colorado Blue	<i>Picea pungens</i>
, Norway	<i>Picea abies</i>
, White	<i>Picea glauca</i>

### Tank Mixes

#### **Vantage + Goal® 1.6E herbicide**

**Vantage:** up to 3.75 pints

**Goal 1.6E:** up to 2.5 pints

or

#### **Vantage + Goal® T/O 2-XL herbicide**

**Vantage:** up to 3.75 pints

**Goal T/O 2-XL:** 1.0-2.0 pints

(Not for use in California)

These tank mixes may be applied to control a broad spectrum of grass and broadleaf weeds in conifers and Christmas trees. Consult the **Goal 1.6E** and **Goal T/O 2-XL** labels for the list of grassy weeds and/or broadleaf weeds controlled. See previous pages for the minimum recommended rates of **Vantage** and see the **Goal 1.6E** and **Goal T/O 2-XL** label for minimum rates of **Goal 1.6E** and **Goal T/O 2-XL**. For season-long control, 2-3 applications may be needed. In some cases, reduced grass control may result when tank mixing **Vantage** with **Goal 1.6E** and **Goal T/O 2-XL**.

Apply a spray volume of 20 gallons per acre at 40 psi before conifer bud break or after conifer foliage has had an opportunity to harden off. Broadleaf weeds must be within the height indicated on the **Goal 1.6E** and **Goal T/O 2-XL** labels. Refer to **Goal** label for pre-emergence weed control application rates.

### Specific Restrictions and Limitations

Do not apply this tank mix when temperatures exceed 90° F.

Do not apply this tank mix to conifer seedlings less than 10 months old.

Do not apply this tank mix by aircraft equipment.

### **Vantage + Stinger® herbicide**

**Vantage:** 0.5-1.5 pints

**Stinger:** refer to manufacturer's label

A postemergence tank mix application of **Vantage + Stinger** will not only control a broad spectrum of grasses, but also certain broadleaf weeds such as Canada thistle, clover, vetch, knapweed and suppress other broadleaf weeds. Consult the **Stinger** labeling for a list of broadleaf weeds controlled.

This tank mix may be applied only over-the-top of the following actively growing trees: fir (balsam, Douglas, frasier, grand, noble), pine (lodgepole, ponderosa, scotch, white), and spruce (blue).

### Specific Restrictions and Limitations

In the Pacific Northwest, do not apply this tank mix in the first year of transplanting as injury (leaf curling) may occur.

Do not apply more than 0.5 pint of **Stinger** per acre on blue spruce.

Do not add a surfactant or oil concentrate to this tank mix as injury may occur.

### Nonbearing Food Crops, Ornamental and Nursery Plantings, Rights of Way, Nonfood Crop Areas, Noncrop Areas, and Fallow Land

Apply **Vantage** to nonbearing food crops, nursery liners, trees, shrubs, ornamentals, bedding plants, cut flowers, and ground covers including those listed in the **Appendix**. If species in the application site are not listed in the **Appendix**, **Vantage** may be applied as a directed spray away from the foliage of desired plants.

**Vantage** may also be applied to sites such as rights-of-ways, fallow land, noncrop areas and nonfood crop areas such as airports, industrial sites, roadsides, storage yards, and other areas listed in section I.

**General Information.** Repeat application if new germination or regrowth occurs.

### Ornamental Sites

### Tank Mixes

#### **Vantage + Basagran® T/O herbicide**

**Vantage:** up to 3.75 pints

**Basagran T/O:** up to 4 pints

or

#### **Vantage + Basagran® SG herbicide**

**Vantage:** up to 3.75 pints

**Basagran SG:** up to 18 ounces

These tank mixes may be applied as a directed spray to control yellow nutsedge, grass, and broadleaf weeds in nonbearing food crops and ornamental sites including trees, shrubs, bedding plants, and ground covers. This tank mix should be applied as a directed spray away from the foliage of desired plants. If any desirable plant foliage receives direct or indirect application, wash off immediately. The use of an oil concentrate as mentioned on the **Basagran T/O** and **Basagran SG** labels is not necessary in this tank mix. Over-the-top applications of this tank mix may be made to certain ground covers. Consult the **Basagran T/O** and **Basagran SG** labels for this listing.

## **Vantage® herbicide + Surflan® AS herbicide**

**Vantage:** up to 3.75 pints

**Surflan AS:** up to 4 pints

A tank mix of **Vantage + Surflan A.S.** may be applied to control weeds in ornamental sites including trees, shrubs and groundcovers.

## **Vantage + Fortune® herbicide**

**Vantage:** up to 3.75 pints

**Surflan AS:** up to 4 pints

A tank mix of **Vantage + Fortune** may be applied to control weeds in these states: AZ, NV, OR, and WA).

## **Roadsides, Rights of Way, and Nonfood Crop Alleyways**

(Not intended for domestic use, except by professional applicators)

**Vantage** will suppress the initiation and development of the seedheads of established tall fescue. Discoloration of the fescue will occur soon after application and may persist for 2-8 weeks depending on environmental conditions. Avoid applying to any tall fescue area where discoloration is aesthetically unacceptable.

**Timing:** Apply **Vantage** to tall fescue before the emergence of seedheads in the spring. Do not apply after May 1 in Alabama, Georgia, and Tennessee; timing may vary in other areas. Tall fescue must be one year old before the first application of **Vantage**.

**Rate:** Apply 1.5 pints per acre (0.6 ounces per 1,000 square feet) of **Vantage**.

**Spray volume:** Use 30-50 gallons per acre (5.5-9.0 pints per 1,000 square feet).

### **Restrictions and Limitations**

Do not make more than one application of **Vantage** to tall fescue per year.

Treated vegetation may not be used as feed, forage, hay, or silage. **Vantage** will not injure clovers, vetch, or other broadleaf plants that may be present.

## **Tree Farms**

### **ESTABLISHED TALL FESCUE**

#### **GROWTH SUPPRESSION:**

**Vantage** may be used in tree farms to suppress the growth of tall fescue when grown as a desired ground cover. Tall fescue must be actively growing at the time of **Vantage** application or injury may occur. Follow the directions on rates and timing closely.

#### **Timing**

Apply **Vantage** to tall fescue after it has had 4-6 inches of new growth, before the emergence of seedheads and before conifer bud break. Application from July 1 to mid August may be less effective, especially if day temperatures reach 90° F. Tall fescue must be one year old before the first application of **Vantage**.

**Rate:** Apply 3-3.75 pints of **Vantage** per acre (0.6-0.7 ounces per 1,000 square feet). For greater fescue suppression, up to 60 fluid ounces of **Vantage** can be used per acre (1.4 ounces per 1,000 square feet). Local environmental differences or growth differences at the time of application to tall fescue may cause results to be different from those desired. Users of **Vantage** are advised to begin using **Vantage** at the minimum recommended rate and adjust rates as local conditions and experience dictate. Additional applications may be made if extended growth suppression is desired.

## **Wildflowers**

**Vantage** may be used to control grass in native wildflowers on roadsides and in landscapes.

**Vantage** will reduce the competition from grasses on wildflower species. Grass competition can cause flower stand thinning, stunting and reduced seed production, reducing the aesthetic value and the resetting potential of the wildflower stand. Many wildflower species are tolerant of **Vantage** applications such as those listed in the **Appendix**. However, apply **Vantage** prior to blooming.

### **Application Timing**

Apply **Vantage** to grass after wildflowers have emerged, but not during flowering. Apply **Vantage** 4-6 weeks after wildflowers have emerged, but always base the application timing on grass size. Make broadcast applications according to the **Annual Grass Control with Vantage** and **Perennial Grass Control with Vantage** tables. A second application may be necessary if a new flush of grass occurs later in the growing season.

## **Turf, Lawns, Rights of Way**

### **FINE FESCUE GROWN FOR TURF SEED:**

(Not for use in California)

**Vantage** may be used to control annual and perennial grass weeds in fine fescue. On seedling centipedegrass, do not apply more than 1.5 pints per acre per application, or 3 pints per acre per season. On established centipedegrass, do not apply more than 2.25 pints per acre per application or 4.5 pints per acre per season. Applications should be made in the Pacific Northwest from November 1 to March 15 at the rates indicated in **Table 5**. Applying **Vantage** at other times of the year will generally result in reduced control of these problem grass weeds. **Vantage** does not control annual bluegrass or rattail fescue.

### **Restrictions and Limitations**

Do not apply **Vantage** to desirable tall fescue turf because injury may occur.

**Table 5. Application Rates for Pacific Northwest only**

Grass Species	Weed Size	Rate per Acre*
<b>Annual Grasses</b>		
Annual Ryegrass	4-8"	2.25 pints
Downy Brome	2-6"	3.75 pints
<b>Perennial Grasses</b>		
German Velvetgrass	2-4"	3-3.75 pints
Colonial and Highland Bentgrasses	2-4"	2.25-3.75 pints

\*also called cheatgrass

\*If regrowth occurs or new plants emerge, make a second application at the same rate and weed size.

## **Tank Mixes**

### **Vantage + Basagran® T/O herbicide**

**Vantage:** 2.25 pints

**Basagran T/O:** 2-4 pints

(Not applicable in California)

A tank mix of **Vantage** and **Basagran T/O** may be applied to control yellow nutsedge (nutgrass), grass, and broadleaf weeds in centipedegrass and fine fescue areas. This tank mix may be applied to established turf grass. Do not apply to newly seeded turf sites until the turf has become fully established. The use of oil concentrate in this tank mix is not recommended.



# **Appendix** **Tree Species Tolerant to Vantage® herbicide**

Acacia, Knife Leaf .....(*Acacia cultriformis*)  
 Arborvitae, Eastern ... (var. *Teehny*) (*Thuja occidentalis*)  
     Berkmans, Oriental .....(*Thuja Orientalis*)  
 Ash, Green .....(*Fraxinus pennsylvanicum*)  
     Mountain.....(*Sorbus aucuparia*)  
     Mountain.....(*Sorbus americana decora*)  
     White.....(*Fraxinus americana*)  
 Basswood, American .....(*Tilia americana*)  
 Berkman's, Oriental.....(*Thuja orientalis*)  
 Birch.....(*Betula sp.*)  
     Asian White ... (var. *Japonica*) (*Betula platyphylla*)  
     European White .....(*Betula pendula*)  
     paper.....(*Betula papyrifolia*)  
     River, Black or Red .....(*Betula nigra*)  
 Black Locust .....(*Robinia pseudoacacia*)  
 Bottle-brush.....(*Callistemon lanceolatus*)  
 Bottle Tree.....(*Brachychiton populneus*)  
 Brisbane Box Tree .....(*Tristania conferta*)  
 Cajeput Tree .....(*Melaleuca quinquenervia*)  
 Carob Tree .....(*Ceratonia siliqua*)  
 Carrot Wood .....(*Cupaniopsis anacardioides*)  
 Catalpa, Southern.....(*Catalpa bignonioides*)  
 Cherry Black .....(*Prunus serotina*)  
 Cherry, Carolina.....(*Prunus caroliniana "compacta"*)  
 Crabapple, Flowering.....(var. *Dalgo*, *Radiant*, *Red*  
     *Splendor*, *Royalty*, *Vanguard*, *Sylvestris*,  
     *Domestic*).....(*Malus sp.*)  
 Cypress, False.....(*Chamaecyparis pisifera*)  
     Leyland .....(*Cupressocyparis leylandii*)  
     Italian .....(*Cupressus sempervirens*)  
 Dogwood, Flowering.....(*Cornus florida*)  
     Silky .....(*Cornus amomum*)  
     Pagoda.....(*Cornus alternifolia*)  
 Elm, Chinese Evergreen.....(*Ulmus parvifolia*)  
 Eucalyptus (*Eucalyptus robusta*, *lehmannii*, *nicholi granis*)  
 Fir .....(*Abies sp.*)  
     Douglas .....(*Pseudotsuga menziesii*)  
     Frasier .....(*Abies fraseri*)  
     White .....(*Abies concolor*)  
 Goldenrain Tree.....(*Koelreuteria paniculata*)  
 Guava .....(*Psidium littorale*)  
     Pineapple .....(*Feijoa sellowiana*)  
 Gum, Blue .....(*Eucalyptus globulus*)  
     Lemon-scented.....(*Eucalyptus citriodora*)  
     Red Box .....(*Eucalyptus polyanthemus*)  
 Hackberry, Common .....(*Celtis occidentalis*)  
 Hemlock, Canadian.....(*Tsuga canadensis*)  
 Holly, Chinese ..... (var. *Bufordii*, *Rotunda*) (*Ilex cornuta*)  
     Hybrid.....(var. *Nellie Stevens*) (*Ilex sparsa*)  
     Japanese (var. *Convexa*, *Compacta*, *Helleri*,  
     .....(*Hoogendorn*) (*Ilex crenata*)  
     Yaupon .....(*Ilex vomitoria*)  
 Ironbark, Red .....(*Eucalyptus sideroxylon*)  
 Jacaranda.....(*Jacaranda mimosifolia*)  
 Kentucky Coffee Tree.....(*Gymnocladus dioica*)  
 Larch, European.....(*Larix europaea*)  
 Laurel, Indian.....(*Ficus microcarpa nitida*)  
 Linden .....(*Tilia americana*)  
     Littleleaf .....(*Tilia cordata*)  
 Locust, Honey.....(*Gleditsia triacanthos inermis*)  
 Loquat .....(*Eriobotrya japonica*)  
 Magnolia Southern.....(*Magnolia grandiflora*)  
 Maple, Red .....(*Acer rubrum*)  
     Japanese.....(*Acer palmatum*)  
     Silver .....(*Acer saccharinum*)  
 Mimosa Tree .....(*silk tree*) (*Albizia julibrissin*)

Myoporum .....(*Myoporum laetum*)  
 New Zealand Christmas Tree ..(*Metrosideros excelsus*)  
 Oak .....(*Quercus*)  
     Water .....(*Quercus nigra*)  
     Willow .....(*Quercus phellos*)  
 Olive Tree .....(*Olea europaea*)  
 Olive, Russian .....(*Elaeagnus angustifolia*)  
 Orchid Tree, Purple .....(*Bauhinia variegata*)  
 Osage Orange.....(*Maclura pomifera*)  
 Palm, Mediterranean fan .....(*Chamaerops humilis*)  
     Pygmy Date.....(*Phoenix roebelenii*)  
     Queen .....(*Arecastrum romanzoffianum*)  
     Sago.....(*Cycas revoluta*)  
     Windmill .....(*Tracheocarpus fortunei*)  
 Palo Verde, Green .....(*Parkinsonia aculeata*)  
 Paulownia Royal.....(*Paulownia tomentosa*)  
 Pear, Common.....(*Pyrus communis*)  
     Evergreen .....(*Pyrus kawakamii*)  
     Ussurian.....(*Pyrus ussuriensis*)  
 Pepper, Brazilian.....(*Schinus terebinthifolius*)  
 Pine, Aleppo.....(*Pinus halepensis*)  
     Austrian.....(*Pinus nigra*)  
     Canary Island.....(*Pinus canariensis*)  
     Caribbean Slash .....(*Pinus caribaea*)  
     Italian Stone.....(*Pinus pinea*)  
     Jack .....(*Pinus banksiana*)  
     Japanese Black .....(*Pinus thunbergii*)  
     Loblolly.....(*Pinus taeda*)  
     Mugho .....(*Pinus mugho*)  
     Ponderosa, Western yellow .....(*Pinus ponderosa*)  
     Red .....(*Pinus resinosa*)  
     Scotch .....(*Pinus sylvestris*)  
     Shore .....(*Pinus contra*)  
     Slash .....(*Pinus ellottii*)  
     Southern .....(*Pinus palustris*)  
     Virginia.....(*Pinus virginiana*)  
     White.....(*Pinus strobus*)  
     White, Japanese .....(*Pinus parviflora*)  
     Yew .....(*Podocarpus macrophyllus*)  
 Plum, Wild .....(*Prunus americana*)  
 Poplar, Hybrid .....(*Populus alba*)  
 Popular, Yellow, Tulip Tree .....(*Liriodendron tulipifera*)  
 Purpleleaf, Bailey Acacia.....(*Acacia baileyana*)  
 Redwood, Coast.....(*Sequoia sempervirens*)  
 Sandcherry, Western .....(*Prunus besseyi*)  
 Sensitive Plant .....(*Mimosa pudica*)  
 Silk Tree .....(*Albizia julibrissin*)  
 Spruce, Black Hills.....(var. *Densata*) (*Picea glauca*)  
     Colorado Blue .....(*Picea pungens*)  
     Norway .....(*Picea abies*)  
     White .....(*Picea glauca*)  
 Strawberry Tree.....(*Arbutus unedo*)  
 Sumac, Standard, African.....(*Rhus lancea*)  
 Sweet Gum.....(*Liquidambar styraciflua*)  
 Sycamore .....(*Platanus occidentalis*)  
 Tea Tree, Australian.....(*Leptospermum laevigatum*)  
 Tipu Tree .....(*Tipuana tipu*)  
 Walnut, Black.....(*Juglans nigra*)  
 Weeping Fig, Exotica .....(*Ficus benjamina*)  
 Willow .....(*Salix matsudana tortuosa*)  
     Australian.....(*Geijera parviflora*)  
     Desert.....(*Pittosporum phylliraeoides*)  
     Peppermint .....(*Agonis flexuosa*)  
 Yate, Bushy .....(*Eucalyptus lehmannii*)  
 Yew, English.....(*Taxus baccata*)

# Shrub Species Tolerant to Vantage® herbicide

Abelia, Glossy ..... (*Abelia grandiflora*)  
 Acacia, Bailey ..... (*Acacia baileyana*)  
 , Knife Leaf ..... (*Acacia cultriformis*)  
 , Prostrate ..... (*Acacia redolens*)  
 , Sydney Golden Wattle ..... (*Acacia longifolia*)  
 Andromeda ..... (*Pieris japonica*)  
 Arborvitae, Oriental ..... (*Platycladus orientalis*)  
 Arrowwood, Southern ..... (*Viburnum dentatum*)  
 Azalea, Mollis hybrid ..... (*R. x kosterianum*)  
 , Northern Lights Hybrid ..... (*R x kosterianum x R prinophyllum*)  
 Bamboo, Heavenly ..... (*Nandina domestica*)  
 Barberry, Japanese ..... (*Berberis thunbergii*)  
 , Korean ..... (*Berberis koreana*)  
 , Redleaf ..... (*Berberis virginiana*)  
 Bird of Paradise Bush ..... (*Caesalpinia gillesii*)  
 Bluebeard ..... (*Caryopteris clandonensis*)  
 Boxwood, Common ..... (*Buxus sempervirens*)  
 , African ..... (*Myrsine africana*)  
 , Japanese (var. *Japonica*) (*Buxus microphylla*)  
 Buckthorn, Glossy, Alder ..... (*Rhamnus frangula*)  
 Camellia ..... (*Camellia japonica*) (*Camellia sasanqua*)  
 Cedar, Eastern Red ..... (var. *Pyramidiiformis, canearii*)  
 ..... (*Juniperus virginiana*)  
 Cherry, Brush ..... (*Eugenia myrtifolia*)  
 , Manchu, Nanking ..... (*Prunus tomentosa*)  
 Chokecherry sp. .... (*Aronia meloelata*)  
 Copper Plant, Caribbean ..... (*Euphorbia cotinifolia*)  
 Cotoneaster, Bearberry ..... (*Cotoneaster dammerii*)  
 , Cranberry ..... (*Cotoneaster apiculata*)  
 , 'lowfast' Peking. (*Cotoneaster acutifolia*)  
 Coyote Bush ..... (*Baccharis pilularis*)  
 Cranberry Bush, American ..... (*Viburnum trilobum*)  
 , Golden ..... (*Viburnum opulus aureum*)  
 Crape Myrtle ..... (*Lagerstromia indica*)  
 Currant, Alpine ..... (*Ribes alpinum*)  
 Dogwood, Red Osier ..... (*Cornus stolonifera*)  
 Elaeagnus ..... (*Elaeagnus umbellata*)  
 Escallonia ..... (*Escallonia fradesii*) (*Escallonia rubia*)  
 Euonymus, Evergreen ..... (var. *Golden, Silver King*)  
 ..... (*Euonymus japonica*)  
 , Winged ..... (*Euonymus alata*)  
 Fig, Creeping ..... (*Ficus repens*)  
 Firethorn ..... (*Pyracantha graberi*)  
 Forsythia, Greenstem (*Forsythia viridissima bronxeniss*)  
 Flax, New Zealand ..... (*Phormium tenax*)  
 Fuchsia, Australian ..... (*Correa pulchella*)  
 Gardenia (var. *Mystery, Radicans*) (*Gardenia augusta*)  
 , Dwarf. (var. *Veitchii*) (*Gardenia jasminoides*)  
 Gold Vine, Guinea ..... (*Hibbertia scandens*)  
 Hakea ..... (*Hakea proteacea*)  
 Hawthorn, Indian ..... (*Phaphiolepis indica*)  
 Hibiscus, Blue ..... (*Alyogyne huegellii*)  
 , Chinese ..... (*Hibiscus rosa-sinensis*)  
 Holly, Dwarf Burford. (var. *Burfordii Nana*) (*Ilex cornuta*)  
 Honeysuckle, Bush ..... (*Diervilla lonicera*)  
 , Cape ..... (*Tecomaria capensis*)  
 Hydrangea ..... (*Hydrangea macrophylla*)  
 Jasmine, Asiatic ..... (*Trachelospermum asiaticum*)  
 , Orange ..... (*Murraya paniculata*)  
 , Star ..... (*Trachelospermum jasminoides*)  
 , Winter ..... (*Jasmine nudiflorum*)  
 Jessamine, Carolina ..... (*Gelsemium sempervirens*)  
 Jojoba ..... (*Simmondsia chinensis*)  
 Juniper, Chinese .... (var. *Maneyi, Old Gold, Phtzerana,*

Sea Green, Hekii, Nana, Torulosa, Phtzerana  
 (Aurea, Pfitzer, Golden Pfitzer) ..... (*Juniperus chinensis*)  
 , Creeping .... (var. *Bluechip, Hughes, Plumosa,*  
*Prince of Wales, Webber, Wiltonii, Bar Harbor,*  
*Andorra, Variegata, Youngstown Blue Rug*) (*Juniperus*  
*horizontalis*)  
 , Ozark ..... (*Juniperus sp.*)  
 , Rocky Mountain (var. *Blue Heaven, Welchii,*  
*Wichita Blue, Medova, Moffet, Pyramidal*  
*Green, Springtime, Admiral*) ..... (*Juniperus scopulorum*)  
 Juniper, Savin ..... (var. *Skandia, Arcadia, Broadmoor,*  
*Buffalo, Pepin*) (*Juniperus sabina*)  
 , Shore ..... (var. *Compacta*) (*Juniperus conferta*)  
 , Tam ..... (var. *Tamariscifolia*) (*Juniperus sabina*)  
 Lantana, Purple Trailing ..... (*Lantana montevidensis*)  
 Laurustinus ..... (*Viburnum tinus*)  
 Lemonade Berry ..... (*Rhus integrifolia*)  
 Lilac, Common Purple ..... (*Syringa vulgaris purpurea*)  
 Liriope, Green ..... (*Liriope muscari*)  
 , Variegated ..... (*Liriope muscari*)  
 Mickey Mouse Bush ..... (*Ochna serrulata*)  
 Mirror Plant ..... (*Coprosma repens*)  
 Mock Orange ..... (*Pittosporum tobira*)  
 Mountain Lilac, Carmel Creeper ..... (*Ceanothus griseus*)  
 Myrtle, Dwarf ..... (*Myrtus communis compacta*)  
 Nandina, Heavenly Bamboo ..... (*Nandina domestica*)  
 Nannyberry ..... (*Viburnum lantago*)  
 Ninebark (*Physocarpus opulifolius*) ..... (var. *Aureus*)  
 ..... (*Physocarpus opulifolius nanus*)  
 Oleander ..... (*Nerium oleander*)  
 Orchid, rockrose ..... (*Cistus purpureus*)  
 Oregon Grape ..... (*Mahonia aquifolium*)  
 Osmanthus, Holly-leaf ..... (*Osmanthus heterophyllum*)  
 , Sweet Olive ..... (*Osmanthus fragrans*)  
 Palm, Natal ..... (var. *Green Carpet Tuttle*)  
 ..... (*Carissa grandiflora*)  
 Pampas Grass ..... (*Cortaderia selloana*)  
 Photinia (*Photinia sp.*)  
 , Fraser ..... (*Photinia fraser*)  
 Pink Lady (*Rahioleis indica*)  
 Pink Powder Puff ..... (*Calliandra haematocephala*)  
 Pittosporum, Variegated Japanese (*Pittosporum tobira*  
 ..... *variegata*)  
 Plumbago, Cape ..... (*Plumbago capensis*)  
 Podocarpus, Yew ..... (*Podocarpus macrophyllum*)  
 Princess Flower ..... (*Tibouchina urvilleana*)  
 Privet ..... (*Ligustrum indica*)  
 , Glossy ..... (var. *Lake Tresca*) (*Ligustrum lucidum*)  
 , Japanese, Waxleaf ..... (*Ligustrum japonicum*)  
 , Texas ..... (*Ligustrum texanum*)  
 Purple Hop Bush ..... (*Dodonaea viscosa*)  
 Pyracantha ..... (*Pyracantha graberi*)  
 Rhododendron - Azalea ..... (var. *Hinocrimson,*  
*Hershey Red, Coral Blue, Hirtodigiri,*  
*Christmas Cheer, Pink Ruffle, Formosa*  
*Flame, Delaware Valley, White, New White*)  
 ..... (*Rhododendron sp.*)  
 Sandcherry, Purpleleaf ..... (*Prunus cistena*)  
 Serviceberry, Allegheny ..... (*Amelanchier laevis*)  
 , Saskatoon (var. *Regent*) (*Amelanchier alnifolia*)  
 Silver King ..... (*Euonymus japonica*)  
 Sky Flower, Brazilian ..... (*Duranta stenostachya*)  
 Snowball Bush ..... (*Viburnum opulus sterile*)  
 Spindle Tree ..... (*Euonymus kiautschowica*)  
 Spiraea ..... (*Spiraea vanilqiteij*)

(var: Anthony Waterer, Froebellii, Goldflame)  
 .....(Spiraea bumalda)  
 (var. Fairy Queen) .....(Spiraea trilobataioica)  
 (var Snowbound) .....(Spiraea nipponicaioica)  
 Star Plant, Lavender .....(Grewia occidentalis)  
 Tea Tree, Australian .....(Leptospermum laevigatum)  
 , New Zealand .....(var: RedGlow)  
 .....(Leptospermum scoparium)  
 Texas Ranger .....(Leucophyllum frutescens)  
 Toyon, California Holly .....(Hetermeles arbutifolia)  
 Trumpet Vine, Pink .....(Pandorea rosea)  
 Veronica .....(Hebe "Coed")  
 Viburnum, Japanese .....(Viburnum japonicum)  
 , Sandankwa .....(Viburnum suspensum)  
 Wayfaring Tree .....(Viburnum lantanoides)  
 Weeping Fig, Exotica .....(Ficus benjamina)  
 Wheelers Dwarf, Variegated .....(var: Wheller)  
 .....(Pittosporum tobira)  
 Yellow Bells .....(Tecoma stans)  
 Yesterday-Today-and-Tomorrow .....(Brunfelsia calycina)  
 Yew .....(Taxus cuspidata vigatum)

**Ornamentals and Bedding plants tolerant to Vantage herbicide**

Allysum .....(Alyssum sp.)  
 Asparagus, Myers (var. Meyer) (Asparagus densiflorus)  
 , Sprenger .....(var. Sprenger)  
 .....(Asparagus densiflorus)  
 Aster, New York .....(Aster novi-belgii)  
 , Stokes (var: Blue, White) (Stokesia cyanae)  
 Baby's Breath .....(var: Bristo Fairy)  
 .....(Gypsophila paniculata)  
 Begonia .....(Begonia semperflorens)  
 Bellflower, Tussock .....(var: Canterbury Bells)  
 .....  
 (Campanula carpatica)  
 Bittersweet, American .....(Calatrpa scandens)  
 Black-eyed Susan .....(var: Goldlocks) (Rudbeckia hirta)  
 Bleeding Heart .....(Dicentra spectabilis)  
 Butterfly Weed .....(Asclepias tuberosa)  
 Bower Vine .....(Pandorea jasminoides)  
 Cactus, Barrel .....(Echinocactus sp.)  
 Candytuft (Iberis sempervirens) (Iberis amara)  
 Canna .....(Canna sp.)  
 Cassia, Feathery .....(Cassia artemisioides)  
 Chrysanthemum, Marguarite .....(Chrysanthemum  
 frutescens) (Chrysanthemum indicum)  
 Cockscomb .....(Celosia argentea) (Canna)  
 Coleus .....(Coleus blumei)  
 Coneflower, Purple .....(var: Gloriosa Dairy)  
 .....(Echinacea purpurea)  
 Coralbells (Heuchera sanguinea)  
 Coreopsis .....(var: Sunray) (Coreopsis lanceolata)  
 Cup of Gold Vine .....(Solandra maxima)  
 Daffodil .....(Narcissus spp.)  
 Dahlia .....(Dahlia pinnata)  
 Daisy Bush .....(Euryops pectinatus)  
 , Blue .....(Felicia amellikoides)  
 Daisy, Shasta (var: Alaska) (Chrysanthemum maximum)  
 Daylily .....(Hemerocallis hybrids)  
 Dianthus .....(Dianthus deltoides)  
 Dragonhead, False .....(Physostegia virginiana)  
 Dusty Miller .....(Centaurea cineraria)  
 Fern, Sprenger Asparagus .....(Asparagus densiflorus)

Sprengeril)  
 Fescue, Blue .....(Festuca ovina)  
 Flowering tobacco .....(Nicotiana sp.)  
 Fountain Grass, Red .....(Pennisetum setaceum)  
 Gazania .....(Gazania ringens leucolaena) (Gazania sp.)  
 Geranium (Geranium sp.)  
 , Martha Washington .....(Pelargonium  
 domesticum)  
 Gerbera Daisy .....(Gerbera jamesonii)  
 Geum .....(var: Lady Strathedon, Mrs. Bradshaw,  
 Mrs. Bradshaw Improved) (Geum quellyon)  
 Gladiolus .....(Gladiolus sp.)  
 Heather, False .....(Cuphea hyssopifolia)  
 Honeysuckle, Amar .....(Lonicera maachii)  
 , Fly (var: Emerald Mound, Clavey's Dwarf)  
 .....  
 (Lonicera xylosteum)  
 , Japanese .....(Lonicera japonica)  
 , Morrow .....(Lonicera morrowii)  
 , Tatarian (var: Zabeli) (Lonicera tatarica)  
 Hopseed Bush, Purple .....(var Purplea)  
 .....(Dodonaea viscosa)  
 Impatiens .....(Impatiens sp.)  
 Iris .....(Iris sp.)  
 , African .....(Dietes bicolor)  
 Ivy, Grape .....(var: Ellen Danica) (Cissus rhombifolia)  
 Jack-in-the-Pulpit .....(Arisaemia pusillum)  
 .....Mrs. Bradshaw Improved)  
 Jade Plant .....(Crassula argentea)  
 Jasmine, Madagascar .....(Stephanotis floribunda)  
 Lamb's Ear .....(Stachys lanata)  
 Lavender, English .....(Lavandula vera)  
 , French .....(Lavandula dentata)  
 , Cotton .....(Santolina chamaecyparissus)  
 Lilac, Chinese .....(Syringa chinensis)  
 , Common Purple (var: Charles Joly, Ludwig  
 Spaeth, Jay Tree)  
 (Syringa vulgaris purpurpa)  
 , Meyer .....(var: Palibin) (Syringa sp.)  
 , Korean .....(var: Miss Kim) (Syringa patula)  
 Lilac, Mountain .....(Ceanothus griseus)  
 Lily-of-the-Nile, Peter Pan .....(Agapanthus africanus)  
 Lily-of-the-Valley .....(Convallaria majalis)  
 Lobelia .....(Lobelia erinus)  
 Marigold .....(Tagetes sp.)  
 Mirror Plant .....(Coprosma baueri)  
 , Variegated .....(Coprosma repens)  
 Moneywort, Creeping Jenny .....(Lysimachia nummularia)  
 Moss, Rose .....(Portulaca grandiflora)  
 , Sandwort .....(Arenaria verna)  
 Pansy, Johnny-Jump-Up .....(Viola tricolor)  
 Pepper, Ornamental .....(Capsicum sp.)  
 Periwinkle, Madagascar .....(Catharanthus roseus)  
 .....(Vinca minor)  
 Petunia .....(Petunia sp.)  
 Phlox, Perennial .....(Phlox paniculata)  
 Plantain Lily .....(Hosta sp.)  
 Purple Loosestrife .....(var: Morden's Gleam)  
 .....(Lythrum virgatum)  
 Raspberry Ice .....(Bougianvillea sp.)  
 Sage .....(Salvia greggii)  
 Sea Pinks, Thrift .....(A. meria maritima)  
 Sedum, Stonecrop .....(Sedum rubrotinctum)  
 .....(Lavender cotton)  
 Shrimp Plant .....(Justicia brandegeana)  
 Sky Flower, Brazilian .....(Duranta stenostachya)

Snail Vine.....	( <i>Vigna caracalla</i> )
Snapdragon.....	( <i>Antirrhinum majus</i> )
Speedwell, Spike.....	( <i>Veronica spicata</i> )
Statice, Perennial.....	( <i>Limonium perezii</i> )
Stock.....	( <i>Mattiola incana</i> )
Sweet Grass.....	( <i>Acorus gramineus</i> )
Sweet William.....	( <i>Dianthus barbatus</i> )
Transvaal Daisy.....	( <i>Gerbera jamesonii</i> )
Trumpet Vine, Blood red.....	( <i>Distictis buccinatoria</i> )
, Lavender.....	( <i>Clytostoma callistegioides</i> )
, Pink.....	( <i>Pandorea rosea</i> )
Tulip.....	( <i>Tulipa</i> spp.)
Verbena.....	( <i>Verbena</i> sp.)
Wandering Jew.....	( <i>Tradescantia</i> sp.)
Wisteria.....	( <i>Wisteria sinensis</i> )
Yarrow (var: Cerise Queen).....	( <i>Achillea millefolium</i> )
, Debutante.....	( <i>Achillea taygetea</i> v.)
Yellow Trumpet.....	( <i>Macfadyena unguis-cati</i> )
Zinnia.....	( <i>Zinnia elegans</i> )

**Ground covers tolerant to Vantage® herbicide**

Aaron's Beard.....	( <i>Hypericum calycinum</i> )
Aptenia (var: Red Apple).....	( <i>Aptenia cordifolia</i> )
Bergenia, Winter-blooming.....	( <i>Bergenia crassifolia</i> )
Bugleweed.....	( <i>Ajuga reptans</i> )
Capeweed.....	( <i>Arctotheca calendula</i> )
Carpathian, Harebell.....	( <i>Campanula carpatica</i> )
Cinquefoil, Spring.....	( <i>Potentilla tabernaemontani</i> )
Coyote brush (var: Twin Peaks).....	( <i>Baccharis pilularis</i> )
Crownvetch.....	( <i>Coronilla varia</i> )
Cushion Bush.....	( <i>Calcecephalus brownii</i> )
Daisy, Trailing African, Freeway.....	( <i>Osteospermum</i> )
Daisy, White African.....	( <i>Osteospermum fruticosum alba</i> )
Gazania, Trailing.....	( <i>Gazania regens leucolaena</i> )
Green Carpet.....	( <i>Herniaria glabra</i> )
Ivy, Algerian.....	( <i>Hedera canariensis</i> )
Ivy, Boston.....	( <i>Parthenocissus tricuspidata</i> )
Ivy, English.....	( <i>Hedera helix</i> ) (var: California)
Ivy, Grape.....	(var: Ellen Danica) ( <i>Cissus rhombifolia</i> )
Ivy, Hahn's (var: Hahnii).....	( <i>Hedera helix</i> )
Lantana, Lavender.....	( <i>Lantana montevidensis</i> )
Lily-turf, Big Blue.....	( <i>Liriope muscari</i> )
Lippla.....	( <i>Phyla nodiflora</i> )
Mondo Grass.....	( <i>Ophiopogon japonicus</i> )
Myoporum (var: Prostratum).....	( <i>Myoporum parvifolium</i> )
Pachysandra.....	( <i>Pachysandra terminalis</i> )
Periwinkle.....	( <i>Vinca major</i> )
Plumbago, Dwarf.....	( <i>Ceratostigma plumbaginoides</i> )
Pork and Beans.....	( <i>Sedum rubrotinctum</i> )
Rosea Ice Plant.....	( <i>Drosanthemum floribundum</i> )
Rosemary, Dwarf.....	(var: Prostratus) ( <i>Rosmarinus officinalis</i> )
Rupture Wort.....	( <i>Herniaria glabra</i> )
St. Johnswort, Creeping.....	( <i>Hypericum calycinum</i> )
Stonecrop, Sedum.....	( <i>Sedum rubrotinctum</i> )
Verbena.....	( <i>Verbena officinalis</i> )
Verbena, Blue.....	( <i>Verbena peruviana</i> )

**Wildflowers tolerant to Vantage**

African daisy.....	<i>Dimorphotheca aurantiaca</i>
Baby blue eyes.....	<i>Nemophila insignis</i>
Baby snapdragon.....	<i>Linaria macrocarpa</i>
Baby's breath.....	<i>Gypsophila muralis</i>

Bachelor button.....	<i>Centaurea cyanus</i>
Bird's eyes.....	<i>Gilia tricolor</i>
Black eyed Susan.....	<i>Rudbeckia hirta</i>
Blanketflower.....	<i>Gaillardia aristata</i>
Blue Fescue.....	<i>Festuca ovina glauca</i>
Blue flax.....	<i>Linum lewisii</i>
Butterflyweed.....	<i>Asclepias tuberosa</i>
Calendula.....	<i>Calendula officinalis</i>
California poppy.....	<i>Eschscholzia californica</i>
Calliopsis.....	<i>Coreopsis tinctoria</i>
Candytuft.....	<i>Iberis sempervirens</i>
Carnation.....	<i>Dianthus</i>
Catchfly.....	<i>Silene armeria</i>
Chicory.....	<i>Chicory intybus</i>
Chinese houses.....	<i>Collinsia heterophylla</i>
Columbine.....	<i>Aquilegia</i> spp.
Corn poppy.....	<i>Papaver rhoeas</i>
Cornflower.....	<i>Centaurea cyanus</i>
Cosmos.....	<i>Cosmos bipinnatus</i>
Creeping daisy.....	<i>Hesperis matronalis</i>
Dames rocket.....	<i>Hesperis matronalis</i>
Drummond phlox.....	<i>Phlox drummondii</i>
Dwarf primrose.....	<i>Oenothera</i> sp.
Firewheel.....	<i>Gaillardia pulchella</i>
Five spot cornflower.....	<i>Centaurea</i> sp.
Foxglove.....	<i>Digitalis purpurea</i>
Godetia.....	<i>Clarkia amoena</i>
Grayhead coneflower.....	<i>Echinacea pallida</i>
Hard fescue.....	<i>Festuca longifolium</i>
Indian blanket.....	<i>Gaillardia pulchella</i>
Indian paintbrush.....	<i>Castilleja coccinea</i>
Jewels of Opar.....	<i>Talinum paniculatum</i>
Johnny-jump-up.....	<i>Viola pedata</i>
Lance-leaved coreopsis.....	<i>Coreopsis lanceolata</i>
Lemon mint.....	<i>Monarda citriodora</i>
Liatris.....	<i>Liatris spicata</i>
Lupine.....	<i>Lupinus</i> spp.
Moss verbena.....	<i>Verbena tenuisecta</i>
New England aster.....	<i>Aster novi-anglae</i>
Nodding catchfly pink.....	<i>Silene</i> sp.
Oxeye daisy.....	<i>Chrysanthemum leucanthemum</i>
Painted daisy.....	<i>Chrysanthemum carinatum</i>
Perennial lupine.....	<i>Lupinus perennis</i>
Plains coreopsis.....	<i>Coreopsis tinctoria</i>
Poor man's weather glass.....	<i>Machaeranthera tanacetifolia</i>
Prairie aster.....	<i>Machaeranthera tanacetifolia</i>
Purple coneflower.....	<i>Echinacea purpurea</i>
Purpleknot toadflax.....	<i>Linaria</i> sp.
Queen Anne's lace.....	<i>Daucus carota</i>
Red ribbons.....	<i>Clarkia concinna</i>
Rocket larkspur.....	<i>Delphinium ajacis</i>
Sainfoin.....	<i>Conobrychis vicifolia</i>
Sand bluebonnet.....	<i>Lupinus subcarnosus</i>
Scarlet flax.....	<i>Linum rubrum</i>
Showy primrose.....	<i>Oenothera speciosa</i>
Siberian wallflower.....	<i>Cheiranthus</i> spp.
Spurred snapdragon.....	<i>Linaria macrocarpa</i>
Stock.....	<i>Matthiola maritima</i>
Sulfur cosmos.....	<i>Cosmos sulfureus</i>
Sweet alyssum.....	<i>Lobularia maritima</i>
Sweet William.....	<i>Dianthus barbatus</i>
Texas bluebonnet.....	<i>Lupinus texensis</i>
Tickseed.....	<i>Coreopsis lanceolata</i>
Tidy tips.....	<i>Layia platyglossa</i>
Virginian stock.....	<i>Malcolmia maritima</i>
Wallflower.....	<i>Cheiranthus allionii</i>
White yarrow.....	<i>Achillea millefolium</i>

In limited testing with the following plants, some unacceptable phytotoxicity has been found, though usually occurring at application rates above those recommended on the product label.

**Trees**

Red Oak ..... *Quercus rubra*  
White Oak ..... *Quercus alba*

**Shrubs**

Azalea (var Snow) ..... *Rhododendron sp*  
Potentilla ..... *Potentilla fruticosa*  
(var Jackmanni, K. VanDyke) ... *Potentilla verna*  
Privet, Japanese ..... *Ligustrum japonica*

**Ornamental**

Snow-in-summer ..... *Cerastium tomentosum*

**Nonbearing Food Crops and Nursery Liners  
Tolerant to Poast® herbicide**

Almonds  
Apples  
Apricots  
Asparagus  
Avocados  
Blackberries  
Blueberries  
Cherries  
Crabapples  
Cranberries  
Dates  
Figs  
Grapes  
Grapefruits  
Lemons  
Limes  
Macadamias  
Nectarines  
Olives  
Oranges  
Peaches  
Peanuts, Perennial\*  
Pears  
Pecans  
Pistachios  
Plums  
Pomegranates  
Prunes  
Raspberries  
Tangelos  
Tangerines  
Walnuts

Do not apply to nonbearing food crops within 1 year of harvest.

**Weeds listed in this label**

Common Name	Scientific Name
Bahiagrass	<i>Paspalum notatum</i>
Barnyardgrass (Watergrass)	<i>Echinochloa crus-galli</i>
Bentgrass, (Highland/Colonial)	<i>Agrostis tenuis</i>
Bermudagrass (Wiregrass)	<i>Cynodon dactylon</i>
Bluegrass, Annual	<i>Poa annua</i>
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>
Brome, Downy	<i>Bromus tectorum</i>
Centipede Grass	<i>Eremochloa ophiuroides</i>
Crabgrass, Large	<i>Digitaria sanguinalis</i>
, Smooth	<i>Digitaria ischaemum</i>
Cupgrass, Woolly	<i>Eriochloa villosa</i>
Fescue, Fine	<i>Festuca sp.</i>
, Chewings	<i>Festuca rubra</i>
, Creeping Red	<i>Festuca rubra</i>
, Hard	<i>Festuca longifolia</i>
, Rattail	<i>Festuca myuros</i>
, Sheep	<i>Festuca ovina</i>
, Tall	<i>Festuca arundinacea</i>
Foxtail, Giant (Pigeongrass)	<i>Setaria faberi</i>
, Green	<i>Setaria viridis</i>
, Yellow	<i>Setaria glauca</i>
Goosegrass	<i>Eleusine indica</i>
Johnsongrass	<i>Sorghum halepense</i>
Junglerice	<i>Echinochloa colonum</i>
Lovegrass	<i>Eragrostis cilianensis</i>
Orchardgrass	<i>Dactylis glomerata</i>
Panicum, Browntop	<i>Panicum fasciculatu</i>
, Fall	<i>Panicum dichotomiflorum</i>
, Texas	<i>Panicum texanum</i>
Quackgrass	<i>Agropyron repens</i>
Red Sprangletop	<i>Leptochloa filiformis</i>
Ryegrass, Annual	<i>Lolium multiflorum</i>
Sandbur, Field	<i>Cenchrus incertus</i>
Shattercane/Wildcane	<i>Sorghum bicolor</i>
Torpedograss	<i>Panicum repens</i>
Velvetgrass, German	<i>Holcus mollis</i>
Volunteer Barley	<i>Hordeum vulgare</i>
Oats	<i>Avena sativa</i>
Rye	<i>Secale Cereale</i>
Wheat	<i>Triticum aestivum</i>
Wild Oats	<i>Avena fatua</i>
Wild Proso Millet	<i>Panicum miliaceum</i>
Wirestem Muhly	<i>Muhlenbergia frondosa</i>
Witchgrass	<i>Panicum capillare</i>

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### Sites:

This product can be used on the following sites:

Airports  
Bedding plants  
Centipedegrass and fine fescue turf  
Drug and medicinal crops  
Electrical transformer stations  
Fences and hedgerows  
Fine fescue seed production  
General indoor/outdoor sites  
Ground covers  
Industrial sites  
Other paved areas  
Perennial peanuts (nonfood)  
Pipeline pumping stations  
Potting and top soils  
Public buildings  
Recreation areas  
Rights-of-ways  
Roadsides  
Sewage disposal areas  
Shrubs  
Storage yards  
Trees, Christmas trees  
Uncultivated agricultural areas  
Wildflowers

Look inside for complete **Restrictions and Limitations** and **Application Instructions**.

### Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF Corporation ("BASF") or the Seller. All such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above. BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL BASF OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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BASF Corporation  
P.O. Box 13528  
Research Triangle Park, NC 27709

# BASF

PM 25 7969-88 2/12/99  
**BASF**

Page 15822  
ST Date: 1-22-98  
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for 98  
NVA 98-4-39-0102  
LH11/18/98

# Torpedo<sup>®</sup>

## herbicide

**Active Ingredient:**

Sethoxydim\*: [2-[1-(ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one].....13.0%

**Inert Ingredients:** .....87.0%

**Total** .....100.0%

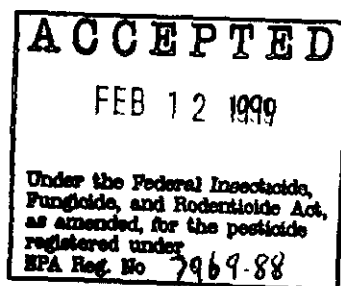
\*Equivalent to 1.0 pound of sethoxydim per gallon

EPA Reg. No. 7969-88

EPA Est. No. 34313-TX-01

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**



See the attached booklet for complete **Precautionary Statements, Statement of Practical Treatment, Directions For Use, and Conditions of Sale and Warranty.**

**Net contents: 2.5 gallons (9.46 liters)**

BASF Corporation  
P.O. Box 13528, Research Triangle Park, NC 27709

## Precautionary Statements

### Hazards to Humans and Domestic Animals

**Caution.** Causes moderate eye injury. Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes, or clothing.

### Statement of Practical Treatment

**If in eyes:** Flush with plenty of water. Call a physician if irritation persists.

**If on skin:** Wash with plenty of soap and water. Get medical attention.

**If swallowed:** Promptly drink a large quantity of milk, egg whites, gelatin solution, or, if these are not available, large quantities of water. Avoid alcohol.

### 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 **E** on an EPA chemical resistance category selection chart.

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, or viton  $\geq 14$  mils
- Shoes plus socks

Wash thoroughly with soap and water after handling. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not re-use them. 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 Controls 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.
- 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

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

### Endangered Species Concerns

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of federal law.

## Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

All applicable directions, restrictions, precautions and **Conditions of Sale and Warranty** are to be followed. This labeling must be in the user's possession during application.

## 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), notification to workers, and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of **12 hours**.

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, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, or viton  $\geq 14$  mils
- Shoes plus socks

## Storage and Disposal

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

**Pesticide Storage:** Do not store below 32° F or above 100° F. Store in a dry place away from heat or open flame. Avoid contamination of feed or foodstuffs.

**Pesticide Disposal:** Pesticide wastes are toxic. Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

#### Container Disposal:

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



## In Case of Emergency

In case of large-scale spillage regarding this product, avoid contact, isolate area, and keep out animals and unprotected persons. Confine spill and call:

CHEMTREC 800-424-9300  
BASF Corporation 800-832-HELP

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment.
- Your local poison control center (hospital).
- BASF Corporation (800-832-HELP).

## I. General Information

**Torpedo® herbicide** is a selective, broad spectrum, postemergence herbicide for control of annual and perennial grass weeds in bearing and nonbearing grapefruit, lemon, lime, orange, tangerine, and tangerine hybrid crops. **Torpedo** does not control sedges or broadleaf weeds. Turfgrasses and corn are susceptible to **Torpedo**. Because all grass crops as well as ornamental grasses can be injured or killed by **Torpedo**, avoid all direct or indirect contact with any desired grass plants.

### Mode of Action

**Torpedo** rapidly enters the target weed through its foliage and translocates throughout the plant. The effects range from slowing or stopping growth (generally within 2 days), to foliage reddening and leaf tip burn. Subsequently, foliage burnback may occur. These symptoms will generally be observed within 3 weeks depending on environmental conditions.

## Crop Tolerance

**Nonbearing Citrus:** Citrus crops are tolerant to **Torpedo**, but under some conditions, a slight leaf speckling or burn can occur. Citrus plants will outgrow these symptoms and later growth is not affected.

**Bearing Citrus: Torpedo** should be directed away from citrus foliage as well as developing and mature fruit because injury may occur under certain conditions.

### Irrigation

In irrigated areas, it may be necessary to irrigate before treatment to ensure active weed growth.

### Coverage

Apply **Torpedo** to the foliage of grasses on a spray-to-wet basis uniformly and completely because large leaf canopies shelter smaller weeds and can prevent adequate spray coverage. Do not spray to the point of runoff.

### Cultivation

Do not cultivate during the time between 5 days before and 7 days after applying **Torpedo**. Cultivating 7-14 days after treatment may help provide season-long control.

### Cleaning Spray Equipment

Clean spray equipment thoroughly using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions before and after applying this product.

## II. Application Instructions

**Torpedo® herbicide** should be applied to actively growing weeds at the rates and growth stages listed. Direct the nozzles toward the grass foliage because soil application is ineffective. Heavy tree growth that covers and protects grass weeds from spray coverage may reduce the activity of **Torpedo**.

The most effective control will result from making postemergent applications of **Torpedo** actively growing grasses before tillering or seed head formation.

Do not apply when conditions favor drift from target area or when windspeed is greater than 10 mph. To suppress grasses in citrus grove alleys, apply 8-10 ounces of **Torpedo** per treated acre.

### Ground Application (Broadcast)

#### Row Middles:

**Water Volume:** Use 10-20 gallons of spray solution. Under most conditions, 10 gallons per acre is optimum.

**Spray Pressure:** Use 40-60 psi (measured at the boom, not at the pump or in the line). When crop and weed foliage is dense, use a maximum of 20 gallons of water and 60 psi.

**Application Equipment:** Use standard high-pressure pesticide flat fan or hollow cone nozzles spaced up to 20 inches apart. Do not use flood, whirl chamber, or controlled droplet applicator (CDA) nozzles as erratic coverage can cause inconsistent weed control. Refer to the nozzle manufacturer's directions for recommended height.

Do not use selective application equipment such as recirculating sprayers or wiper applicators.

## Spot or Small Area Application

To control or suppress grasses when using knapsack sprayers or high-volume equipment (handguns or other suitable nozzle arrangement), prepare a solution of **Torpedo** plus oil concentrate in water according to **Table 2, Spot Treatment Application**.

**Concentration in Spray Solution.** The best spray application will be a fine spray that will cover the leaves but not drench them and run off. The best performance is obtained by using 10-20 gallons of spray solution per acre with a concentration of 1.5-2.5% v/v of **Torpedo**.

Do not make spot treatments in addition to broadcast treatments.

**Table 2. Spot Treatment Application Concentration in Spray Solution**

Grasses	V/V Concentration in Spray Solution <sup>1</sup>	
	Torpedo	Oil Concentrate
Annual up to 6" height	1.5%	1%
Annual up to 12" height	2.25%	1%
Perennial <sup>2</sup>	2.25% <sup>3</sup>	1%

<sup>1</sup> Refer to **Table 3 (Spot Treatment Dilution)** for preparing the desired solution volume.

<sup>2</sup> Repeat application as needed.

<sup>3</sup> For wirestem muhly, use 1.5% concentration up to a maximum weed size of 6 inches.

**Table 1. Broadcast Application Rates and Timings**

Grass	Maximum Weed Height	
	2.25 Pints per Acre*	3.75 Pints per Acre*
Barnyardgrass	6"	12"
Bermudagrass (wiregrass)	6"	up to 6" runners
Crabgrass, Large	6"	12"
, Smooth	6"	12"
Foxtails, Giant	6"	12"
, Green	6"	12"
, Yellow	6"	12"
Goosegrass	6"	12"
Guineagrass	6"	8"
Johnsongrass, Rhizome	6"	20"
, Seedling	6"	12"
Junglerice	6"	12"
Millet, Wild Proso	6"	12"
Orchardgrass, Seedling	6"	12"
Panicum, Fall	6"	12"
, Texas	6"	12"
Shattercane/Wildcane	6"	12"
Signalgrass, Broadleaf	6"	12"
Sprangletop, Red	6"	12"
Fescue, Tall (Seedling)	6"	12"
Torpedograss	6"	8"
Witchgrass	6"	12"
Cupgrass, Woolly	6"	12"

\* Repeat applications as needed. Do not apply more than 15 pints per season.

Table 3. Spot Treatment Dilution Table

Spray Solution Volume	Amount of Product to be Added		
	Torpedo (1.5% v/v)	Torpedo (2.25% v/v)	Oil Concentrate (1% v/v)
1 gallon	1.9 fl. oz.	2.9 fl. oz.	1.3 fl. oz.
3 gallons	5.8 fl. oz.	8.75 fl. oz.	3.8 fl. oz.
5 gallons	9.5 fl. oz.	14.5 fl. oz.	6.4 fl. oz.

2 tablespoons = 1 fluid ounce

### III. Additives

To achieve consistent weed control, always use crop oil concentrate at a maximum rate of 2 pints per acre

#### Oil Concentrate

A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all of the following criteria:

- be nonphytotoxic,
- contain only EPA-exempt ingredients,
- provide good mixing quality in the jar test, and
- be successful in local experience.

The exact composition of suitable products will vary; however, vegetable and petroleum oil concentrates should contain emulsifiers to provide good mixing quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils. Do not use citrus petroleum sprays (435/455 oil) in place of crop oil concentrate as this will lead to unacceptable performance. For more information, see

#### Compatibility Test for Mix Components.

Table 4. Additive Rates Per Acre

Additive	Ground Application
Oil Concentrate	2 pints

#### Compatibility Test for Mix Components

Add components in the following sequence using 2 teaspoons for each pound or 1 teaspoon for each pint of recommended label rate per acre. PH buffering performance can be improved by buffering the spray solution to a pH of 5. Use a buffering agent or ammonium sulfate to achieve the desired pH.

- 1) **Water:** — For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes, adjust rates accordingly. Use only water from the intended source at the source temperature.
- 2) **Products in PVA bags:** — Cut an opening in the water-soluble PVA bag just large enough to use a teaspoon for measuring purposes. Use the opened water-soluble PVA bag first when preparing spray solution. Cap the jar and invert 10 cycles.
- 3) **Water-dispersible products:** — (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions) Cap the jar and invert 10 cycles.
- 4) **Water-soluble products:** — Cap the jar and invert 10 cycles.
- 5) **Emulsifiable concentrates:** — (Torpedo, oil concentrate, or methylated seed oil when applicable) Cap the jar and invert 10 cycles.

- 6) **Water-soluble additives:** — (AMS or UAN when applicable) Cap the jar and invert 10 cycles.
- 7) Let the solution stand for 15 minutes.
- 8) **Evaluate** the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. Do not use any spray solution that could clog spray nozzles.

### IV. Mixing Order

- 1) **Water:** Begin by agitating a thoroughly clean sprayer tank half full of clean water.
- 2) **Products in PVA bags:** Rinse the tank thoroughly before adding any material in PVA bags as boron residue will prevent adequate mixing. Place the water-soluble PVA bag into the mixing tank. The water-soluble PVA bag will dissolve in water to allow the contents to disperse. Wait until all water-soluble PVA bags have fully dissolved and the herbicide is evenly mixed in the spray tank before continuing.
- 3) **Water-dispersible products:** (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
- 4) **Water-soluble products**
- 5) **Emulsifiable concentrates (Torpedo, oil concentrate, or methylated seed oil when applicable)**
- 6) **Water-soluble additives** (AMS or UAN when applicable)
- 7) **Remaining quantity water**

Maintain constant agitation during application.

### V. Tank Mixing Application

BASF does not recommend using tank mixes other than those listed on BASF labeling. Physical incompatibility, reduced weed control, or crop injury may result from mixing **Torpedo® herbicide** with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. Local agricultural authorities may be a source of information when using other than BASF recommended tank mixes.

**Torpedo** may be tank mixed with diuron herbicides and certain other preemergence herbicides. Consult your local BASF representative or agricultural advisor for additional information.

VI. General Restrictions and Limitations — All Crops

- **Maximum seasonal use rate:** Do not apply more than a **total of 15 pints of Torpedo® herbicide** per acre, per season, including spot treatments.
- **Preharvest Interval: 15 days**
- **Restricted Entry Interval (REI): 12 hours.**
- Do not apply **Torpedo** with another pesticide whose label cautions against use with oil adjuvants.
- Do not use **selective application equipment** such as recirculating sprayers, wiper applicators, or **shielded applicators**.
- **Rainfast Period: Torpedo** is rainfast 1 hour after application.
- **Stress:** Do not apply to grasses or crops under stress such as stress due to lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, or widely fluctuating temperatures, as unsatisfactory control will probably result.
- Do not apply to crops that show **injury** (leaf phytotoxicity or plant stunting) produced by any other prior herbicide applications, because this injury may be enhanced or prolonged.
- Do not apply through any type of **irrigation** equipment.
- Do not allow applications of **Torpedo** to contact developing or mature fruit.

Table 5. Crop-Specific Restrictions and Limitations

Crop	Minimum Time from Application to Harvest (PHI)	Maximum Rate Per Acre Per Application	Maximum Rate Per Acre Per Season	Livestock Grazing or Feeding	Aircraft Application
Citrus	15 days	3.75 pints	15 pints	Yes*	No

\* Pulp and waste may be fed to animals.

### Crops:

This product can be used on the following crops:

Grapefruits  
Lemons  
Limes  
Oranges  
Tangerines & Tangerine Hybrids

Look inside for complete **Restrictions and Limitations** and **Application Instructions**.

### Weeds listed in this label:

Common Name	Scientific Name
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bermudagrass	<i>Cynodon dactylon</i>
Crabgrass, Large	<i>Digitaria sanguinalis</i>
, Smooth	<i>Digitaria ischaemum</i>
Cupgrass, Woolly	<i>Eriochloa villosa</i>
Fescue, Tall	<i>Festuca arundinacea</i>
Foxtail, Giant	<i>Setaria faberi</i>
, Green	<i>Setaria viridis</i>
, Yellow	<i>Setaria glauca</i>
Goosegrass	<i>Eleusine indica</i>
Guineagrass	<i>Panicum maximum</i>
Johnsongrass	<i>Sorghum halepense</i>
Junglerice	<i>Echinochloa colonum</i>
Lovegrass/Stinkgrass	<i>Eragrostis ciliaris</i>
Millet, Wild Proso	<i>Panicum miliaceum</i>
Orchardgrass	<i>Dactylis glomerata</i>
Panicum, Fall	<i>Panicum dichotomiflorum</i>
, Texas	<i>Panicum texanum</i>
Shattercane/Wildcane	<i>Sorghum bicolor</i>
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>
Sprangletop, Red	<i>Leptochloa filiformis</i>
Torpedograss	<i>Panicum repens</i>
Witchgrass	<i>Panicum capillare</i>

### Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF Corporation ("BASF") or the Seller. All such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above. BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL BASF OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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BASF Corporation  
P.O. Box 13528  
Research Triangle Park, NC 27709

# BASF

# Poast Plus<sup>®</sup>

herbicide

## For Use as a Preplant Burndown Treatment in Corn

EPA Reg. No 7969-88

All applicable directions, restrictions, precautions and **Conditions of Sale and Warranty** on the EPA-registered label are to be followed. This labeling must be in the possession of the user at the time of application.

### Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

### Application Instructions

Follow the application timings for weed sizes as specified on each product label. Follow the spray volume and pressure recommendations as described on the **Poast Plus herbicide** label.

Apply **Poast Plus** at 1.5 pint per acre at 30 or more days prior to planting corn to actively growing grasses. Use additives according to the **Spray Additives** section of this label.

Read and follow the applicable **Restrictions and Limitations** and **Directions For Use** on all products involved in tank mixing. Refer to specific labels for the spectrum of susceptible weeds. The most restrictive labeling applies to tank mixes.

### Poast Plus + Marksman<sup>®</sup> herbicide

**Poast Plus** 1.5 pint per acre

**Marksman** 3.5 pints per acre

Apply at 30 or more days prior to planting corn to actively growing weeds and grasses. This tank-mix provides the combined benefits of early burndown and 1.0 pound active ingredient of atrazine preemergence. Use additives according to the **Spray Additives** section of this label.

### Poast Plus + Clarity<sup>®</sup> herbicide

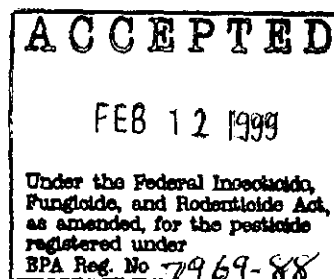
**Poast Plus** 1.5 pint per acre

**Clarity** 1.0 pint per acre

Apply at 30 or more days prior to planting corn to actively growing weeds and grasses. Use additives according to the **Spray Additives** section of this label.

### Spray Additives

Use 2.0 - 4.0 pints of UAN or 1.0 - 2.0 pounds of spray grade ammonium sulfate with crop oil concentrate or methylated seed oil at 1.0 - 2.0 pints per acre. Also refer to the respective labels for specific recommendations on additives.



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