



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Chemical Safety and Pollution Prevention
Office of Pesticide Programs
Registration Division (7504P)
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

EPA Reg. Number:

7969-355

Date of Issuance:

OCT 22 2012

Term of Issuance:

Unconditional

Name of Pesticide Product:

**EMPRESS INTRINSIC
BRAND FUNGICIDE**

NOTICE OF PESTICIDE:

Registration
 Reregistration
(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

BASF Corporation
PO Box 13528
26 Davis Dr
Research Triangle Park, NC 27709

Mailed to:

David Haughey
Product Registration Manager

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA sec 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

Signature of Approving Official:

Date:

OCT 22 2012

Tony Kish, Product Manager (22)
Fungicide Branch/Registration Division/OPP/OCSP (7504P)

2. Make the following change to the label:
 - a. Change the product registration number to "EPA Reg. No. 7969-355"
3. Submit one copy of the revised final printed label for the record before the product is released for shipment.

Your release for shipment of the product constitutes acceptance of these conditions.

A copy of the label stamped "Accepted" is enclosed for your records.

Tony Kish
Product Manager (22)
Fungicide Branch
Registration Division (7504P)

Enclosure:
Label stamped "Accepted"

Group 11 Fungicide

Empress™

Intrinsic™ brand fungicide

For use as a drench for soilborne disease control and improved plant health in production ornamentals

Active Ingredient*:

pyraclostrobin: (carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy]methyl]phenyl]methoxy-,methyl ester) 23.3%

Other Ingredients: 76.7%

Total: 100.0%

* Equivalent to 2.08 pounds of pyraclostrobin per gallon

EPA Reg. No. 7969-xxx

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN WARNING/AVISO

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

See inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents:

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

ACCEPTED
OCT 22 2012
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 7969-355

BASF
The Chemical Company

FIRST AID	
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • DO NOT induce vomiting unless told to do so by a poison control center or doctor. • DO NOT give anything to an unconscious person.
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none"> • Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes. • Call a poison control center or doctor for advice.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOTLINE NUMBER	
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. In case of medical emergency regarding this product, call: BASF at 1-800-832-HELP (4357), the National Poison Control Center at 1-800-222-1222, or dial 911.</p>	

Precautionary Statements

Hazards to Humans and Domestic Animals

WARNING. May be fatal if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.

Personal Protective Equipment (PPE)

Some materials that are chemically resistant to this product are listed below. For more options refer to **Category A** on an EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material (such as nitrile, butyl, neoprene and/or barrier laminate)
- Shoes plus socks

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

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

USER SAFETY RECOMMENDATIONS

Users should:

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

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.

Environmental Hazards

This product may contaminate water through drift of spray in wind. This product has a potential for runoff for several months or more after applications. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features, such as ponds, streams, and springs, will reduce the potential for contamination of water from rainfall runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

This pesticide is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. **DO NOT** apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

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 requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Unless otherwise directed in supplemental labeling, all applicable directions, restrictions, precautions and **Conditions of Sale and Warranty** are to be followed. This label 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 of 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 made of any waterproof material (such as nitrile, butyl, neoprene, and/or barrier laminate)
- Shoes plus socks

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

Pesticide Storage

Store in original containers only. Keep container closed when not in use. **DO NOT** store near food or feed.

Pesticide Disposal

To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (5 gallons or less) as follows:

Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (more than 5 gallons) as follows:

Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

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

Container is not safe for food, feed or drinking water.

Spills

In case of large-scale spillage regarding this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

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

- Wear personal protective equipment (see Precautionary Statements) and avoid exposure when managing a spill.
- Dike and contain spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing, and wash affected skin areas with soap and water. Wash clothing before reuse.
- Keep spill out of all sewers and open bodies of water.

Product Information

Empress™ Intrinsic™ brand fungicide is a broad-spectrum fungicide applied as a drench for the control of certain soilborne seedling and crown diseases in production ornamentals, forest and conifer nurseries, and plantations in the following use sites:

- Greenhouses
- Interiorscapes
- Lathhouses and shadehouses
- Outdoor nurseries (container or field)
- Retail nurseries

Applications of **Empress** prior to disease development (preventively) optimize disease control, resulting in improved plant health. Apply **Empress** solo or in tank mixes with other registered fungicides. **DO NOT** exceed the specified application rate or fail to comply with use restrictions listed in this label. Failure to follow directions and precautions on this label can result in injury and/or inferior disease control.

Empress is a suspension concentrate (SC) containing the active ingredient pyraclostrobin, a member of the strobilurin class of chemistry derived from a natural antifungal substance. To maximize disease control, apply **Empress** in a regularly scheduled protective spray program and use in a rotation program with other fungicides. **Empress** has good residual activity against target fungi.

Resistance Management

Mode of Action

Pyraclostrobin, the active ingredient in **Empress** belongs to the group of respiration inhibitors classified as Quinone Outside Inhibitors (QoI) or target site of action **Group 11** fungicides. **Empress** is effective against pathogens resistant to **Non-Group 11** fungicides, such as the dicarboximides, sterol inhibitors, benzimidazoles, or phenylamides. Repeated use of **Group 11** fungicides, including pyraclostrobin, azoxystrobin, fluoxastrobin and trifloxystrobin, can lead to fungal populations that are resistant to these fungicides. **Empress** will be less effective in controlling diseases where resistant fungi are present.

Resistance Management Advisory

The following instructions can delay the development of fungicide resistance:

1. **Limited sequential applications** - To maintain performance in ornamental plants, **DO NOT** make more than 2 sequential applications of **Empress**. Alternate with a fungicide(s) of a different mode of action, such as **Orvego™ fungicide, Stature® SC fungicide, Segway™ fungicide** or **Subdue® Maxx® fungicide** before reapplying **Empress**. **DO NOT** alternate **Empress** with other **Group 11** fungicides.
2. **Tank mixtures** - Tank mixing with fungicides from different target site of action groups that are registered/permited for the same use and that are effective against the pathogens of concern can delay resistance development. Use at least the minimum labeled rates of each fungicide in the tank mix.
3. **Integrated Pest Management (IPM)** - Integrate **Empress** into an overall disease and pest management program. Follow cultural practices known to reduce disease development. **Empress** can be used in advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.
4. **Monitoring** - Monitor the success of each fungicide in controlling the targeted pathogen and record other factors that can influence fungicide performance and/or disease development. If a **Group 11** target site fungicide, such as **Empress**, appears to be less effective against a pathogen than in previous applications, contact a BASF representative or local expert for further investigation.

Plant Tolerance

Empress has been applied to a wide variety of common ornamental plants without observed plant injury. Not all cultivars, varieties or species have been tested for tolerance to **Empress**. Refer to **Table 4** for the list of plants shown to be tolerant to **Empress**.

- Many cultivars within a plant species vary in tolerance to growing conditions and chemical applications. The grower must recognize these differences and test the product accordingly.
- **DO NOT** tank mix combinations with other pesticides or additives that have not been tested for tolerance under local conditions. If tank mixed with another product, always test a small group of representative plants for tolerance prior to large-scale use.
- **DO NOT** tank mix **Empress** with an organophosphate insecticide or a plant growth regulator.
- Local conditions can also influence plant tolerance and may not match those under which BASF has conducted testing. Always test a small group of representative plants for tolerance to **Empress** under local growing conditions prior to large-scale use.
- The use of an adjuvant or surfactant is not necessary when making a drench application.

- **DO NOT** expose plants listed in **Table 5** to spray or drift containing **Empress™ Intrinsic™ brand fungicide** as injury can result.

Restrictions and Limitations

- **For outdoor uses, DO NOT** apply more than 1.5 gals of **Empress** product/acre/year, or 4.4 fl ozs per 1,000 sq ft/year. See **Table 2** as a guide for maximum number of applications based on rate and spray volumes.
- **For greenhouse uses, DO NOT** make more than 8 applications of **Empress** per crop per year.
- **DO NOT** apply to plants exhibiting injury (leaf phytotoxicity or plant stunting) produced by prior pesticide applications.
- **DO NOT** tank mix **Empress** with an organophosphate insecticide or a plant growth regulator when making an application.
- **DO NOT** use on crops intended for food or feed use grown in or for agricultural production.
- **DO NOT** use on crops grown in greenhouses for agricultural production or transplants grown in greenhouses for agricultural fields.
- **DO NOT** apply to ornamentals planted in landscape areas, including residential areas, parks, golf courses, cemeteries, roadside plantings or other similar areas.
- **DO NOT** apply by overhead irrigation to fruit and nut trees, blackberries, cranberries, or grapes (see **Table 3**).
- **Resistance Management** - To limit the potential for development of resistance in ornamental plants, **DO NOT** apply more than 2 sequential applications of **Empress**. Rotate to a different mode of action before reapplying **Empress**.
- **DO NOT** expose plants listed in **Table 5** to spray or drift containing **Empress** as injury can result.
- **DO NOT** apply by aircraft.

Mixing Instructions

Empress is mixed with water and applied as a soil drench treatment using ground-type application equipment, overhead irrigation equipment, backpack or hand-held equipment.

- Clean spray equipment thoroughly before and after applying this product, particularly if a product with the potential to injure ornamentals was used prior to **Empress**.
- Calibrate spray equipment prior to use.
- Prepare only the amount of spray mix needed for immediate use.
- Maintain maximum constant agitation during application.

Tank Mix Partners/Components

Empress is compatible with most fungicide, insecticide and fertilizer products. To improve control of certain

diseases, **Empress** can be tank mixed with other effective (nonstrobilurin) fungicides such as **Orvego™ fungicide**, **Stature® SC fungicide**, **Segway™ fungicide** or **Subdue® Maxx® fungicide**. If tank mixtures are used, follow rate restrictions, label recommendations and precautions on all labels. Always follow the most restrictive label.

Physical incompatibility, reduced disease control, or plant injury can result from mixing **Empress** with fungicides, herbicides, insecticides, additives, or fertilizers. Always conduct a jar test and test the tank mixes on a small group of representative plants prior to large-scale use.

DO NOT tank mix **Empress** with an organophosphate insecticide or a plant growth regulator.

Additives

The use of additives or spray adjuvants when making a drench application is not necessary with Empress.

If additives or spray adjuvants are included, use only surfactants approved for ornamental plants in combination with **Empress**. **DO NOT** use organosilicone-based adjuvants with **Empress** because injury can result on certain ornamental species. Always test the additives and tank mixes on a small group of representative plants prior to large-scale use.

Compatibility Test (Jar Test)

Before mixing a new combination of products or additives in the spray tank, perform a compatibility test. Begin with a quart-sized jar. Add products in the same order as the **Mixing Order** section. Start with 3.5 cups of water from the intended source at the source temperature. For each dry product, add 2 tsp per pound of product per acre. For each liquid product, add 1 tsp per pint of product per acre.

- Cap the jar and invert 10 cycles between component additions.
- When the components have all been added to the jar, let the solution stand for 15 minutes.
- Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, fine particles that precipitate to the bottom or thick (clabbered) texture. **DO NOT** use any spray solution that could clog spray nozzles.

Mixing Order

1. **Water** - Fill tank 1/2 to 3/4 full with clean water and start agitation.
2. **Agitation** - Maintain agitation throughout mixing.
3. **Products in PVA bags** - Place any product contained in water-soluble PVA bags into the mixing tank. Wait until bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
4. **Water-soluble additives** - Including dry and liquid fertilizer, such as ammonium sulfate or urea ammonium.
5. **Water dispersible products** - Including dry flowables, dry wettable granules, suspension concentrates, or suspo-emulsions. **For containers 5 gallons or less, shake well prior to use. For containers greater than**

5 gallons, recirculate prior to use. Consult BASF Representatives for additional information regarding agitation and recirculation.

- 6. **Water soluble products**
- 7. **Emulsifiable concentrates** – Including oil concentrates or methylated seed oil.
- 8. **Remaining quantity of water**

If mixture stands for more than 2 hours, thoroughly agitate prior to application.

Application Directions and Diseases Controlled

Apply **Empress™ Intrinsic™ brand fungicide** as a preventive drench application for control of specific soilborne pathogens causing root rot, stem rot, and crown rot in ornamental plants. Follow directions for use found in **Tables 1, 2 and 3.**

For containers 5 gallons or less, shake well prior to use. For containers greater than 5 gallons, recirculate prior to use. Consult BASF Representatives for additional information regarding agitation and recirculation.

Drench Application Instructions

- Drench the soil with a solution of **Empress** using **Tables 1, 2 and 3.** Thorough saturation and wetting of root zone, crown and base of the plant, and surrounding growth media is necessary for optimum control.
- **Drench - DO NOT** apply to dry soil media. Applications are best made when soil media has good moisture but not saturated. Use enough solution to wet the root zone of the plant. Avoid watering plants for several hours after application to facilitate product uptake and maximize fungicide contact.
- **For Seedling Ornamentals - DO NOT** apply **Empress** until after the first true leaf emergence.
- **DO NOT** use **Empress** after symptoms of soilborne disease have become evident. Control may not be satisfactory.
- Repeat applications as needed 7 to 28 days after the initial application.
- **Resistance Management** - To limit the potential for development of resistance in ornamental plants, **DO NOT** apply more than 2 sequential applications of **Empress**. Rotate to a different mode of action before reapplying **Empress**.
- **Empress** can be applied by ground-type application equipment, overhead irrigation (see **Table 3**), backpack or hand-held equipment.
- For applications to containers smaller than 6 inches, **DO NOT** exceed 400 gals drench solution per acre.
- See **Table 2** for instructions on total number of applications per rate and spray volume for outdoor use.

Table 1. Empress Mixing Rate and Diseases Controlled

Crown, Root and Soilborne Pathogens	Product Use Rate per 100 Gal (fl ozs)	Pot Size and Plant Material Size
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	1.0 to 3.0	Unrooted cuttings Seedlings Plugs
	1.0 to 6.0	Herbaceous plants in 2 to 6 inch containers
	1.0 to 6.0	Herbaceous or Woody ornamentals in 4 inch to 1 gallon containers
	3.0 to 12.0	Herbaceous or Woody ornamentals in 1 gallon containers or larger

Table 2. Empress Maximum Seasonal Applications by Rate and Volume

Plant Type or Container Size	Maximum Gal/A	Maximum Rate per 100 Gal/ Application* (fl ozs)	Maximum Rate per Application (fl ozs/A)
Cuttings – propagation	400	3	12
Seedling trays Plug trays	400	3	12
Containers 2 to 6 inches	600	4	24
Containers greater than 6 inches	1,000	6	60
	800	8	64
	600	10	60
	400	12	48

* **DO NOT** apply more than 1.5 gals of **Empress** product/acre/year, or 4.4 fl ozs per 1,000 sq ft/year. **DO NOT** exceed the spray volume maximum per acre and the maximum rate mixed per 100 gal when making applications.

Resistance management dictates a maximum of two sequential applications then rotate to a **non-group 11** fungicide with a different MOA.

Table 3. Drench Applications To Fruit and Nut Trees, Blackberries, Cranberries, or Grapes

DO NOT use on crops intended for food or feed use grown in or for agricultural production.

DO NOT apply using overhead irrigation or other equipment that delivers application to foliage. **Target drench application to container surface or soil only.**

Common Name	Scientific Name
Almond	<i>Prunus dulcis</i>
Apple	<i>Malus</i> spp.
Apricot	<i>Prunus armeniaca</i>
Blackberry	<i>Vaccinium myrtillus</i>
Cherry	<i>Prunus avium</i> , <i>P. cerasus</i>
Chestnut, American	<i>Castanea pumila</i>
Citrus	<i>Citrus</i> spp.
Cranberry, American	<i>Vaccinium macrocarpon</i>
Grape, European*	<i>Vitis vinifera</i>
Nectarine	<i>Prunus persica</i>
Peach	<i>Prunus persica</i>
Pear	<i>Pyrus</i> spp.
Pistachio	<i>Pistacia vera</i>
Plum	<i>Prunus domestica</i>
Walnut, black	<i>Juglans nigra</i>
Walnut, common	<i>Juglans regia</i>

* **DO NOT** expose these Grape species or varieties to **Empress™ Intrinsic™ brand fungicide**: Concord, Fredonia, Niagara, Noiret, (NY73.0136.17), Rougeon, Steuben and Worden.

Overhead Irrigation Systems

DO NOT apply when wind speed favors drift beyond the area intended for treatment.

Applications made by through irrigation systems must deliver rates of **Empress** consistent with the rates specified in **Tables 1 and 2** of this label.

DO NOT apply **Empress** through any type of drip irrigation system.

DO NOT apply by overhead irrigation to fruit and nut trees, blackberries, cranberries, or grapes (see **Table 3**).

Apply this product through sprinkler irrigation systems, including center pivot, lateral move, end tow, side [wheel] roll, traveler, big gun, solid set, or hand move irrigation systems.

Plant injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform treated water. Thorough **soil drench** is required for good control. Maintain good agitation during the entire application period. If you have questions about calibration, contact a state extension service specialist, equipment manufacturers or other experts.

- The system must contain a functional check valve, vacuum-relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow.

- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

DO NOT connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

Specific Instructions for Public Water Systems

- Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional reduced-pressure zone back-flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, discharge the water from the public water system into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump

when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

- Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.

Table 4. Empress™ Intrinsic™ brand fungicide Tolerant Plant Species

Plants in this table have been found to be tolerant to **Empress** when applied according to the use instructions stated in this label.

Common Name	Scientific Name
African violet	<i>Saintpaulia ionantha</i>
Ajuga	<i>Ajuga reptans</i>
Almond, nonbearing	<i>Prunus dulcis</i>
Aloe vera	<i>Aloe vera</i>
Apple, nonbearing	<i>Malus</i> spp.
Apricot, nonbearing	<i>Prunus armeniaca</i>
Arborvitae	<i>Thuja</i> spp.
Ardisia	<i>Ardisia</i> spp.
Arrowwood	<i>Viburnum dentatum</i>
Ash, red	<i>Fraxinus pennsylvanica</i>
Asian trache	<i>Losperrum</i> spp.
Asparagus fern	<i>Asparagus densiflorus</i>
Astilbe	<i>Astilbe</i> spp.
Aucuba	<i>Aucuba japonica</i>
Avens	<i>Geum chiloense</i>
Azalea	<i>Rhododendron</i> spp.
Baby's breath	<i>Gypsophila repens</i>
Bachelor button	<i>Centaurea montana</i>
Balloon flower	<i>Platycodon grandiflorus</i>
Barbados lily	<i>Hippeastrum vittatum</i>
Barberry, Japanese	<i>Berberis thunbergii</i>
Basket-of-gold	<i>Aurinia saxatilis</i>
Bayberry, wax myrtle	<i>Myrica cerifera</i>
Bee balm	<i>Monarda didyma</i>
Begonia*	<i>Begonia</i> spp.
Bellflower	<i>Campanula glomerata</i>
Blackberry	<i>Vaccinium myrtillus</i>
Black-eyed Susan	<i>Rudbeckia</i> spp.
Blanket flower	<i>Gaillardia grandiflora</i>
Blue lily turf	<i>Liriope</i> spp.
Boxwood, Japanese, common	<i>Buxus - B. japonica, B. sempervirens</i>
Brachycome, blue	<i>Brachycome</i> spp.
Bridal wreath	<i>Spiraea vanhouttei</i>
Butterfly bush	<i>Buddleia</i> spp.
Caladium	<i>Caladium</i> spp.
Camellia, Japanese	<i>Camellia japonica</i>

Table 4. Empress™ Intrinsic™ brand fungicide Tolerant Plant Species (continued)

Common Name	Scientific Name
Canna	<i>Canna x generalis</i>
Carnation	<i>Dianthus caryophyllus</i>
Cedar, Japanese	<i>Cryptomeria japonica</i>
Chamaecyparis	<i>Chamaecyparis pisifera</i>
Cherry, nonbearing	<i>Prunus avium, P. cerasus</i>
Cherry, flowering, Kwanzan	<i>Prunus serrulata</i> 'Kwanzan'
Cherry, flowering, Mt. Fuji (Shirotae)	<i>Prunus serrulata</i> 'Mt. Fuji' (Shirotae)
Chestnut, American	<i>Castanea dentata</i>
China, rose	<i>Hibiscus</i> spp.
Chinquapin	<i>Castanea pumila</i>
Chrysanthemum	<i>Chrysanthemum</i> spp.
Citrus, nonbearing	<i>Citrus</i> spp.
Columbine	<i>Aquilegia</i> spp.
Cone flower	<i>Rudbeckia hirta</i>
Coral bells	<i>Heuchera</i> spp.
Cortaderia	<i>Cortaderia</i> spp.
Cotoneaster, cranberry	<i>Cotoneaster apiculatus</i>
Crabapple	<i>Malus</i> spp.
Cranberry, American	<i>Vaccinium macrocarpon</i>
Crape myrtle	<i>Lagerstroemia indica</i>
Cryptomeria	<i>Cryptomeria</i> spp.
Cupid's dart	<i>Catananche cerulea</i>
Cyclamen	<i>Cyclamen</i> spp.
Daffodil	<i>Narcissus pseudonarcissus</i>
Dahlia	<i>Dahlia</i> spp.
Daylily	<i>Hemerocallis</i> spp.
Deutzia	<i>Deutzia</i> spp.
Dietes	<i>Dietes vegeta</i>
Dogwood	<i>Cornus</i> spp.
Douglas fir	<i>Pseudotsuga</i> spp.
Dusty Miller	<i>Centaurea cineraria</i>
Enkianthus, redvein	<i>Enkianthus campanulatus</i>
Echinacea	<i>Echinacea purpurea</i>
Elaeagnus, Russian olive	<i>Elaeagnus angustifolia</i>
Elder, water	<i>Sambucus</i> spp.
Euonymus	<i>Euonymus alata</i>
Fern, Kimberly Queen	<i>Nephrolepis oblitterata</i>
Fern, wood	<i>Dryopteris</i> spp.
Forsythia	<i>Forsythia</i> spp.
Fountain grass	<i>Pennisetum alopecuroides</i>
Foxglove	<i>Digitalis</i> spp.
Gardenia	<i>Gardenia jasminoides</i>
Gayfeather	<i>Liatris</i> spp.
Gazania	<i>Gazania</i> spp.
Geranium	<i>Pelargonium</i> spp.

Gerbera *Gerbera* spp.

Table 4. Empress™ Intrinsic™ brand fungicide Tolerant Plant Species (continued)

Common Name	Scientific Name
Germander, Wall	<i>Teucrium chamaedrys</i>
Gladiolus	<i>Gladiolus</i> spp.
Globe thistle	<i>Echinops ritro</i>
Goldbell tree, Chinese	<i>Forsythia viridissima</i>
Grape, European, nonbearing	<i>Vitis vinifera</i>
Hawthorn, Indian	<i>Rhaphiolepis</i> spp.
Hazel	<i>Corylopsis</i> spp.
Heavenly bamboo	<i>Nandina domestica</i>
Hemlock, Canada	<i>Tsuga Canadensis</i>
Holly, Chinese, Japanese, Yaupon	<i>Ilex - I. cornuta, I. crenata, I. vomitoria</i>
Hosta	<i>Hosta</i> spp.
Hydrangea	<i>Hydrangea</i> spp.
Impatiens*, New Guinea, balsam	<i>Impatiens</i> spp.
Iris	<i>Iris</i> spp.
Ivy, common, California, English	<i>Hedera</i> spp.
Jasmine, star	<i>Trachelospermum jasminoides</i>
Jessamine	<i>Gelsemium sempervirens</i>
Juniper, creeping, Chinese	<i>Juniperus - J. horizontalis, J. chinensis</i>
Lamb's ear	<i>Stachys byzantina</i>
Lantana	<i>Lantana montevidensis</i>
Larkspur	<i>Delphinium elatum</i>
Leopard's bane	<i>Doronicum cordatum</i>
Leucophyllum	<i>Leucophyllum</i> spp.
Lilac, common	<i>Syringa</i> spp.
Lily	<i>Lilium</i> spp.
Liriope, variegated	<i>Liriope muscari variegata</i>
Lisianthus	<i>Eustoma grandiflora</i>
Lobelia	<i>Lobelia</i> spp.
Loropetalum	<i>Loropetalum chinense</i>
Lupine	<i>Lupinus</i> spp.
Magnolia, star, saucer	<i>Magnolia - M. stellata, M. soulangiana</i>
Maidenhair tree	<i>Gingko biloba</i>
Mandevilla	<i>Mandevilla</i> spp.
Maple, amur, Japanese, Norway, sugar, soft, negundo	<i>Acer</i> spp. - <i>A. ginnala, A. palmatum, A. platanoides, A. saccharum, A. saccharinum, A. negundo</i>
Marigold	<i>Tagetes</i> spp.

Table 4. Empress™ Intrinsic™ brand fungicide Tolerant Plant Species (continued)

Common Name	Scientific Name
Maudlin, blue	<i>Ageratum houstonianum</i>
Meadow sage	<i>Salvia x superba</i>
Monkey grass	<i>Ophiopogon japonicus</i>
Morningglory	<i>Ipomoea</i> spp.
Moss, rose	<i>Portulaca grandiflora</i>
Mountain laurel	<i>Kalmia latifolia</i>
Myrica cerifera	<i>Myrica cerifera</i>
Myrtle	<i>Myrtus</i> spp.
Narcissus	<i>Narcissus pseudonarcissus</i>
Nectarine, nonbearing	<i>Prunus persica</i>
Oak, bur, red	<i>Quercus</i> spp. - <i>Q. macrocarpa, Q. rubra</i>
Oleander	<i>Nerium oleander</i>
Olive, fragrant tea	<i>Osmanthus fragrans</i>
Pampas grass	<i>Cortaderia</i> spp.
Pansy	<i>Viola</i> spp.
Peach, nonbearing	<i>Prunus persica</i>
Pear, nonbearing	<i>Pyrus</i> spp.
Pecan, nonbearing	<i>Carya illinoensis</i>
Periwinkle, Madagascar	<i>Catharanthus roseus</i>
Periwinkle, perennial	<i>Vinca major, V. minor</i>
Petunia*	<i>Petunia</i> spp.
Phlox	<i>Phlox</i> spp.
Pine, black, white, blue, mugo	<i>Pinus</i> spp. - <i>P. thunbergiana, P. strobus, P. pinea, P. mugo</i>
Pine, European	<i>Abies alba</i>
Pistachio, nonbearing	<i>Pistacia vera</i>
Pittosporum, Japanese	<i>Pittosporum tobira</i>
Plum, nonbearing	<i>Prunus domestica</i>
Plum, purple leaf	<i>Prunus cerasifera</i>
Poinsettia	<i>Euphorbia pulcherrima</i>
Poplar	<i>Populus</i> spp. - <i>P. trichocarpa, P. deltoides</i>
Primrose	<i>Oenothera speciosa</i>
Privet	<i>Ligustrum</i> spp.
Purslane	<i>Portulaca</i> spp.
Quince	<i>Chaenomeles</i> spp.
Ranunculus	<i>Ranunculus</i> spp.
Rhaphiolepis	<i>Rhaphiolepis</i> spp.
Redbud	<i>Cercis</i> spp.
Redtip photinia	<i>Photinia fraseri</i>
Rhododendron	<i>Rhododendron</i> spp.
Rock cress	<i>Arabis caucasica</i>
Rose	<i>Rosa</i> spp.

Table 4. Empress™ Intrinsic™ brand fungicide Tolerant Plant Species (continued)

Common Name	Scientific Name
Rose mallow	<i>Hibiscus moscheutos</i>
Ruellia	<i>Ruellia</i> spp.
Russian arborvitae	<i>Microbiota decussata</i>
Sage, silverado	<i>Leucophyllum</i> spp.
Sago	<i>Cycas revoluta</i>
Salvia	<i>Salvia coccinea</i>
Scabious, sweet	<i>Scabiosa atropurpurea</i>
Sedum	<i>Sedum</i> spp.
Snapdragon	<i>Antirrhinum</i> spp.
Speedwell	<i>Veronica spicata</i>
Spindle tree, burning bush	<i>Euonymus</i> spp.
Spiraea	<i>Spiraea</i> spp.
Spruce	<i>Picea</i> spp.
Spurge, Japanese	<i>Pachysandra terminalis</i>
St. John's wort	<i>Hypericum calycinum</i>
Stonecrop	<i>Sedum</i> spp.
Sweetspire	<i>Itea</i> spp.
Sweet William	<i>Dianthus barbatus</i>
Thrift	<i>Armeria maritima</i>
Tick seed	<i>Coreopsis</i> spp.
Tulip	<i>Tulipa</i> spp.
Verbena	<i>Verbena</i> spp.
Viburnum, water elder	<i>Viburnum</i> spp.
Vinca, annual	<i>Catharanthus roseus</i>
Viola	<i>Viola</i> spp.
Walnut tree, black, common	<i>Juglans</i> spp. - <i>J. nigra</i> , <i>J. regia</i>
Wormwood	<i>Artemisia</i> spp.
Yarrow	<i>Achillea</i> spp.
Zinnia	<i>Zinnia</i> spp.

* **Begonia**, **impatiens** and **petunia** occasionally have shown discoloration on the flowers following **Empress** applications made directly onto the flowers. Be cautious with **Empress** applications when these species are flowering. Not all cultivars and flower colors have been evaluated. Before making **Empress** applications on the entire area, treat a small area first to ensure that a phytotoxic response will not occur.

Table 5. Plant Species NOT Tolerant to Empress

DO NOT expose these species or varieties to Empress.

Common Name	Scientific Name
Grape Concord, Fredonia, Niagara, Noiret (NY73.0136.17), Rougeon, Steuben and Worden	<i>Vitis</i> sp.
Nine bark	<i>Physocarpus opulifolius</i>
Wintercreeper	<i>Euonymus vegetus</i>

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