Loveland PRODUCTS

Radiate®

Plant Growth Regulator

ACTIVE INGREDIENTS:	BY WT
3-Indolebutyric acid (IBA)	0.85%
Cytokinin, as Kinetin	0.15%
OTHER INGREDIENTS:	99.00%
TOTAL	100.00%

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID	
If in eyes:	• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. **FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL 1-866-944-8565.**	

EPA REG. NO. 34704-909

EPA EST. NO. 90866-CA-001

NET CONTENTS 1.0 US GAL (3.785 L)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Caution. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

Applicators and other handlers must wear:

- Long sleeved shirt and long pants,
- Chemical resistant gloves in Category A, such as butyl rubber > 14 mils, or natural rubber > 14 mils, or neoprene rubber > 14 mils or nitrile rubber > 14 mils, and
- Shoes plus socks.

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

USER SAFETY RECOMMENDATIONS

Users should:

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

ENVIRONMENTAL HAZARDS

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

PHYSICAL OR CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame.

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 applications. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses 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 4 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 in Category A, such as butyl rubber > 14 mils, or natural rubber >14 mils, or neoprene rubber > 14 mils or nitrile rubber > 14 mils, and
- Shoes plus socks.

PRODUCT INFORMATION

Radiate® contains two active ingredients classified as plant growth regulators (PGRs): 3-Indolebutyric acid (IBA) and Cytokinin, as Kinetin. Benefits derived from the use of this product include: stimulation of early and improved root and shoot development, increased vegetative growth, promotes growth development of flowers and fruit, stimulates root growth on plant cuttings and reduces transplant shock. Read the use instructions for specific details by crop.

A surfactant can be included in the tank mixture if desired based on field experience or further instructions from your local extension service, crop consultant or field representative or if indicated by a tank mix partner.

USE DIRECTIONS FOR CHEMIGATION

Apply Radiate through fixed or standing irrigation systems or through foliar applications. Foliar applications are preferred.

Apply this product only through the following types of irrigation systems:

1. Sprinkler including big gun, solid set or hand move irrigation systems.
2. Calibrated overhead watering booms.
3. Drip (or micro sprinkler) irrigation systems.

Before applying this product through any type of irrigation system, perform a small-scale trial to determine if product performance and phytotoxicity results are acceptable.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have any questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

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.

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.

CHEMIGATION SYSTEMS CONNECTED TO 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, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow 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.

Agitate the pesticide supply tank throughout the application of Radiate. Except for turfgrass, apply Radiate at the rate of 20.0 fluid ounces

per acre at the end of the irrigation period in a sufficient amount of water to allow proper coverage of plant or crop. Fill the supply tank one-half full with water, add the appropriate amount of Radiate to the tank and finish filling the tank with water.

DRIP/TRICKLE OR SPRINKLER CHEMIGATION

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.

Do not apply when wind speed favors drift beyond the area intended for treatment. (This statement only applies to sprinkler chemigation.)

Agitate the pesticide supply tank throughout the application of Radiate. Except for turfgrass, apply Radiate at the rate of 16.0 to 32.0 fluid ounces per acre at the end of the irrigation period in a sufficient amount of water to allow proper coverage of plant or crop.

Fill the supply tank one-half full with water, add the appropriate amount of Radiate to the tank and finish filling the tank with water.

Minimum Spray Volume (Gal)/A

CROP	GROUND		AIR
	Concentrate	Dilute	
Field Crops, Miscellaneous	15.0	15.0	5.0
Berry and Small Fruits, Vegetables, Vines	25.0	100.0	15.0
Pome Fruits, Stone Fruits, Tree Crops and Tree Nuts	50.0	200.0	20.0
Citrus	100.0	300.0	—

Special considerations: Radiate compatibility with other agricultural products has not been fully investigated. Compatibility of Radiate with other products requires testing for crop safety and performance prior to large-scale use. Products mixed with Radiate must be acidic (pH less than 7). Do not mix Radiate with any product(s) having a pH greater than 7. Repeated application may be necessary if it rains within 2 hours after application.

Depending upon the equipment used, and specific crop, spray volume applied per acre will differ.
Apply sufficient water volume to ensure thorough coverage.

APPLICATION INSTRUCTIONS

Crop	Amount of Radiate	Application Directions and Timing
Asparagus	2.0 fl oz/A or 13.0 fl oz/100 gallons water	Apply after harvest when asparagus is in fern stage. Repeated applications can be made every 10 to 14 days.
Berry and Small Fruit including Blackberry, Blueberry, Caneberry, Kiwi and Raspberry (except Grape and Strawberry)	2.0* fl oz/A or 13.0 fl oz/100 gallons water	1st: At 2 to 4 true leaf stage. 2nd: 10 to 14 days later before bloom. 3rd: 1 to 2 weeks after harvest. 4th: 10 to 14 days later.
Brassica Vegetables including Broccoli, Cabbage, Cauliflower and Mustard greens	2.0* fl oz/A	Foliar application: Apply to achieve full coverage 1st: At 2 to 4 true leaf stage. 2nd: 10 to 14 days after first application. Use a non-ionic surfactant for hard to wet crops such as Cabbage.
Bulb Vegetables including Garlic, Leek, Onion	2.0* fl oz/A	1st: At 2 to 4 leaf stage. Repeated applications can be made every 10 to 14 days up until 10 days prior to harvest. Thorough coverage and leaf wetting is required.
Cereal Grains including Barley, Corn[(1)(2)] (field, pop, sweet), Millet, Oats, Rice, Sorghum and Wheat	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. 2nd: 10 to 14 days after first application.
Citrus Fruit including Grapefruit, Lemon, Lime, Sweet Orange and Tangerine	2.0* fl oz/A or 13.0 fl oz/100 gallons water	Apply when fruit are 5 mm in size. Make additional applications if needed. Thoroughly apply spray.
Cotton[(1)(2)]	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. Repeated applications can be made every 10 to 14 days.
Cucurbit Vegetables including Cantaloupe, Cucumber, Honeydew, Muskmelon, Squash (summer and winter) and Watermelon	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. Repeated applications can be made every 10 to 14 days up until 10 days prior to harvest.
Forage, Fodder and Straw of Cereal Grains	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. 2nd: 10 to 14 days after first application. Additional applications between cuttings will improve root structure and increase stand vigor.
Fruiting Vegetables including Eggplant, Pepper and Tomato	2.0* fl oz/A or 13.0 fl oz/100 gallons water	1st: At 2 to 4 true leaf stage. Repeat applications every 10 to 14 days up until 10 days prior to harvest.
Grass Forage, Fodder and Hay	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. 2nd: 10 to 14 days after first application. Additional applications between cuttings will improve root structure and increase stand vigor.

APPLICATION INSTRUCTIONS		
Crop	**Amount of Radiate**	**Application Directions and Timing**
Grass Grown for Seed including Perennial Ryegrass, Tall Fescue or Bentgrass	2.0* fl oz/A	Apply when growth resumes in the spring. Repeated applications can be made every 10 to 14 days up until 30 days prior to harvest.
Grape	4.0 to 6.0 fl oz/100 gallons water	1st: Apply when grapes are 2 to 3 mm in size. 2nd: 10 to 14 days after first application. 3rd: 45 days prior to harvest. 4th: 30 days prior to harvest.
Herbs and Spices including Basil, Dill, Mustard and Sage	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. Repeated applications can be made every 10 to 14 days up until 10 days prior to harvest.
Leafy Vegetables including Celery, Head and Leaf Lettuce, Kale and Spinach	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. Repeated applications can be made every 10 to 14 days up until 10 days prior to harvest.
Legume Vegetables (Succulent or Dried) including Bean (all types), Peas and Soybeans[(1)(2)]	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. Repeated applications can be made every 10 to 14 days.
Nongrass Animal Feeds including Alfalfa, Clover, Hay and Vetch	2.0* fl oz/A	Seedling alfalfa, clover, hay and vetch: Apply at 2 to 4 trifoliate stage. For established crop, apply at green-up and 5 to10 days after each cutting.
Oil Seed Crops including Canola[(1)(2)], Flax and Sunflower	2.0* fl oz/A	1st: At 2 to 4 leaf stage. Repeated application can be made every 10 to14 days until flower.
Peanut	2.0* fl oz/A	1st: At 2-4 true leaf stage. Repeated applications can be made every 10 to 14 days. Beginning bloom to beginning seed fill is a critical period.
Pome Fruits including Apple	2.0* fl oz/A	1st: At 2 to 4 leaf stage. 2nd: 10 to 14 days after first application.
Root and Tuber Vegetables including Carrot, Ginseng, Horseradish, Parsley (turnip-rooted), Potato, Radish, Sugar Beet, Sweet Potato, Turnip	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. Repeated applications can be made every 10 to 14 days up until 10 days prior to harvest. Foliar application: thorough spray coverage is necessary.
Stone Fruits including Apricot, Cherry, Peach and Plumcot	2.0* fl oz/A	1st: At 2 to 4 leaf stage. 2nd: 10 to 14 days after first application.
Strawberry	13.0 fl oz/100 gallons water	1st: Spray immediately after transplant. 2nd: 10 to 14 days after first application. Repeated applications can be made every 10 to 14 days.
Sugarcane	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. Repeated applications can be made every 10 to 14 days.
Tobacco	2.0* fl oz/A	1st: At 2 to 4 true leaf stage. Repeated applications can be made every 10 to 14 days.
Tree Nuts including Almonds, Cashews and Pecans	13.0 fl oz/100 gallons water	One application 2 to 4 weeks after flowering.

*If application spray volume is greater than 15.0 gallons per acre, use the dilution rate of 13.0 fluid ounces per 100 gallons water.
(1) This product can be tank mixed with glyphosate products registered for use on Roundup Ready® crops.
(2) This product can be tank mixed with products registered for use on LibertyLink® crops.

Soil Application

Crop	Amount of Radiate	Application Directions and Timing
Asparagus	2.0 to 4.0 fl oz/A	Apply in furrow, through drip systems, other irrigation systems or as a soil drench using correct dilution ratios. Repeated applications can be made every 10 to 14 days.

In-Furrow Application

Crop	Amount of Radiate	Application Directions and Timing
Barley, Corn(1)(2) (field, pop, sweet), Grain sorghum, Oats, Peanuts, Potato, Rye, Soybean, Sugar beets, Sugarcane and Wheat	2.0 to 4.0 fl oz/A	Apply at planting in the seed furrow or 2 inches beside and 2 inches below seed or with a strip till machine 3 inches below the seed. Can be applied with or without starter fertilizer.
Cotton(1)(2)	2.0 to 4.0 fl oz/A	Can be applied in furrow or in the starter band.
Legume vegetables (Succulent or Dried) including Bean (all types), Peas and Soybeans(1)(2)	2.0 to 4.0 fl oz/A	Apply in-furrow or band as a stand-alone or in conjunction with a starter fertilizer.
Oil Seed Crops including Canola(1)(2) and Sunflower	4.0 fl oz/A	Apply at planting in the seed furrow or 2 inches beside and 2 inches below seed or with a strip till machine 3 inches below the seed. Can be applied with or without starter fertilizer.
Root and Tuber Vegetables including Carrot, Ginseng, Horseradish, Parsley (turnip-rooted), Potato, Radish, Sugar Beet, Sweet Potato, Turnip	4.0 fl oz/A	Apply in-furrow or band as a stand-alone or in conjunction with a starter fertilizer.

(1) This product can be tank mixed with glyphosate products registered for use on Roundup Ready® crops.
(2) This product can be tank mixed with products registered for use on LibertyLink® crops.

For Dip or Drench Transplant Water

Crop	Amount of Radiate	Application Directions and Timing
Berry and Small Fruit, Brassica Vegetables, Bulb Vegetables, Cucurbit Vegetables, Fruiting Vegetables and Leafy Vegetables	13.0 fl oz/100 gallons water	Drench can be delivered at 5.0 to 500 gallons/A. At time of transplant. Drench applications can be delivered as injected transplant solution or dribbled into the seeding trench. If mixed with nutrients check compatibility and be certain of nutrient safety facts.
Tobacco	13.0 fl oz/100 gallons water	At time of transplant. Drench applications can be delivered as injected transplant solution or dribbled into the seeding trench. If mixed with nutrients check compatibility and be certain of nutrient safety facts.

For Drench Applications for Field Grown Perennial Crops

Crop	Amount of Radiate	Application Directions and Timing
Berry and Small Fruit, Citrus, Ornamental Trees, Pome fruits, Stone fruits and Tree Nuts	13.0 fl oz/100 gallons water	Deliver 8.0 to 16.0 ounces of total mix per inch diameter of trunk. Apply monthly anytime the plant is actively growing. Apply with nutrients or other mixes suitable for application 3 to 4 times the trunk diameter up the stem.

For Injection into Drip/Trickle Irrigation

Crop	Amount of Radiate	Application Directions and Timing
Berry and Small Fruit, Citrus, Brassica Vegetables, Bulb Vegetables, Cucurbit Vegetables, Fruiting Vegetables, Grape, Leafy Vegetables, Legume Vegetables, Pome fruits, Root and Tuber Vegetables, Strawberry, Stone fruits and Tree Nuts	16.0 to 32.0 fl oz/A of water zone	1st application at transplanting Run the system until root zone of the treated crop is at 90% field capacity. Inject Radiate into the system a sufficient concentration to deliver 16.0 to 32.0 oz/A of water zone in the last 15 minutes of watering. Established crops: can be treated monthly year round or from the beginning of annual production until fruit set. Construction of a uniform delivery system is necessary. Use only tested injection and distribution systems. Crops with larger root volume require higher net dose/A to achieve effective root zone concentration.
Container Grown Ornamentals	13.0 fl oz/100 gallons water	Deliver at 1.0 oz of solution per one inch of container diameter. Apply monthly anytime the plant is actively growing up until 10 days before sale. Construction of a uniform delivery system is necessary. Use only tested injection and distribution systems.

TURFGRASS

For Sod Grass: Apply Radiate by ground using 20.0 to 40.0 gallons of water per acre. Use 2.5 fluid ounces to 6.5 fluid ounces product in 20.0 gallons to 40.0 gallons of water, respectively, at a 1:1000 dilution rate.

For Turfgrass: Apply Radiate by ground according to the table below using 1.0 to 10.0 gallons of water per 1000 square feet. Use Radiate for turf growth suppression at the dilution rate of 1:300 (4.2 fluid ounces product per 10.0 gallons water).

Turf	Amount (Radiate/Gal Water/1000 Sq Ft*)	Application Directions and Timing
Warm climate grasses including Bermuda, Bermuda hybrids, Centipede, St. Augustine & similar warm season grasses	0.13 to 0.65 fl oz/1.0 to 5.0 gal of water/1000 sq ft	Make applications at 2-week intervals during the growing season.
Dichondra	0.65 to 1.3 fl oz/5.0 to 10.0 gal of water/1000 sq ft	Make applications at 2-week intervals during the growing season.
Cool Climate grasses including Bluegrass, Fescue, Rye, and similar cool season grasses	0.13 to 0.65 fl oz/1.0 to 5.0 gal of water/1000 sq ft	Make applications at 2-week intervals during the growing season.

*Apply 0.13 fluid ounce per gallon.

GREENHOUSE AND NURSERY

Differences in responsiveness may vary from one cultivar to another or from one set of growing conditions to another. Unless previous experience dictates otherwise, prior to widespread use, test a small number of plants from each cultivar to verify desired efficacy.

Foliar Plants

Aglaonema	Aphelandra	Dieffenbachia	Fittonia	Maranta	Philodendron	Schefflera	Syngonium
Ajuga	Caladium	Dracaena	Gynura	Palms	Pilea	Schlumbergera	Tradescantia
Anthurium	Cissus	Ficus	Hoya	Peperomia	Pothos	Spathiphyllum	Similar foliage plants

Application Rates and Timing: Dilute 0.85 fluid ounce of Radiate in 10.0 gallons of water (1:1500 dilution rate) for plants less than 2 years old. Dilute 1.3 fluid ounces Radiate in 10.0 gallons of water (1:1000 dilution rate) for mature plants. Repeat applications at 10 to 14 day intervals when required. Apply the last spray 1 to 2 weeks prior to sale. Uniform and thorough spray coverage is necessary for best results.

Bedding and Flowering Plants

Abutilon	Carnation	Coral Bells	Foxglove	Gladiolus	Lily	Osmachus	Salvia	Vinca
Aglais	Champaca	Cyclamen	Fuchsia	Gloxinia	Lupine	Petunia	Scabiosa	Zinnia
Alyssum	Chrysanthemum	Dahlia	Gardenia	Impatiens	Marigold	Poinsettia	Sedum	Similar plants
Calceolaria	Cineraria	Delphinium	Gazania	Iris	Michelia	Portulaca	Sempervivum	
Canna	Columbine	Dianthus	Geranium	Jasminum	Monarda	Roses	Tulips	

Application Rates and Timing: Dilute 0.85 fluid ounce of Radiate in 10.0 gallons of water (1:1500 dilution rate) for plants less than 2 years old. Dilute 1.3 fluid ounces Radiate in 10.0 gallons of water (1:1000 dilution rate) for mature plants. Repeat applications at 10 to 14 day intervals when required. Apply the last spray 1 to 2 weeks prior to sale. Uniform and thorough spray coverage is necessary for best results.

Woody Ornamentals

Arborvitae	Azalea	Carissa	English ivy	Juniper	Pine	Rhododendron	Similar plants
Aucuba	Boxwood	Chinese magnolia	Holly	Maple	Podocarpus	Viburnum	

Application Rates and Timing: Dilute 0.85 fluid ounce of Radiate in 10.0 gallons of water (1:1500 dilution rate) for plants less than 2 years old. Dilute 1.3 fluid ounces Radiate in 10.0 gallons of water (1:1000 dilution rate) for mature plants. Repeat applications at 10 to 14 day intervals when required. Apply the last spray 1 to 2 weeks prior to sale. Uniform and thorough spray coverage is necessary for best results.

Garden Grown Tree Fruits

Apple	Cherry	Grape	Lemon	Mango	Persimmon	Starfruit
Asian pear	Fig	Jujubee	Litchi	Orange	Plum	Similar plants
Apricot	Guava	Kumquat	Longara	Peach	Prunes	

Application Rates and Timing: Dilute 0.85 fluid ounce of Radiate in 10.0 gallons of water (1:1500 dilution rate) for plants less than 2 years old. Dilute 1.3 fluid ounces Radiate in 10.0 gallons of water (1:1000 dilution rate) for mature plants. Repeat applications at 10 to 14 day intervals when required. Apply the last spray 1 to 2 weeks prior to sale. Uniform and thorough spray coverage is necessary for best results.

PLANT CUTTINGS

- To propagate new plants from cuttings.
- Treated cuttings can be expected to produce uniform roots resulting in beautiful, symmetrical plants.
- For use on most home, tropical, greenhouse and nursery plants.

Type of Cutting	Dilution rate
Soft wood	1:20 dilution rate (0.5 fluid ounce product in 10.0 fluid ounces of water)
Medium wood	1:10 dilution rate (1.0 fluid ounce product in 10.0 fluid ounces of water)
Hard wood	1:5 dilution rate (2.0 fluid ounces product in 10.0 fluid ounces water)

For Rooting House Foliage, Tropical and Hardy Ornamentals, Leaf, Greenwood and Softwood Cuttings, Woody ornamentals, Deciduous hardwoods, Evergreens, Ground Covers, and Perennials including:

Acanthropanax	Catalpa	Dogwood	Heath	Manzanita	Rhododendron
African violet	Chamaecyparis (False Cypress)	Douglas Fir	Heather	Maple	Rose
Apple (ornamental)	Chaste tree	Escallonia	Hemlock	Matrimony vine	Russian Olive
Arborvitae, American	Chestnut	Euonymus	Hibiscus	Minor	Snowball
Arbutus	Chokeberry	Flowering Crab apple	Holly	Myrtle	Sourwood
Azalea (evergreen & semi-evergreen)	Cotoneaster	Flowering Quince	Honeysuckle	Oak	Spirea
Aster	Crape-myrtle	Forsythia	Ivy	Olive (ornamental)	Tulip Tree
Barberry	Clematis	Fuchsia	Japanese quince	Orange,sour (ornamental)	Umbrella Pine
Begonia	Cryptomeria	Gardenia	Jasmine	Pachysandra	Viburnum
Birch	Chrysanthemum	Geranium	Juniper	Pecan (ornamental)	Vinca
Bittersweet	Cypress	Germander	Lilac	Photinia	Yew
Boxwood	Dahlia	Grape (ornamental)	Locust	Pivet	Wriggle
Camellia	Delphinium	Hawthorne	Magnolia	Pyracantha (Firethorn)	Many others

USE INSTRUCTIONS: Obtain cuttings from vigorous, healthy plants. Keep cuttings moist and cool such as in an ice chest. With a sharp knife, trim the cutting (2 to 8 inches long) with a diagonal cut just below a node or leaf. Dip the basal end of cutting, individually or in bunches, into the Radiate solution for 3 to 5 seconds.

Note: Following dipping, place cuttings into planting medium. Depending on the species, rooting will take place in several weeks or months under a moist greenhouse environment. Transplant once the cuttings have rooted.

Shrubs, Flowers, Groundcovers and Houseplants including, Rose, Arborvitae, Gardenias, Flowering Trees and other ornamentals
USE INSTRUCTIONS: In bare root transplant or from containers: Use 2.0 tablespoons of Radiate per 10.0 gallons of water. Apply solution to root area in transplanting hole and then cover roots with soil. After planting, repeat applications biweekly as a drench to thoroughly wet the root area using a solution consisting of 1.0 tablespoon of Radiate per 10.0 gallons of water.

Annual and Perennial Flowers (bedding plants)
USE INSTRUCTIONS: Use 1.0 tablespoon of Radiate per 10.0 gallons of water and apply to thoroughly saturate roots at time of planting. Repeat at weekly intervals until plants are well established.

Groundcovers including, Ivy, Iceplant, Geranium, Cotoneaster, Barberry, and Ajuga
USE INSTRUCTIONS: Use 1.0 tablespoon of Radiate per 10.0 gallons of water and apply thoroughly to saturate the root area at time of planting. Repeat at weekly intervals until plants are well established.

Houseplants (repotting and planting)
USE INSTRUCTIONS: Use 1.0 tablespoon of Radiate per 10.0 gallons of water and water thoroughly at weekly intervals to saturate the root zone until plants are well established.

Established Plants
USE INSTRUCTIONS: To continue new root growth, use 1.0 tablespoon of Radiate per 10.0 gallons of water and water plants with solution once a month.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store product in the original container. Store product in a cool, dry locked place out of the reach of children and out of direct sunlight.

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

CONTAINER HANDLING: Nonrefillable container. Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at www.acrecycle.org. If not recycled, then 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. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

For packages up to 5 gallons: Triple rinse 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. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a 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.

For chemical spill, leak, fire or exposure, call CHEMTREC at 1-800-424-9300.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

BEFORE BUYING OR USING THIS PRODUCT, read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary in any way.

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