

2016-4325
2016-09-07

DOUBLE NICKEL LC

Aqueous Suspension Biofungicide/Bactericide

| | | |
|-------|----|---------------------------|
| GROUP | 44 | FUNGICIDE/ BACTERICIDE |
|-------|----|---------------------------|

For the suppression of certain fungal and bacterial diseases on labelled crops

Live Organism

COMMERCIAL

GUARANTEE

Bacillus amyloliquefaciens strain D747..... 1×10^{10} spores/mL (minimum)

REGISTRATION NO 31887 PEST CONTROL PRODUCTS ACT

READ THE LABEL BEFORE USING

POTENTIAL SENSITIZER

KEEP OUT OF REACH OF CHILDREN

Manufactured by: Certis USA, L.L.C.
9145 Guilford Rd., Suite. 175
Columbia, MD 21046
1-800-847-5620

NET CONTENTS: 9.46 L

Lot No.:

Date of manufacture

GENERAL INFORMATION

DOUBLE NICKEL LC is a broad-spectrum preventative biopesticide for suppression of fungal and bacterial diseases. The active ingredient is a beneficial bacterium, *Bacillus amyloliquifaciens* strain D747, which colonizes the plant surfaces preventing establishment of disease-causing fungi and bacteria.

DOUBLE NICKEL LC can be applied alone or in rotation with chemical fungicides as a tool for integrated disease management in agricultural crops. DOUBLE NICKEL LC offers a valuable tool for management of resistance to chemical fungicides through its multiple and unique modes of action.

DOUBLE NICKEL LC can be applied up to and including the day of harvest.

DIRECTIONS FOR USE

GENERAL: As this product is not registered for the control of pests in aquatic systems, **DO NOT** use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

DO NOT allow effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters.

DO NOT apply by air.

MIXING AND HANDLING INSTRUCTIONS

Mix the required amount of DOUBLE NICKEL LC in water with sufficient agitation to maintain a uniform suspension in the spray or mixing tank. Tank should be cleaned prior to use. Do not use highly alkaline or highly acidic water to mix sprays. Use a buffering agent if necessary to maintain neutrality (pH 6 to 8) of water in the tank. Maintain agitation during application. Apply immediately after mixing; do not allow spray mix to stand overnight.

APPLICATION METHODS

Ground: DOUBLE NICKEL LC™ can be applied in most commonly-used ground application equipment, such as (but not limited to): tractor-mounted boom, airblast, high clearance, hose-end, backpack, and other pressurized sprayers; hose-end or hand-held sprayers; water wheel and other drench applicators.

Chemigation: DOUBLE NICKEL LC™ can be applied through drip (trickle) and sprinkler type irrigation equipment. **DO NOT** apply this product through any other type of irrigation system. Refer to the section entitled “Chemigation Instructions” for detailed instructions.

For agricultural crops grown outdoors or in greenhouses, shadehouses, or other covered structures.

| CROPS | DISEASES/PATHOGENS | APPLICATION RATE | ADDITIONAL INFORMATION |
|--|---|---|---|
| <p>Cucurbits cucumbers, squash (all types), cantaloupes, muskmelons, watermelons, and other melons (including cucurbits grown for seed production).</p> | <p>Powdery mildew <i>Sphaerotheca fuliginea</i> (= <i>Podosphaera xanthii</i>) <i>Erysiphe cichoracearum</i> (= <i>Golovinomyces cichoracearum</i>)</p> | <p>Foliar application: 5L/ha – 12.5 L/ha* Low disease pressure: 2.5 L/ha-5L/ha**</p> | <p>Growth stage: Fruit formation to end of maturity of cucurbits Repeat application every 3 to 10 days for as long as conditions favor disease development. *Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (5L/ha – 12.5 L/ha), apply more frequently (every 3 to 7 days), or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance. **Lower rates (2.5 L/ha-5L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p> |
| | <p>Partial suppression of soil level Phytophthora blight infection (<i>Phytophthora capsici</i>)</p> | <p>Soil application: 1L/ha -2.5 L/ha</p> | <p>Growth stage: From planting/transplanting until maturity <i>For transplanted crops:</i> Make preventative applications to transplants in the greenhouse or nursery before transplanting. See “Soil application” instructions below. <i>For crops grown from seed:</i> Apply at planting, following the instructions below for “Banded/in furrow application.” See “Soil application” instructions below. Follow up applications can be made at 2-4 week intervals after planting or transplanting.</p> |
| <p>Fruiting vegetables tomatoes, peppers, eggplant, tomatillo, and okra (including those grown for seed production).</p> | <p>Gray mold (<i>Botrytis cinerea</i>)</p> | <p>Foliar application: 6.25 L/ha-18L/ha* Low disease pressure: 4.5 L/ha-5L/ha**</p> | <p>Growth stage: From flowering to fruit maturity. Repeat application every 3 to 10 days for as long as conditions favor disease development. *Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (6.25 L/ha-18L/ha), apply more</p> |

| CROPS | DISEASES/PATHOGENS | APPLICATION RATE | ADDITIONAL INFORMATION |
|----------------------|--|--|--|
| | | | <p>frequently (every 3 to 7 days) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.</p> <p>**Lower rates (4.5 L/ha-5L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p> |
| | <p>Early blight (<i>Alternaria solani</i>)</p> | <p>Foliar application: 2.5 L/ha – 10 L/ha*</p> | <p>Growth stage: From flowering to fruiting Repeat application every 3 to 10 days for as long as conditions favor disease development.</p> <p>*Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (2.5 L/ha – 10 L/ha), apply more frequently (every 3 to 7 days) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.</p> <p>Lower rates (2.5 L/ha-5L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p> |
| | <p>Partial suppression of soil level Phytophthora blight infection (<i>Phytophthora capsici</i>)</p> | <p>Soil application: 0.5 – 2.5 L/ha</p> | <p>Growth stage: From planting/transplanting until maturity <i>For transplanted crops:</i> Make preventative applications to transplants in the greenhouse or nursery before transplanting. See “Soil application” instructions below.</p> <p><i>For crops grown from seed:</i> Apply at planting, following the instructions below for “Banded/in furrow application.” See “Soil application” instructions below.</p> <p>Follow up applications can be made at 2-4 week intervals after planting or transplanting.</p> |
| <p>Grapes</p> | <p>Powdery mildew (<i>Erysiphe necator</i>, formerly <i>Uncinula necator</i>)</p> | <p>Foliar application: 5L/ha-10L/ha*</p> <p>Low disease pressure: 2.5 L/ha-5 L/ha **</p> | <p>See “Foliar application” instructions below.</p> <p>Start applications when new shoots are 1-3 cm long.</p> <p>Repeat at 6-10 cm, 18-20 cm, and then at 7-10 day intervals as long as disease conditions persist.</p> |

| CROPS | DISEASES/PATHOGENS | APPLICATION RATE | ADDITIONAL INFORMATION |
|--|---|--|--|
| | | | <p>*Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (5L/ha-10L/ha), apply more frequently (every 3 to 7 days) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.</p> <p>**Lower rates (2.5 L/ha-5 L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p> |
| | <p>Gray mold (<i>Botrytis cinerea</i>)</p> | <p>Foliar application: 6.25-25 L/ha*</p> <p>Low disease pressure: 3 L/ha-6.25 L/ha**</p> | <p>See “Foliar application” instructions below.</p> <p>Apply at bloom, before bunch closure, at veraison, and before harvest.</p> <p>Repeat application every 3 to 10 days for as long as conditions favor disease development.</p> <p>*Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (6.25-25 L/ha), apply more frequently (every 3 to 7 days,) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.</p> <p>**Lower rates (3 L/ha-6.25 L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p> |
| <p>Lettuce (Head and leaf varieties, including those grown for seed production)</p> | <p>Downy mildew (<i>Bremia lactucae</i>)</p> | <p>Foliar application: 5-12.5 L/ha</p> | <p>Growth stage: Begin applications preventatively when conditions are favorable for onset of disease Repeat application every 7 to 10 days for as long as conditions favor disease development.</p> |
| | <p>Lettuce drop (<i>Sclerotinia minor</i> and <i>S. sclerotiorum</i>)</p> | <p>Foliar application: 5-12.5 L/ha*</p> <p>Low disease pressure:</p> | <p>Growth stage: From planting to formation of the head of lettuce.</p> <p>Repeat application every 3 to 10 days</p> |

| CROPS | DISEASES/PATHOGENS | APPLICATION RATE | ADDITIONAL INFORMATION |
|--|---|---|---|
| | | <p>1 – 5 L/ha**</p> <p>Soil application: 1-2.5 L/ha</p> | <p>for as long as conditions favor disease development.</p> <p>*Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (5-12.5 L/ha), apply more frequently (every 3 to 7 days), or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.</p> <p>**Lower rates (1 – 5 L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p> <p>See “Soil application” instructions below.</p> <p>Apply at or after planting (but before plant emergence) as a banded seed line treatment (see “Banded/in furrow application” instructions below). Alternatively, apply to seed bed via overhead sprinkler chemigation with germination water (see “Chemigation Instructions” for further information).</p> <p>Make second application at thinning or cultivation in sufficient water and multiple nozzles to ensure thorough coverage of lower leaves and surrounding soil surface.</p> <p>Incorporation with light irrigation after application may improve disease control.</p> <p>Repeat at 10-14 day intervals if conditions promoting disease persist.</p> |
| <p>Pome fruits apple, pear, crabapple, quince</p> | <p>Fire blight (<i>Erwinia amylovora</i>)</p> | <p>Foliar application: 5-7.5 L/ha</p> | <p>Growth stage: From blossom to end of flowering</p> <p>Begin applications at 1-5% open blossoms and repeat every 3-7 days as necessary until petal fall, when intervals can be increased to 7 days.</p> <p>Double Nickel LC™ can also be used in summer “cover spray” applications to manage the shoot blight phase of fire blight.</p> <p>Can be mixed with copper fungicides to improve control.</p> |

| CROPS | DISEASES/PATHOGENS | APPLICATION RATE | ADDITIONAL INFORMATION |
|----------------|---|--|---|
| Potato | White mold (<i>Sclerotinia sclerotiorum</i>) | Foliar application: 5-12.5 L/ha* Low disease pressure: 1 – 5 L/ha** | Growth stage: Begin applications preventatively when conditions are favorable for onset of disease. Repeat application every 3 to 10 days for as long as conditions favor disease development. *Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (5-12.5 L per hectare), apply more frequently (every 3 to 7 days) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance. **Lower rates (1-5 L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants. |
| | Early blight (<i>Alternaria solani</i>) | Foliar application: 2.5 - 10 L/ha* | Growth stage: onset of crop cover to formation of tuber Repeat application every 3 to 10 days for as long as conditions favor disease development. *Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (2.5 - 10 L/ha), apply more frequently (every 3 to 7 days) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance. Lower rates (2.5 -5 L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants. |
| | Black scurf (<i>Rhizoctonia solani</i>) | Soil application: 1 - 5 L/ha | Apply at planting, following the instructions for “Banded/in furrow” application below. |
| Soybean | White mold (<i>Sclerotinia sclerotiorum</i>) | Foliar application: 2.5 - 10 L/ha* | Growth stage: From early flowering to pod set Repeat application every 3 to 10 days for as long as conditions favor disease development. *Under moderate to high disease |

| CROPS | DISEASES/PATHOGENS | APPLICATION RATE | ADDITIONAL INFORMATION |
|-------------------|---|---|--|
| | | | <p>pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (2.5 - 10 L/ha), apply more frequently (every 3 to 7 days) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.</p> <p>Lower rates (2.5 -5 L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p> |
| Strawberry | Powdery mildew (<i>Sphaerotheca macularis</i> ,) | <p>Foliar application: 5 - 12.5 L/ha*</p> <p>Low disease pressure: 2.5 – 5 L/ha**</p> | <p>Growth stage: At or just before flowering until fruit maturity</p> <p>Repeat application every 3 to 10 days for as long as conditions favor disease development.</p> <p>*Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (5 - 12.5 L/ha), apply more frequently (every 3 to 7 days) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.</p> <p>**Lower rates (2.5 – 5 L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p> |
| | Gray mold (<i>Botrytis cinerea</i>) | <p>Foliar application: 5 - 12.5 L/ha*</p> <p>Low disease pressure: 3 – 5 L/ha**</p> | <p>Growth stage: At or just before flowering until fruit maturity</p> <p>Repeat application every 3 to 10 days for as long as conditions favor disease development.</p> <p>*Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (5 - 12.5 L/ha), apply more frequently (every 3 to 7 days) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.</p> |

| CROPS | DISEASES/PATHOGENS | APPLICATION RATE | ADDITIONAL INFORMATION |
|-------|--------------------|------------------|--|
| | | | **Lower rates (3 to 5 L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants. |

Foliar Application: *For suppression of diseases on foliage, flowers, fruit, or other above-ground plant parts:*

Mix in water and apply as a spray at the specified rate of **DOUBLE NICKEL LC™ per hectare** (refer to the crop specific application rate in the table above) in sufficient volume to achieve thorough coverage of the crop canopy with minimal runoff. Begin applications at crop emergence, transplanting, or when conditions are conducive to development of disease. Repeat application every 3 to 10 days for as long as conditions favor disease development. Lower rates (refer to the crop specific application rate above) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants. Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (refer to the crop specific application rate in the table above), apply more frequently (every 3-7 days) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.

Soil Application: *For prevention or suppression of soilborne diseases:*

Apply DOUBLE NICKEL LC™ as a preventative treatment by one or more of the following methods:

- Soil drench applied to transplants in greenhouse or nursery prior to transplanting: Mix **0.25 to 1.0 liter of DOUBLE NICKEL LC™ per 100 liters** of water and apply as a drench or coarse spray to growing media in flats, trays, or other containers.
- Soil drench in the field at planting or transplanting: Mix **0.25 to 1.0 liter of DOUBLE NICKEL LC™ per 100 liters** of water and apply using a “water wheel” injector, spray nozzles/hoses, or other method to drench each root ball and/or planting hole.
- Soil or seedline drench, or banded/in-furrow spray at planting: See the section on “Banded/in-furrow application” below for additional instructions.
- Drip (trickle) or any type of sprinkler irrigation: Immediately before or after planting or transplanting, apply DOUBLE NICKEL LC™ to planting beds at specified rate (refer to the crop specific application rate in the table above). See Chemigation Instructions for additional information.

Follow-up (post-planting) applications can be made every 2-4 weeks if needed at the specified rate of **DOUBLE NICKEL LC™** (refer to the crop specific application rate in the table above) by one or more of the following methods:

- Drip (trickle) or any type of sprinkler irrigation, any time after planting or transplanting. See Chemigation Instructions for additional information.

- Spray directly onto the soil surface and/or lower plant parts. If targeting root disease, follow immediately with sufficient overhead sprinkler irrigation to move the product to the root zone.

Lower rates (refer to the crop specific application rate in the table above) may be applied under low disease pressure or to smaller plants. Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (refer to the crop specific application rate in the table above), apply more frequently (every 2 weeks) or rotate DOUBLE NICKEL LC™ with other fungicides for improved performance.

Banded/in-furrow application: Use the table below to determine the correct application rate milliliters per 100 meters of row based on row spacing and desired rate per hectare. Mix the required amount of DOUBLE NICKEL LC™ in water and apply as banded spray (10-15 cm wide) or seedline drench centered over the planting furrow. Apply directly over seeds in the furrow just before they are covered with soil. The total volume of water required will depend on the application equipment used. Consult your local cooperative extension service if you need assistance calibrating band spraying equipment.

| Rates for banded/in furrow application: Find the desired rate (L/ha) of DOUBLE NICKEL LC™ in the left column. Read across that line to the correct row spacing indicated at the top to find the volume (ml) of DOUBLE NICKEL LC™ per 100 meters of row that will provide the desired application rate per hectare. | | | | | | | | | | | | | | | |
|---|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Rate (L/Ha) | Spacing between rows (centimeters) | | | | | | | | | | | | | | |
| | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| 0.5 | 15 | 18 | 20 | 23 | 25 | 28 | 30 | 33 | 35 | 38 | 40 | 43 | 45 | 48 | 50 |
| 1.0 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| 1.5 | 45 | 53 | 60 | 68 | 75 | 83 | 90 | 98 | 105 | 113 | 120 | 128 | 135 | 143 | 150 |
| 2.0 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
| 2.5 | 75 | 88 | 100 | 113 | 125 | 138 | 150 | 163 | 175 | 188 | 200 | 213 | 225 | 238 | 250 |
| 3.0 | 90 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | 255 | 270 | 285 | 300 |
| 3.5 | 105 | 123 | 140 | 158 | 175 | 193 | 210 | 228 | 245 | 263 | 280 | 298 | 315 | 333 | 350 |
| 4.0 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 | 340 | 360 | 380 | 400 |
| 4.5 | 135 | 158 | 180 | 203 | 225 | 248 | 270 | 293 | 315 | 338 | 360 | 383 | 405 | 428 | 450 |
| 5.0 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 |

CHEMIGATION INSTRUCTIONS

General information:

Apply this product only through drip (trickle) irrigation (including micro-irrigation through spaghetti tubes or individual tubes) or sprinkler irrigation (including impact or microsprinklers, microjet, overhead boom, water gun, solid set, lateral move, end tow, side-roll, center pivot, or hand move, including mist-type systems); or with hand-held calibrated irrigation equipment (such as a hand-held wand with injector). DO NOT apply this product through any other type of irrigation system.

Crop injury or lack of effectiveness can result from non-uniform distribution of applied product.

If you have questions about calibration, contact Provincial 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.

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 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.

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.

Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and injector system and flush with clean water before use. Failure to provide a clean tank, free of scale or residues may reduce effectiveness of this product.

Drip (trickle) and micro-irrigation chemigation

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

5. 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.
6. Systems must use a metering pump such as a positive displacement injection pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer, or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply to moderately moist soils. Use volumes that thoroughly wet the soil but that do not cause significant runoff or excessive drip from pots. Application should be continuous in sufficient water to apply the specified rate evenly to the entire treated area.

Sprinkler chemigation:

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. Systems must use a metering pump, such as a positive displacement injection pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply to moderately moist soils. Use volumes that thoroughly wet the soil but that do not cause significant runoff or excessive drip from pots. Application should be continuous in sufficient water to apply the specified rate evenly to the entire treated area.
8. DO NOT apply when wind speed causes non-uniform distribution and/or favours drift beyond the area intended for treatment
9. DO NOT apply by chemigation if the area to be treated is within 100 metres of a residential area or park.

PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN. May cause sensitization. Avoid breathing spray mist. Avoid contact with skin, eyes and clothing.

Wear a long-sleeved shirt, long pants, shoes plus socks, waterproof gloves, as well as a NIOSH approved mist filtering mask or respirator with any N-95, P-95, or R-95 filter when mixing/loading, and application and during all clean-up and repair activities. Wash thoroughly with soap and water after handling the product. Remove contaminated clothing and follow manufacturer's directions for cleaning\maintaining personal protective equipment (PPE) before reuse. If no such instructions are available, use clothing detergent and hot water for cleaning all washable PPE. Keep and wash PPE separately from other laundry.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

Keep unprotected persons out of treated areas until sprays have dried.

FIRST AID:

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: call a poison control centre or doctor immediately for treatment. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

IF IN EYES: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

IF INHALED: 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.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

Hot Line No.:1-800-255-3924 for additional information

TOXICOLOGICAL INFORMATION: Treat symptomatically.

ENVIRONMENTAL HAZARDS:

To reduce runoff from treated areas into aquatic habitats, avoid application when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated are and the edge of the water body. For guidance contact the Provincial Regulatory Agency.

RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, DOUBLE NICKEL LC contains a Group 44 fungicide/bactericide. Any fungal/bacterial population may contain individuals naturally resistant to DOUBLE NICKEL LC and other Group 44 fungicides/bactericides. A gradual or total loss of pest control may occur over time if these fungicides/bactericides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay fungicide/bactericide resistance:

- Where possible, rotate the use of DOUBLE NICKEL LC or other Group 44 fungicides/bactericides with different groups that control the same pathogens.
- Use tank mixtures with fungicide/bactericides from a different group that is effective on the target pathogen when such use is permitted.
- Fungicide/bactericide use should be based on an integrated disease management program that includes scouting, historical information related to pesticide use and crop rotation and considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical control practices.
- Where possible, make use of predictive disease models to effectively time fungicide/bactericide applications.
- Monitor treated fungal/bacterial populations for resistance development. Notify Certis USA L.L.C. if reduced sensitivity of the pathogen to DOUBLE NICKEL LC is suspected. If disease continues to progress after treatment with this product, do not increase the use rate. Discontinue use of this product, and switch to another fungicide/bactericide with a different site of action, if available.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.
- For further information and to report suspected resistance, contact Certis USA L.L.C. at 1-800-847-5620.

STORAGE:

Store unused product in original container, away from children and direct sunlight, at 4–25oC for up to two years. DO NOT contaminate food/feed when storing this product.

DISPOSAL:

DO NOT reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site.

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the

- tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

NOTICE TO USER:

This pest control product is to be used only in accordance with the directions on the label. It is an offense under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

WARRANTY

Certis USA, L.L.C. warrants that the material contained herein conforms to the description on the label and is reasonably fit for the purpose referred to in the directions for use. Timing and method of application, weather, watering practices, nature of soil, the disease problem, condition of the crop, incompatibility with other influencing factors in the use of this product are beyond the control of the seller. To the extent consistent with applicable law, buyer assumes all risks of use, storage, or handling of this material not in strict accordance with directions given herein. NO OTHER EXPRESS OR IMPLIED WARRANTY OF THE FITNESS OR MERCHANTABILITY IS MADE.