

PMRA Approved Label  
2020-1078  
2021-01-04

# DOUBLE NICKEL® 55

Water Dispersible Granular Biofungicide/Bactericide

GROUP	BM 02	FUNGICIDE/ BACTERICIDE
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For the suppression of certain fungal and bacterial diseases on labelled crops

**COMMERCIAL**

**Live organism**

**ACTIVE INGREDIENT:**

*Bacillus amyloliquefaciens* strain D747 .....5x10<sup>10</sup> spores/g (minimum)

REGISTRATION NO 31888 PEST CONTROL PRODUCTS ACT

**READ THE LABEL AND ATTACHED LEAFLET BEFORE USING**

CAUTION- EYE IRRITANT  
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: \_\_\_\_\_ Kg

Lot No.:

Date of manufacture

## **GENERAL INFORMATION**

DOUBLE NICKEL® 55 is a broad-spectrum preventative biopesticide for suppression or partial suppression of fungal and bacterial diseases. The active ingredient is a beneficial bacterium, *Bacillus amyloliquefaciens* strain D747, which colonizes the plant surfaces preventing establishment of disease-causing fungi and bacteria.

DOUBLE NICKEL® 55 can be applied alone or in rotation with chemical fungicides as a tool for integrated disease management in agricultural crops. DOUBLE NICKEL® 55 offers a valuable tool for management of resistance to chemical fungicides through its multiple and unique modes of action.

DOUBLE NICKEL® 55 can be applied up to and including the day of harvest.

DOUBLE NICKEL® 55 is most beneficial when applied in alternation with other fungicides that are registered for the specific use/pathogen or in a tank mix program with labeled fungicides as part of a disease management program. Mix only with fungicides having label instructions that do not prohibit such mixtures. The use of DOUBLE NICKEL® 55 in combination with other fungicides will help delay resistance to these fungicides.

## **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® 55 in cool 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® 55 can be applied in most commonly-used ground application equipment, such as 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® 55 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/indoors, shadehouses, or other covered structures as indicated in the Use Directions table, below.**

Crops	Diseases/Pathogens Suppressed	Application Rate	Additional Information
<b>Blueberry</b>	Mummy berry ( <i>Monilinia vaccinii-corymbosi</i> )	Foliar application: 0.5 - 1 kg/ha	Begin applications at bud break and repeat at 7- to 10-day intervals or as needed.  Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use the high rate (1 kg/ha), apply more frequently (every 3 to 7 days).
	Botrytis blight and fruit rot ( <i>Botrytis cinerea</i> )	Foliar application: 0.5 - 1 kg/ha	Begin preventative applications before disease appears, and repeat on 3- to 10-day intervals or as needed.  Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use the high rate (1 kg/ha), apply more frequently (every 3 to 7 days).
<b>Canola</b>	Sclerotinia Stem Rot/ White Mold ( <i>Sclerotinia sclerotiorum</i> )	Foliar application: 1 - 2 kg/ha	Begin application at 20% - 30% bloom. A second application may be made 7-10 days later, at approximately 50% bloom and prior to significant petal fall, if conditions for disease development remain favorable.  *Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (2 kg/ha), apply more frequently (every 3 to 7 days).

Crops	Diseases/Pathogens Suppressed	Application Rate	Additional Information
<p><b>Hemp and Cannabis</b> (<i>Cannabis sativa</i>) grown in the field or commercially indoors or in greenhouses</p>	<p>Partial suppression of white mold (<i>Sclerotinia sclerotiorum</i>)</p> <p>Suppression of grey mold (<i>Botrytis cinerea</i>)</p> <p>Partial suppression of powdery mildew (<i>Golovinomyces cichoracearum</i> sensu lato, <i>Podosphaera macularis</i>)</p>	<p>Foliar application: 0.5 – 1 kg/ha</p>	<p>Growth stage: From planting/transplanting until maturity and harvest.</p> <p>Begin applications preventatively when conditions are favorable for onset of disease.</p> <p>Ensure full spray coverage.</p> <p>White mould and powdery mildew: Repeat application every 3 to 14 days for as long as conditions favor disease development.</p> <p>Grey mould: Repeat application every 3 to 11 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 (1 kg/ha), apply more frequently (every 3 to 7 days).</p> <p>Lower rates (0.5 L/ha) may be applied under low disease pressure or to smaller (e.g. newly-emerged or transplanted) plants.</p>
<p><b>Cucurbits</b> 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: 1 - 2.5 kg/ha*  Low disease pressure: 0.5 -1 kg/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.</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 (1 to 2.5 kilograms per hectare), apply more frequently (every 3 to 7 days).</p> <p>**Lower rates (0.5 to 1 kilogram per hectare) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p>

Crops	Diseases/Pathogens Suppressed	Application Rate	Additional Information
	Partial suppression of soil level Phytophthora blight infection <i>(Phytophthora capsici)</i>	Soil application: 0.2 - 0.5 kg/ha	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.
<b>Fruiting vegetables</b> tomatoes, peppers, eggplant, tomatillo, and okra (including those grown for seed production).	Gray mold <i>(Botrytis cinerea)</i>	Foliar application: 1.25 - 3.6 kg/ha*  Low disease pressure: 0.9 - 1 kg/ha**	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 (1.25 to 3.6 kilograms per hectare), apply more frequently (every 3 to 7 days).  **Lower rates (0.9 to 1.25 kilogram per hectare) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.
	Early blight <i>(Alternaria solani)</i>	Foliar application: 0.5 - 2 kg/ha*	Growth stage: From flowering to fruiting 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 (1 to 2 kilograms per hectare), apply more frequently (every 3 to 7 days).  Lower rates (0.5 to 1 kilogram per hectare) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.

Crops	Diseases/Pathogens Suppressed	Application Rate	Additional Information
	Partial suppression of soil level Phytophthora blight infection ( <i>Phytophthora capsici</i> )	Soil application: 0.1 – 0.5 kg/ha	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.
<b>Grapes</b>	Powdery mildew ( <i>Erysiphe necator</i> , formerly <i>Uncinula necator</i> )	Foliar application: 1 - 2 kg/ha*  Low disease pressure: 0.5 - 1 kg/ha**	See “Foliar application” instructions below.  Start applications when new shoots are 1-3 cm long.  Repeat at 6-10 cm, 18-20 cm, and then at 7-10 day intervals as long as disease conditions persist.  *Under moderate to high disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (1 to 2 kilograms per hectare), apply more frequently (every 3 to 7 days).  **Lower rates (0.5 to 1 kilogram per hectare) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.

Crops	Diseases/Pathogens Suppressed	Application Rate	Additional Information
	Gray mold ( <i>Botrytis cinerea</i> )	Foliar application: 1.25 - 5 kg/ha*  Low disease pressure: 0.6 - 1.25 kg/ha**	See "Foliar application" instructions below. Apply at bloom, before bunch closure, at veraison, and before harvest.  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 (1.25 to 5 kilograms per hectare), apply more frequently (every 3 to 7 days).  **Lower rates (0.6 to 1.25 kilogram per hectare) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.
<b>Lettuce</b> (Head and leaf varieties, including those grown for seed production)	Downy mildew ( <i>Bremia lactucae</i> )	Foliar application: 1 - 2.5 kg/ha	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.

Crops	Diseases/Pathogens Suppressed	Application Rate	Additional Information
	Lettuce drop ( <i>Sclerotinia minor</i> and <i>S. sclerotiorum</i> )	<p>Foliar application: 1 - 2.5 kg/ha</p> <p>Low disease pressure: 0.2 – 1 kg/ha</p> <p>Soil application: 0.2 - 0.5 kg/ha</p>	<p>Growth stage: From planting to formation of the head of lettuce.</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 (1 to 2.5 kilograms per hectare), apply more frequently (every 3 to 7 days).</p> <p>**Lower rates (0.2 to 1 kilogram per hectare) 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>



Crops	Diseases/Pathogens Suppressed	Application Rate	Additional Information
<p><b>Pome fruits</b> apple, pear, crabapple, quince</p>	<p>Fire blight (<i>Erwinia amylovora</i>)</p>	<p>Foliar application: 1 - 1.5 kg/ha</p>	<p>Growth stage: From blossom to end of flowering 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. DOUBLE NICKEL® 55 can also be used in summer “cover spray” applications to manage the shoot blight phase of fire blight. Can be mixed with copper fungicides to improve control.</p>
<p><b>Potato</b></p>	<p>White mold (<i>Sclerotinia sclerotiorum</i>)</p>	<p>Foliar application: 1 - 2.5 kg/ha  Low disease pressure: 0.2 – 1 kg/ha</p>	<p>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 (1 to 2.5 kilograms per hectare), apply more frequently (every 3 to 7 days). **Lower rates (0.2 to 1 kilogram per hectare) 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: 0.5 - 2 kg/ha*</p>	<p>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 (1 to 2 kilograms per hectare), apply more frequently (every 3 to 7 days). Lower rates (0.5 to 1 kilogram per hectare) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.</p>

Crops	Diseases/Pathogens Suppressed	Application Rate	Additional Information
	Black scurf ( <i>Rhizoctonia solani</i> )	Soil application: 0.2 - 1 kg/ha	Apply at planting, following the instructions for “Banded/in furrow” application below.
<b>Soybean</b>	White mold ( <i>Sclerotinia sclerotiorum</i> )	Foliar application: 0.5 - 2 kg/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 pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (1 to 2 kilograms per hectare), apply more frequently (every 3 to 7 days). Lower rates (0.5 to 1 kilogram per hectare) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.
<b>Strawberry</b>	Powdery mildew ( <i>Sphaerotheca macularis</i> )	Foliar application: 1 - 2.5 kg/ha*  Low disease pressure: 0.5 – 1 kg/ha**	Growth stage: At or just before flowering until fruit maturity  Repeat application every 7 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 (1 to 2.5 kilograms per hectare), apply more frequently (every 3 to 7 days). **Lower rates (0.5 to 1 kilogram per hectare) may be applied under low disease pressure or to smaller (e.g. newly-emerged) plants.

Crops	Diseases/Pathogens Suppressed	Application Rate	Additional Information
	Gray mold ( <i>Botrytis cinerea</i> )	Foliar application: 1-2.5 kg/ha*  Low disease pressure: 0.6 – 1 kg/ha**	Growth stage: At or just before flowering until 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 (1 to 2.5 kilograms per hectare), apply more frequently (every 3 to 7 days). **Lower rates (0.6 to 1 kilogram per hectare) 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® 55 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. Apply preventatively. Begin applications at crop emergence, transplanting, or when conditions are conducive to development of disease. Repeat application for as long as conditions favor disease development. Refer to the use table for crop/disease-specific re-application intervals.

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, where indicated. 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 if an application interval range is stated.

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

Apply DOUBLE NICKEL® 55 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 25 to 250 grams of DOUBLE NICKEL® 55 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 25 to 250 grams of DOUBLE NICKEL® 55 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 spray (in-furrow) 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® 55 to planting beds at the specified rate (refer to the crop-specific application rate in the Use Directions 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® 55 (refer to the crop-specific application rate in the Use Directions 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 Use Directions 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 Use Directions table above), apply more frequently (every 2 weeks).

Banded/in-furrow application: Use the table below to determine the correct application rate of DOUBLE NICKEL® 55 per 100 row meters, based on row spacing and desired rate per hectare. Mix the required amount of DOUBLE NICKEL® 55 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 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 desired application rate of DOUBLE NICKEL® 55 (kg/ha) in the left column. Read across that line to the correct row spacing indicated at the top to find the number of grams per 100 meters of row that will provide the desired application rate per hectare.

Rate (kg/ha)	Spacing between rows (centimeters)														
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
0.15	0.45	0.53	0.60	0.68	0.75	0.83	0.90	0.98	1.05	1.13	1.20	1.28	1.35	1.43	1.50
0.25	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13	2.25	2.38	2.50
0.50	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
0.75	2.25	2.63	3.00	3.38	3.75	4.13	4.50	4.88	5.25	5.63	6.00	6.38	6.75	7.13	7.50
1.00	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.00

## **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, overhead boom, 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.

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced pest efficacy or increased host crop injury. The user should contact Certis USA, LLC at 1-800-847-5620 for information before mixing any pesticide or fertilizer that is not specifically recommended on this label.

### **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.

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced pest efficacy or increased host crop injury. The user should contact Certis USA, LLC at 1-800-847-5620 for information before mixing any pesticide or fertilizer that is not specifically recommended on this label

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 m of a residential area or park.

#### **FIRST AID:**

*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 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 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.

## **PRECAUTIONS:**

KEEP OUT OF REACH OF CHILDREN. May irritate eyes. 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.

### **PRE-HARVEST INTERVAL:**

Double Nickel 55 can be applied up to the day of harvest except for foliar application on cannabis or hemp, which should be 3–4 weeks.

## **ENVIRONMENTAL PRECAUTIONS:**

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 area and the edge of the water body. For guidance contact the Provincial Regulatory Agency.

## **RESISTANCE-MANAGEMENT RECOMMENDATIONS**

For resistance management, DOUBLE NICKEL® 55 contains a Group BM 02 fungicide/bactericide. Any fungal/bacterial population may contain individuals naturally resistant to DOUBLE NICKEL® 55 and other Group BM 02 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® 55 or other Group BM 02 fungicides/bactericides with different groups that control the same pathogens.
- Use tank mixtures with fungicide/bactericides from a different group that are 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® 55 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 4–25°C 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.