

DOUBLE NICKEL⁵⁵™

BIOFUNGICIDE



DOUBLE NICKEL FUNGICIDE

Double Nickel's active ingredient is a naturally occurring soil-dwelling bacteria called *Bacillus amyloliquifaciens* (strain D747). It is a beneficial bacterium when applied as a foliar fungicide that protects flowers, foliage and fruit from damaging pathogens with multiple modes of action. Double Nickel when applied as a soil drench is also a plant growth promoting bacterium that colonizes the root zone and produces organic acids that make mineral nutrients more available.

The bacteria in Double Nickel controls plant pathogens by:

- Producing antimicrobial metabolites that destroy fungal and bacterial pathogens.
- Colonizing the surface of plant parts, creating a biofilm that functions as a physical barrier.
- Outcompeting the pathogens for limited space and nutrients on plant leaves, flowers, and roots.
- Inducing plant systemic resistance triggers the immune system to prepare for pathogen invasion.
- Increasing the availability of nutrients (phosphate solubilizer) to the plant improving overall crop health to better function and defend against disease.

Active Ingredient:

Bacillus amyloliquifaciens

Key Registered Crops:

Potatoes, grapes, strawberries, apples, blueberries, tomatoes

FRAC Group:

BM 02

Packaging Size:

2 x 9.5L, 1000L Tote

In trial data spanning nearly a decade, Double Nickel has consistently proven its efficacy. Independent researchers have put strain D747 to the test by performing 700 lab and field trials with 74 different food crops and ornamentals. Double Nickel, with multiple modes of action, is effective in managing crop diseases above and below ground including Powdery Mildew, Botrytis, Monilinia, Alternaria, Downy Mildew, Sclerotinia, Rhizoctonia, Phytophthora, and Fireblight (check label for details). In IPM crop programs, Double Nickel is compatible with fertilizers, insecticides, herbicides, and other fungicides and is a powerful tank mix or rotation partner with Cueva copper fungicide. Its convenient liquid formulation has a 4-hour REI and a 0-day PHI to reduce employee down time and efficiency.

CROP	DISEASE SUPPRESSED	RECOMMENDED RATE	ADDITIONAL INFORMATION
Grapes	Powdery Mildew	2.5 L/ha – 5 L/ha	Start applications when new shoots are 1 to 3cm long. Repeat at 6 to 10cm, 18 to 20 cm, use at 7 to 10-day intervals. Under rapid disease development use higher label rates 5L/ha - 10 L/ha, apply 3 to 7days, Use lower (2.5L/ha — 5l/ha) rates to newly emerging plants.
	Botrytis Grey Mold	2.5 L/ha – 5 L/ha	
Strawberry (field and greenhouse)	Powdery Mildew	2.5 L/ha - 5 L/ha	Begin applications when green tissue is present, prior to infection period. For suppression of shoot blight, start applications after petal fall and reapply 7-14 days during stem elongation. Do not apply during bloom period (pink stage to petal fall).
	Botrytis Grey Mold	3 L/ha - 5 L/ha	
Blueberry (high bush and low bush)	Botrytis Grey Mold	2.5 L/ha - 5 L/ha	Begin applications at bud break and repeat 7 to 10 days or as needed. Under environmental conditions to rapid disease development use the high rate 5 L/ha every 3 — 7 days.
	Mummy Berry		
	Anthraxnose fruit rot	5 L/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, apply more frequently (every 3 to 7 days). Pre-harvest applications in sufficient water to cover fruit or other harvested plant parts may improve control of postharvest infections.
Potatoes (all types)	Sclerotinia White Mold	1 L/ha - 5 L/ha	Growth Stage: Begin applications preventatively when conditions are favorable for onset 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. Apply more frequently, 3 to 7 days
	Early Blight Black	*2.5 L/ha - 10 L/ha	
	Scurf (Rhizoctonia solani)	Soil Application: 1 L/ha - 5 L/ha	
Pome Fruit (apples and pears)	Fire Blight	Foliar Application: 5 L/ha - 7.5 L/ha	Growth stage: From blossom to end of flowering begin applications at 1-5% open blossoms and repeat every 3 — 7 days. 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.
Fruiting Vegetables (tomatoes, peppers, eggplant, tomatillo, okra) (field and greenhouse)	Botrytis Grey Mold	2.5 L/ha - 5 L/ha	Apply from fruit flowering to maturity. Repeat application every 3 to 7 days when conditions favor disease development. When environmental conditions are conducive to rapid disease development use higher label rates (6.25 L/ha — 18 L/ha) apply more frequently (every 3 — 7 days). Soil application/ transplanted crops make preventative applications to transplants for greenhouse or follow up applications 2 to 4 weeks after planting/transplanting
	Early Blight	2.5 L/ha - 10 L/ha	
	Soil level (phytophthora capsica)	Soil Application: 0.5 L/ha - 2.5 L/ha	
Cucurbits (field and greenhouse)	Powdery Mildew	2.5 L/ha - 5 L/ha	Apply from fruit formation to end of maturity of cucurbits. Repeat application every 3 to 10 days for as long as conditions favor disease. Under rapid disease development use higher label rates (5L/ha) every 3 to 7 days.
	Soil level (phytophthora capsica)	1 L/ha - 2.5 L/ha	
Lettuce (field and greenhouse)	Downy Mildew	Foliar Application: 5 L/ha - 12.5 L/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.
	Lettuce Drop (Sclerotinia)	Foliar Application: 5 L/ha - 12.5 L/ha Soil Application: 1 L/ha - 2.5 L/ha	Use from planting to formation of head of lettuce. Repeat application every 3 to 7 days for as long as conditions favor disease. Under rapid disease development use higher label rates 5L/ha, apply every 3 to 7 days.
Beans	Sclerotinia White Mold	2.5 L/ha - 5 L/ha	Growth stage. From early flowering to pod set. Repeat application every 3 to 10 days for as long as conditions favor disease.
Hemp and Cannabis (field, greenhouse and enclosed s tructure)	Botrytis Grey Mold	2.5 L/ha - 5 L/ha	White mold and powdery mildew: repeat application 3 to 14 days. Grey mold: repeat application every 3 to 7 days.
	Sclerotinia White Mold		
Begin application when conditions are favorable for onset disease. *Under moderate to high disease pressure, or when environmental conditions are conducive to rapid disease development, use higher label rates.			