# DOUBLE NICKEL 55™

BIOFUNGICIDE



## DOUBLE NICKEL FUNGICIDE

Bacillus amyloliquefaciens strain D747 in Double Nickel is a biological fungicide and bactericide based on a naturally occurring beneficial bacterium that colonizes plant surfaces and roots to help prevent disease establishment. Unlike conventional chemical fungicides, strain D747 works through multiple modes of action, including competitive exclusion of pathogens, production of antimicrobial compounds, activation of plant defense responses, and suppression of fungal and bacterial growth. It is used to manage a wide range of diseases, including powdery mildew, Botrytis, Alternaria, bacterial spot, fire blight, and other foliar and soilborne pathogens across many fruit, vegetable, ornamental, and field crops.

Key features and benefits of Double Nickel include its broad-spectrum disease control, multiple modes of action, and excellent fit within integrated pest management (IPM) and organic production systems. The bacterium rapidly colonizes plant tissues, helping to form a protective barrier against disease while also promoting plant health and natural defense mechanisms. Because its activity relies on several biological mechanisms rather than a single target site, the risk of resistance development is very low, making it an effective rotational partner alongside conventional fungicides. Double Nickel is also residue-exempt in many uses, safe for beneficial insects when used as directed, and can be applied throughout the growing season to support crop quality, vigor, and yield.

### Active Ingredient:

Bacillus amyloliquifaciens

### Key Crops:

Potatoes, grapes, strawberries, apples, blueberries, tomatoes

### Key Targets:

Fire blight, early blight, powdery mildew, monilinia, botrytis, anthracnose

### FRAC Group:

Group BM 02

### Packaging Size:

2 x 9.46L, 1000L Tote

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| CROP | DISEASE | PHI | REI | RATE | ADDITIONAL INFORMATION |
|---|---|---|---|---|---|
| Grapes | Powdery mildew<br>Botrytis grey mould | 0 days | 4hr. | 2.5 - 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. |
| Strawberries | Powdery mildew<br>Botrytis grey mold | 0 days | 4hr. | 2.5 - 5 L/ha<br>3 - 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). |
| Blueberries | Botrytis grey mould<br>Mummy berry | 0 days | 4hr. | 2.5 - 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. |
| | Anthracnose 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 | Sclerotinia white mould<br>Early blight black<br>Scurf | 0 days | 4hr. | 1 - 5 L/ha<br>2.5 - 10 L/ha<br>Soil Application: 1 - 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. |
| Pome Fruit | Fire blight | 0 days | 4hr. | Foliar Application: 5 - 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 | Botrytis grey mould<br>Early blight<br>Soil level | 0 days | 4hr. | 2.5 - 5 L/ha<br>2.5 - 10 L/ha<br>Soil Application: 0.5 - 2.5 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 |
| Cucurbits | Powdery mildew<br>Soil level | 0 days | 4hr. | 2.5 - 5 L/ha<br>1 - 2.5 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. |
| Lettuce | Downy mildew | 0 days | 4hr. | Foliar Application: 5 - 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 | | | Foliar Application: 5 - 12.5 L/ha<br>Soil Application: 1 - 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 mould | 0 days | 4hr. | 2.5 - 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 | Botrytis grey mould<br>Sclerotinia white mould | 3 - 4 weeks | 4hr. | 2.5 - 5 L/ha | White mold and powdery mildew: repeat application 3 to 14 days. Grey mold: repeat application every 3 to 7 days. |

Always read and follow label directions.

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