Harvesting Nature's Science

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Efficacy of HUMA GRO® PROUD 3® to Control the Fungus, *Botrytis elliptica*

Research Report

Research by IR4

Summary:

London Lilies (Lilium, Asiatic hybrid lily, > 10 cm/ "London") were treated with various products to control Botrytis elliptica.

Description

Disease pressure in this trial was low. Initial treatment applications on the lilies started June 11 and ended September 7. Disease incidence was rated on a scale of 0 – 10, where 0 = none, 1 = 1-10%, 2 = 11-20%,… and 10 = 91-100% of the plants were diseased. By September 19 (day 100), the average disease incidence rating ranged from 2.3 to 9.5. The analysis of data in this test indicated that there was a highly significant treatment effect on disease incidence. Compared to the checks, applications of Palladium 62.5 WG (cyprodinil & fludioxinil) and PROUD 3® had significantly lower incidence ratings. Treatments had no effect on overall disease severity, which rated the percentage of foliage that was killed on a scale of 0 to 10, the rate of plant height, or the rate of foliage dieback. No phototoxicity was observed in this trial.

Methods & Materials

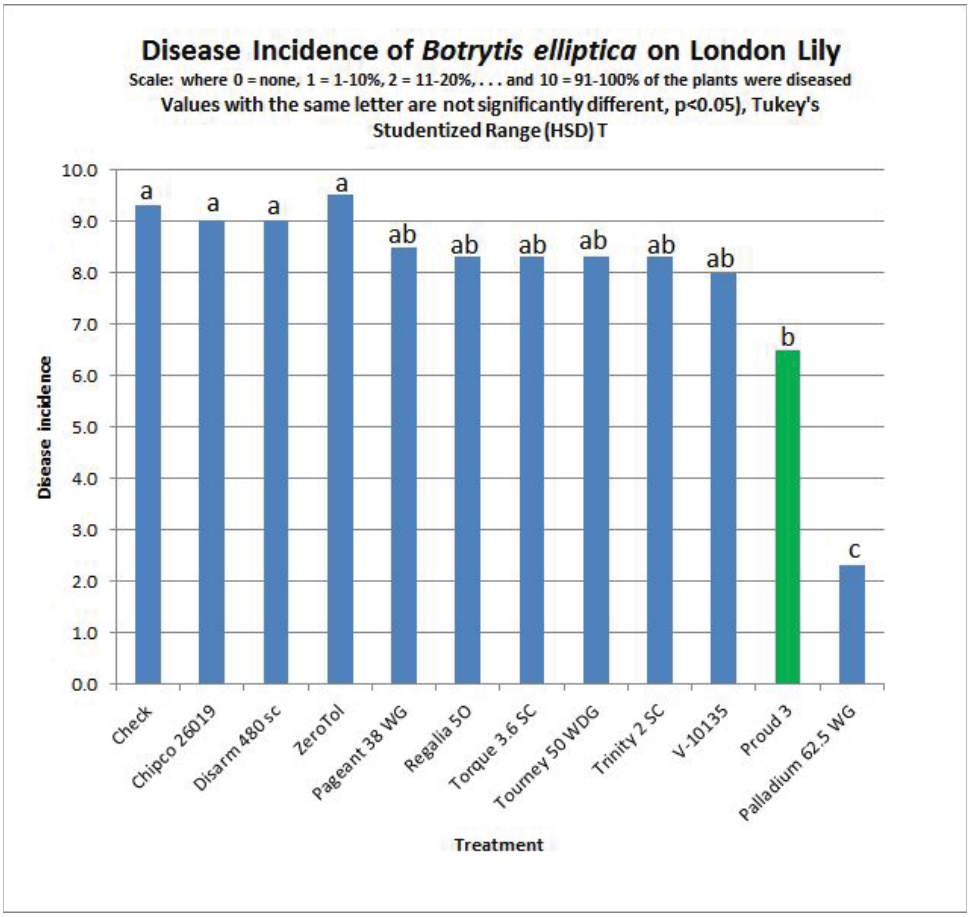
Bulbs used in this field trial were planted on April 12. Plot layout consisted of 5 rows spaced on 40" centers. Each row contained ten 3-foot-long planting cells with 3 feet between the planted cells. Prior to planting, all cells were fertilized by incorporating Apex 14-14-14 fertilizer at 438 pounds per acre in an 8 to 12-inch wide band just below the soil surface within the rows where the bulbs were to be planted. After placing 48 bulbs in each planting cell, bulbs were treated with an in-furrow 18" wide band of Terraclor at 3 lbs/1000 ft of row prior to hilling to control soil-borne diseases.

Treatments were applied on 7, 10 and 14 day intervals starting on June 11 (Day 0). The average initial height of the plants was taken on Day 0. Three plants from each cell were randomly selected and the height of the plants was measured from the soil line to the top of the plant. Height data was taken again on July 25 (Day 45) when flowers were in full bloom. Overall disease incidence of whole cells was taken on a bi-weekly basis starting from June 11 to September 19 (Day 100). A final disease severity rating and foliage dieback rating was taken on October 4 (Day 115).

Photo by University of Maryland Extension Cooperative

Since this was the first time lilies had been planted in this location, inoculum levels were very low. To facilitate disease development, inoculum was sprayed onto the foliage using a backpack sprayer on June 22 and July 25. Inoculum was prepared by growing *Botrytis elliptica* on potato dextrose agar. Once plates were fully colonized, the inoculum was mixed in a blender with water and then strained through cheese cloth into the backpack sprayer.

On the first inoculation, each cell received 100 ml of the inoculum suspension with a spore count of 2,500 spores per ml. On the second inoculation, each cell received 120 ml inoculum suspension with a spore count of 182,000 spores per ml solution. Starting on July 18, the crop was periodically irrigated either by overhead irrigation or via a mist drip-line (starting August 17) as often as possible to assist with disease development.



Conclusion

PROUD 3® organic plant protection significantly reduced disease incidence. Although PROUD 3® performed second best out of the treatments, it is organic, environmentally friendly, and safe for humans, with no down-time. PROUD 3® is a safe and effective alternative to harsher, more toxic pesticides.

PROUD 3® is an OMRI-listed organic crop protection product. It is a safe, foliar applied bactericide, insecticide, miticide and fungicide. The mode of action is by contact. As an insecticide, it best controls soft bodied insects and juveniles.

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