ECO-TILLAGE, BIOPESTICIDE and RESISTANCE MANAGEMENT of WHITE MOLD in DRY BEAN

Phaseolus vulgaris. A field experiment evaluated the impacts of plant spacing (1 vs 2 lines per 75 cm wide bed), growth habit ('Montrose' with Type III vine growth habit; both cultivars are susceptible to white mold but resistant to prevalent strains of rust, and have a similar maturity), and timely application of chemicals (none, thiophanate methyl, and boscalid) within an Integrated Pest Management context. A set of laboratory and greenhouse experiments (Experiment I) systematically evaluated the efficacy of a standard (Topsin) and new (Endura) fungicides applied to foliage of susceptible cultivars 'Montrose' and 'Vision' before inoculation of leaf disks with the white mold pathogen. The rate of leaf colonization by the fungus was recorded over time (2 to 5 days post-inoculation and incubation at 23°C). This series of replicated experiments was run 4 times, and statistical analyses allowed us to combine data for further trend analysis. During the fall of 2004, other experiments evaluated efficacy of fungicides applied in varying gallonage to foliage of the pinto cultivar Montrose. Fungicide Gallonage: combined for 2 runs, 10 reps each, pinto cultivar Montrose

- Topsin - 5 gpa: 2.14 D, 3.94 C, 7.88 CDE, 13.75 DE
- Topsin - 3.33 B: 6.91 B, 11.81 B, 16.83 B
- Endura - 0.26 C: 0.60 C, 1.55 C, 2.88 C
- Endura - 10: 5.87 BC, 17.86 B, 33.56 B, 61.59 B

To convert yield to kg/ha, multiply lb/A x 1.12

Yield of the vine cultivar was increased by 10%, while the yield of the pinto cultivar increased by 15%.

RESULTS and DISCUSSION:

Field results: Bean Cultivar Response to Yaxyn Fin Pot Spacing Cultivar  Spacing  Yield (lbs/ A)  100 Seed Wt (lb)

- Vision 1 Line  2520.54  73.45
- 2 Lines/Bed  3045.21  72.24

- Warroton 1 Line  2376.79  76.65
- 2 Lines/Bed  2621.56  74.75

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REFERENCES:


MATERIALS and METHODS:

Field Evaluations in 2004 & 2005

Components included:

- Plant Spacing: 1 vs 2 lines per 75 cm wide bed
- Growth Habit: ‘Montrose’ with Type III vine growth habit; both cultivars are susceptible to white mold but resistant to prevalent strains of rust, and have a similar maturity
- Plant Size: ‘Montrose’ and ‘Vision’
- Nutrient availability

Laboratory Evaluations in 2004 & 2005

- Fungicide Efficacy (25 gpa): combined for 4 runs, 4 reps each, 2 dry bean cultivars
- Fungicide Gallonage: combined for 2 runs, 10 reps each, pinto cultivar Montrose

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