

Evaluation of fungicides for control of white mold in bean, MI, 2007.

Dry beans (Great Northern White Beans cv. Matterhorn) were planted at the Muck Soils Research Farm, Laingsburg, MI (42.8269 Lat, -84.3650 Lon.) on 12 Jun into seven-row by 25-ft plots (7 in. in-row spacing), separated by a five-foot planted gap between plots and replicated four times in a randomized complete block design. Fertilizer (00-20-20) at 225 lb/A was applied in furrow at planting. Fungicides in this trial were applied with an ATV rear-mounted R&D spray boom delivering 25 gal/A (80 p.s.i.) and using one XR11003VS nozzle per row. Fungicides were applied on 24 Jul at GS 50% flowering and 7 Aug. Post emergence broadleaf and grass weeds were controlled with Dual 1 pt/A at planting and Basagran 1.0 pt/A on 27 Jun and 18 Jul. Insects were controlled with Sevin at 1.0 pt/A on 7 Jul and 11 Aug. White mold was measured as percentage of foliage, beans and stems affected and presented as percent canopy infection on 14 Aug. Each plot (150 ft²) was harvested on 12 Sep to determine yield. Test weight and the 1000 bean weight were determined with a Steinlite SL95 NTEP Moisture Meter and Count-A-Pak® Model 77, respectively. Meteorological variables were measured with a Campbell weather station located at the farm, latitude 42.8269 and longitude -84.365deg. Maximum, minimum and average daily air temperatures (°F) were 88.0, 39.6 and 64.9 and 0-d with maximum temperature >90°F (May); 91.3, 36.1 and 66.6 and 2-d with maximum temperature >90°F (Jun); 95.2, 37.7 and 67.0 and 4-d with maximum temperature >90°F (Jul); 93.4, 36.3 and 68.7 and 4-d with maximum temperature >90°F (Aug); 90.0, 34.1 and 63.4 and 1-d with maximum temperature >90°F (Sep). Maximum, minimum and average daily soil temperatures (°F) were 75.1, 53.1 and 65.8 (May); 82.1, 53.2 and 68.2 (Jun); 83.1, 53.7 and 65.3 (Jul); 80.5, 54.5 and 67.1 (Aug); 77.1, 51.3 and 66.4 (Sep). Maximum, minimum and average soil moisture (% of field capacity) were 79.0, 75.2 and 77.3 (May); 91.7, 77.2 and 81.3 (Jun); 82.1, 74.1 and 77.9 (Jul); 98.1, 75.4 and 80.7 (Aug); 76.2, 66.6 and 69.8 (Sep). Precipitation was 0.99 in. (May), 3.91 in. (Jun), 0.80 in. (Jul), 6.18 in. (Aug) and 1.09 in. (Sep). Plots were irrigated to supplement precipitation to about 0.1 in./A/4 day period with overhead sprinkle irrigation.

White mold developed slowly through Jul and by 14 Aug there was about 33.8% of the canopy affected in the untreated control on pods, leaves and stems. All treatments reduced white mold significantly compared to the untreated control. MANA-Iprodione 4FL at the 4 pt rate, and LEM17 200SC and 200EC at 1.3 pt, resulted in the lowest white mold severity among treatments. There were no significant differences among treatments with respect to yield, test weight or 1000 bean weight. Phytotoxicity was not observed in any treatments.

Treatment and rate/A ^z	White mold severity		Yield (bu/A) ^y	Test weight (lb/bu)	1000 bean weight (oz)
	(%) 14 Aug				
Rovral 4F 1.0 pt	18.8	b ^x	38.4	54.4	1.21
MANA-Iprodione 4FL 1.0 pt.....	15.0	bc	45.7	54.7	1.15
Rovral 4F 2.0 pt	12.5	cd	45.5	54.5	1.19
MANA-Iprodione 4FL 2.0 pt.....	9.3	de	37.3	54.0	1.18
Rovral 4F 4.0 pt	6.0	ef	40.7	54.4	1.19
MANA-Iprodione 4FL 4.0	4.3	f	44.3	54.0	1.15
LEM 17 200SC 1.3 pt	3.5	f	43.8	53.9	1.17
LEM 17 200EC 0.9 pt	8.8	de	48.8	54.8	1.22
LEM 17 200EC 1.3 pt	3.5	f	42.6	53.8	1.16
Untreated Check.....	33.8	a	43.7	54.3	1.21
LSD (p = 0.05)	4.50		8.42	1.14	0.088

^z Application dates were 24 Jul at GS 50% flowering and 7 Aug.

^y Yield was corrected to 13% moisture.

^x Values followed by the same letter are not significantly different at P = 0.05 (Fishers protected LSD).