SOYBEAN (*Glycine max* 'RR 2100")
Asian Soybean Rust; *Phakopsora pachyrhizi*

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**Evaluation of fungicides for control of soybean rust of 'RR 2100' soybean, East Lansing, MI, 2006.**

Soybeans were planted at the Plant Pathology Research Farm, East Lansing, MI 48824 (42.6734 Lat, -84.4870 Lon.) on 25 May into seven-row by 30-ft plots (7 in. in-row spacing), separated by a five-foot unplanted row and replicated four times in a randomized complete block design. Fertilizer (00-20-20) at 225 lb/A was applied in furrow at planting. All 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. Post emergence broadleaf and grass weeds were controlled with Roundup (glyphosate) applied at 2 pt/A, on 16 Jun and 19 Aug. Insects were controlled with Warrior Zeon CS 8 fl oz/A on 19 Jul. The treatments were applied on 25 May (seed treatment; ST); 25 Jul, 3 and 18 Aug at soybean growth stages V10, R1 and R2-5, respectively. Soybean rust and other diseases would have been rated as percent visual foliar infection. Each plot (300 $ft^2$) was harvested on 15 Oct 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. Maximum and minimum air temperatures ($^oF$) over the period of the trial were 92.4 and 54.4 (May), 90.3 and 41.3 (Jun), 94.6 and 48.3 (Jul), 94.7 and 45.2 (Aug), 81.2 and 32.2 (Sep) and 76.7 and 28.2 (Oct). Maximum and minimum relative humidities (%RH) were 98.2 and 36.1 (May), 98.1 and 19.3 (Jun), 98.5 and 30.6 (Jul), 99.1 and 29.8 (Aug), 99.7 and 32.8 (Sep) and 99.9 and 23.9 (Oct). There was 1, 1, 4 and 2 days in May, Jun, Jul and Aug, respectively with maximum temperatures in excess of $90^oF$. Maximum and minimum soil temperatures at 4" depth ($^oF$) over the period of the trial were 82.0 and 56.7 (May), 90.3 and 60.4 (Jun), 92.7 and 65.7 (Jul), 100.2 and 59.4 (Aug), 77.8 and 48.1 (Sep) and 65.1 and 41.1 (Oct). Maximum and minimum soil moisture (% of field capacity) was 42.8 and 34.8 (May), 44.1 and 34.0 (Jun), 34.5 and 28.2 (Jul), 34.5 and 10.2 (Aug), 19.1 and 10.7 (Sep) and 19.1 and 12.3 (Oct). Accumulated precipitation was 1.22 in. (May), 2.79 in. (Jun), 3.16 in. (Jul), 3.64 in. (Aug), 2.94 in. (Sep) and 1.36 in. (Oct).

No soybean rust or any other foliar diseases were observed in the soybean trial. Yield in the untreated check was 53.4 bu/A. Treatments with yield from 53.4 to 72.8, 58.1 to 77.4 and 67.3 to 82.2 bu/A were not significantly different. There was no significant difference in test weight (55.5 to 56.5 lb/bu) or 1000 bean weight 6.14 to 6.76 oz) among any treatments or with the untreated check. No phytotoxicity was observed for any treatments.

| | Treatment and rate/A or rate/cwt seed | Yield (bu/A) | | Test weight (lb/bu) | | 1000 bean weight (oz) | |
|---|---|---|---|---|---|---|---|
| 1 | Untreated Check…….. | 53.4 | c | 56.4 | a | 6.3 | a |
| 2 | Folicur 3.6SC 4 fl oz (B,C)…….. | 76.5 | ab | 55.7 | a | 6.2 | a |
| 3 | Absolute 500SC 5 fl oz (B,C)……. | 72.3 | abc | 56.1 | a | 6.3 | a |
| 4 | Stratego 2.08EC 10 fl oz + (Induce 90SL 0.125 % v/v (B,C)…. | 74.6 | ab | 56.4 | a | 6.5 | a |
| 5 | Laredo 2EC 7 fl oz + NIS 100SL 0.125 % v/v (B)<br>Laredo 2EC 5 fl oz + Headline 2.09EC 6 fl oz +<br>NIS 100SL 0.125 % v/v (C)…… | 72.4 | abc | 56.2 | a | 6.5 | a |
| 6 | Enable 2F 2SC 7 fl oz + COC 100SL 1 % v/v (B)<br>Enable 2F 2SC 5 fl oz + Headline 2.09EC 6 fl oz +<br>COC 100SL 1 % v/v (C)……. | 67.3 | abc | 56.1 | a | 6.3 | a |
| 7 | Dithane DF 75DF 2.5 lb + NIS 100SL 0.125 % v/v (B,C)……. | 75.1 | ab | 55.8 | a | 6.4 | a |
| 8 | Dithane DF 75DF 2.5 lb + NIS 100SL 0.125 % v/v (C)……. | 78.7 | a | 55.7 | a | 6.5 | a |
| 9 | Laredo 2EC 7 fl oz + NIS 100SL 0.125 % v/v (B)<br>Laredo 2EC 5 fl oz + Dithane DF 75DF 2.5 lb (C)……. | 75.0 | ab | 56.1 | a | 6.1 | a |
| 10 | Echo 720 6F 20 fl oz (A); Muscle 3.6F 4 fl oz (B)……. | 82.2 | a | 55.5 | a | 6.6 | a |
| 11 | Echo 720 6F 20 fl oz (A); Folicur 3.6SC 4 fl oz (B)……... | 78.9 | a | 55.7 | a | 6.5 | a |
| 12 | Echo 720 6F 20 fl oz (A)……. | 76.2 | ab | 56.1 | a | 6.5 | a |
| 13 | Headsup 100WP 0.21 lb (A)…… | 72.8 | abc | 56.0 | a | 6.5 | a |
| 14 | Headsup 0.21 oz/cwt (ST); Headsup 0.21 lb (A)……..…… | 75.3 | ab | 55.5 | a | 6.8 | a |
| 15 | Headsup 0.21 oz/cwt (ST)……...…… | 58.1 | bc | 55.7 | a | 6.4 | a |
| 16 | Headline 250EC 4.71 fl oz + Folicur 432SC 3.16 fl oz (B,C)…. | 73.9 | ab | 56.0 | a | 6.5 | a |
| 17 | Headline 250EC 3.56 fl oz + Folicur 432SC 2.38 fl oz (B,C)…. | 77.4 | ab | 55.9 | a | 6.6 | a |
| 18 | Headline 250EC 6.14 fl oz + NIS 100SL 0.25 % v/v (B)<br>Headline 250EC 4.71 fl oz + Folicur 432SC 3.16 fl oz (C)…… | 70.8 | abc | 55.9 | a | 6.6 | a |
| 19 | Headline 250EC 6.14 fl oz + NIS 100SL 0.25 % v/v (B)<br>Headline 250EC 3.56 fl oz + Folicur 432SC 2.38 fl oz (C)…… | 77.4 | ab | 55.8 | a | 6.6 | a |
| 20 | Headline 250EC 6.14 fl oz + NIS 100SL 0.25 % v/v (B)<br>Caramba 90SL 8.2 fl oz (C)……. | 72.2 | abc | 56.1 | a | 6.4 | a |
| 21 | Headline 250EC 4.71 fl oz + Folicur 432SC 3.16 fl oz (B)<br>Headline 250EC 3.6 fl oz + Folicur 432SC 2.4 fl oz (C)…… | 75.2 | ab | 56.0 | a | 6.6 | a |
| 22 | Headline 250EC 4.71 fl oz + Folicur 432SC 3.16 fl oz (B)<br>Caramba 90SL 8.2 fl oz (C)……. | 69.1 | abc | 56.5 | a | 6.4 | a |
| 23 | Domark 240EC 0.31 pt (B,C)…….. | 71.6 | abc | 56.1 | a | 6.6 | a |
| | Tukey HSD (p = 0.05) | 19.52 | | 1.64 | | 0.73 | |

[z] Yield was corrected to 13% moisture.

[y] Application dates: ST= 25 May; A= 25 Jul (V10); B= 3 Aug (R1); C= 18 Aug (R2-5).

[x] Values followed by the same letter are not significantly different at P = 0.10 (Tukey Multiple Comparison).