

Using Fungicides to Manage Head Rot on Sunflower



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Methods

- Randomized complete block design with three or four replicates.
- Ascospores applied at early flowering and seven days later followed by cyclic misting (one to two minutes twice per hour) to create infectious environment for three days.
- Confection type sunflowers.
- Fungicides applied with CO₂ pressurized backpack sprayer with XR8001 or 02 nozzles oriented to maximize deposition on the face of the sunflower head.
- Flowers sprayed traveling west in east/ west oriented plots

Fungicide	Rate	Volume (GPA)	Incidence (%)	Severity (%)
Untreated			26.2	89.45
Prosaro + Induce	8.2 fl oz + 0.125% v/v	18.4	32.1	83.85
Endura + Endura	6 oz 2nd app. 1 wk later	9.2	28.4	89.05
Topsin M	2 lb	9.2	27.2	70.65
Endura + Ronilan	6 + 16 oz/ 2nd app. 1 wk later	9.2	24.8	64.98
Prosaro + Induce	8.2 fl oz + 0.125% v/v	9.2	24.8	56.58
Proprietary A	8.0 oz	18.4	23.7	92.98
LEM	3.0 oz (AI)	18.4	23.0	82.15
Endura	6 oz	9.2	21.2	61.45
Prosaro + In-Place + Syl-Tac	6.5 fl oz + 1 fl oz + 4 fl oz/A	9.2	19.6	81.0
LSD			13.7	NS

Table 1 a. White mold incidence and head severity by fungicide, fungicide rate and spray volume Langdon, 2007.



Figure 1. Sclerotinia infected sunflower head, 5 numerical rating indicating 100% severity.

Treatment	Rate/ acre	Incidence (%)	Severity (0-5)	Yield (Lbs)
Prosaro + Induce	6.5 fl oz + 0.125% v/v	6.8	4.4	1854
Prosaro + Induce	8.2 fl oz + 0.125% v/v	7.6	4.7	2166
Proline + Induce	5.7 fl oz + 0.125% v/v	9.1	5.0	1936
LEM 17 EC	2.0 oz (ai)	3.1	2.5	1991
LEM 17 EC	3.0 oz (ai)	3.8	5.0	1653
LEM 17 EC	4.3.0 oz (ai)	4.7	5.0	2219
LEM 17 SC	4.3.0 oz (ai)	7.8	4.8	2075
Endura	6.7 oz	6.0	3.7	2050
Untreated		7.8	5.0	1881

Table 3 a. White mold incidence, head severity and yield by fungicide and fungicide rate Carrington, 2007.

Fungicide	Rate	Volume (GPA)	Incidence (%)	Severity (%)
Prosaro + Induce	6.5 fl oz + 0.125% v/v	18.4	19.4	78.13
Proline + Induce	5.7 fl oz + 0.125% v/v	18.4	19.1	79.15
LEM	2.0 oz (ai)	18.4	19.0	78.25
Ronilan	16 oz	9.2	18.6	62.28
Endura	6 oz	18.4	18.4	83.40
Headline	9 fl oz	18.4	16.8	77.88
LEM	4.3 oz (ai)	18.4	16.6	71.73
Proprietary B	4.6 fl oz	18.4	10.5	61.73
Topsin M	2 lb.	18.4	8.8	58.60
Proprietary C	9.0 fl oz	18.4	5.0	35.98
LSD			13.7	NS

Table 1 b. White mold incidence and head severity by fungicide, fungicide rate and spray volume Langdon, 2007.

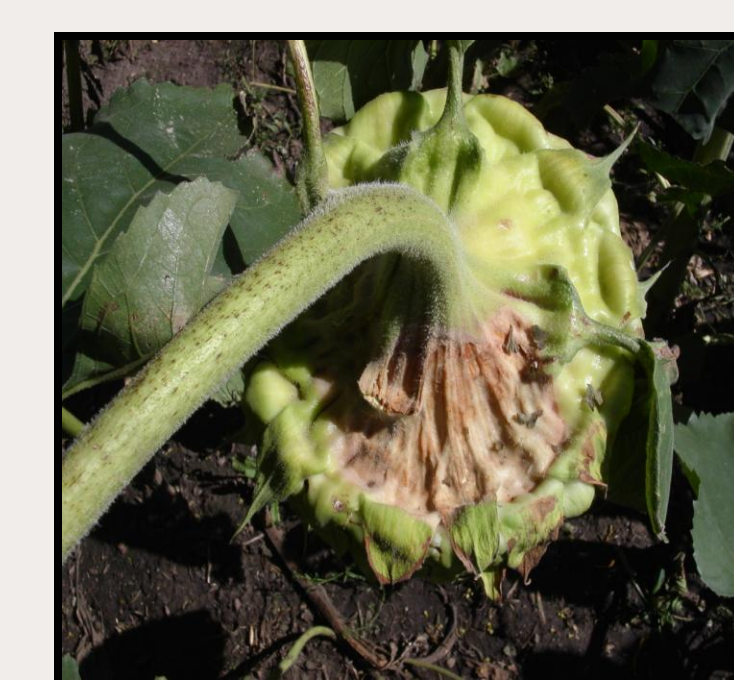
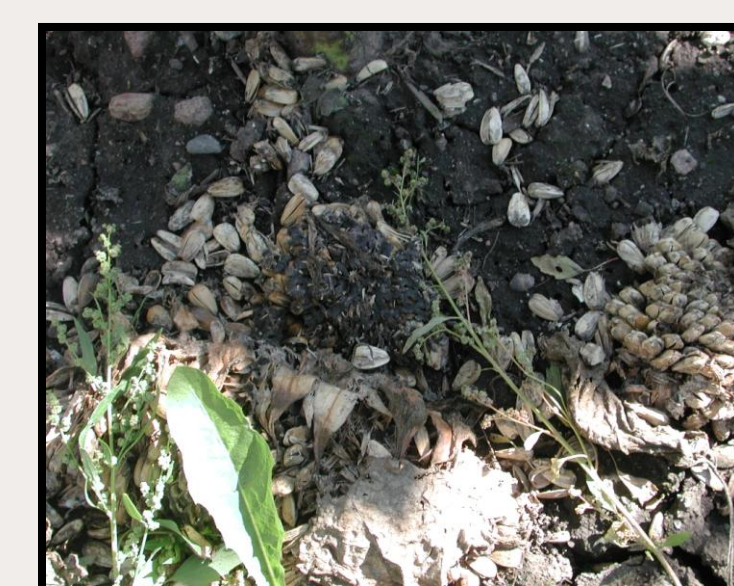


Figure 2. Sclerotia deposited on ground and Sclerotinia infected sunflower head, 2 numerical rating indicating 25-50% severity.

Treatment	Rate	% Incidence
Untreated		22.5
Interlock + Preference	2 fl oz/ a + 0.25%v/v	27.6
AG 6011	6 fl oz/ a	9.1
AG 7010	1 pt/ a	18.9
AG 7011	1 pt/ a	15.6
AG 7015	1 pt/ a	18.8
AG 7042	0.5% v/v	12.7
Interlock + AG 7042	2 fl oz/ a + 0.5%v/v	27.4
Interlock + AG 3015	2 fl oz/ a + 0.5%v/v	17.2
Endura alone		5.1
LSD		13.9

Table 2. White mold incidence after treatment with Endura fungicide mixed with Winfield Solutions, LLC adjuvants Langdon, 2007



Figure 3. Mature sunflowers, note difficulty in effectively applying treatments in plots due to sunflower density and height.

Treatment	Rate/ acre	Incidence (%)	Severity (0-5)	Yield (Lbs)
Headline	9.0 fl oz	2.0	5.0	1746
Topsin M	2 lb	3.6	4.7	2437
Proprietary C	9.0 fl oz	4.1	3.8	1990
Proprietary A	8.0 fl oz	10.9	4.6	1954
Proprietary B	4.6 fl oz	3.1	5.0	2013
Prosaro + In-Place + Syl-Tac	6.5 fl oz + 1 fl oz + 4 fl oz	11.0	4.8	1675
Ronilan	16 oz	5.3	5.0	1854
Prosaro + Induce	8.2 fl oz + 0.125% v/v	4.2	4.7	2066
Untreated		7.8	5.0	1881

Table 3 b. White mold incidence, head severity, and yield by fungicide and fungicide rate Carrington, 2007.