

**Evaluation of Fungicide Products for control of Entomosporium Leaf spot  
(*Entomosporium mespili*) on India Hawthorn 'Alba' (*Raphiolepis indica*)**

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**Purpose:** Evaluate three fungicide products for preventive control of Entomosporium leaf spot on India hawthorn.

**Materials and Methods:** Florida-grown India hawthorn plants were purchased and located near the UF IFAS Plant Pathology greenhouse facility in Gainesville. The test was composed of seven treatments. Biological replicate was plant and five plant replicates were assigned randomly to each treatment. Test materials were applied on either a 14 or 28 day schedule according to protocol. Test materials were sprayed to runoff using a CO<sub>2</sub> backpack sprayer operating at 30psi. Plants were inoculated with symptomatic leaves from nearby diseased plants 7d after the first fungicide application. Infected leaves were placed onto the soil surface of each inoculated pot. The plants were maintained outside in pots and overhead irrigation was applied late afternoons to increase disease pressure. Disease incidence and severity on leaves of two flagged branches per plant was recorded every 14d. Incidence values are the number of affected leaves per branch and severity values are the number of lesions per affected leaf. Plants were inspected for phytotoxicity for the duration of the test.

**Treatments:**

T1- not treated

T2- Standard fungicide Banner 3oz/100gal 14 days

T3-Standard fungicide Heritage 1.oz/100gal 14 days

T4- Armada 3oz/100gal every 28 days

T5- Armada 6 oz/100gal every 14 days

T6- Armada 6 oz/100gal every 28 days

T7- Armada 9oz/100gal every 28 days

**Results:** Plants had little to no disease on leaves at the time of purchase. Leaves with any symptoms were removed prior to beginning the test. Environmental conditions were favorable for disease development throughout much of the trial. Disease developed in controls that were not treated with fungicide and on some treatment plants. Disease incidence and severity increased on controls throughout much of the trial, except when incidence declined due to defoliation of symptomatic leaves. Plants treated with T7, Armada at 9 oz/100gal, 28d had the least disease and could not be separated statistically from T2, Banner at 3 oz, 14d on most rating dates. Armada at the 3oz rate did not provide preventive control statistically significant from the untreated control. The T5 and T6, 6oz, rates of Armada gave moderate preventive control and could not be separated from T3, Heritage on most dates. Defoliation was observed to occur on affected plants but was not quantified. No phytotoxicity was observed throughout the trial.

Table 1. Product application schedule for all treatments.

	1 <sup>st</sup> app Feb 26	14days March 12	28 days March 26	42 days April 9	56days April 23	70 days May 7
T1-not treated						
T2-Banner	X	X	X	X	X	X
T3-Heritage	X	X	X	X	X	X
T4-Armada3oz/100G	X		X		X	
T5-Armada 6oz/100G	X	X	X	X	X	X
T6-Armada- 6 oz/100G	X		X		X	
T7-Armada 9 oz/100G	X		X		X	

Table 2. Mean disease incidence over time. Date follows DI in ddmmyy format. Means followed by the same letter are not significantly different according to the Waller Duncan k-ratio t-test ( $k=100, P \leq 0.05$ ).

	DI050307		DI120307		DI190307		DI260307		DI020407		DI250407		DI160507		DI300507	
T1	1.1	BC	1.9	BCD	2.9	B	4.8	A	5.0	A	3.5	C	2.9	BC	3.5	BC
T2	0.5	C	0.8	CD	1.2	BC	1.8	BC	1.8	D	3.3	C	3.5	B	3.3	BC
T3	0.9	BC	2.0	BCD	2.6	B	2.3	BC	2.2	CD	4.2	BC	3.2	BC	3.0	BC
T4	2.4	A	5.1	A	6.0	A	4.1	AB	3.4	BC	7.6	A	7.0	A	7.5	A
T5	1.9	AB	3.8	AB	5.4	A	3.9	AB	3.9	AB	6.2	AB	6.1	A	6.5	A
T6	0.8	BC	2.6	BCD	2.3	BC	2.5	ABC	2.2	CD	3.6	C	3.7	B	3.9	B
T7	0.4	C	0.4	D	0.5	C	1.0	C	1.2	D	1.8	C	1.5	C	1.9	C

Table 3. Mean disease severity over time. Date follows DS in ddmmyy format. Means followed by the same letter are not significantly different according to the Waller Duncan k-ratio t-test ( $k=100, p=0.05$ ).

	DS050307		DS120307		DS190307		DS260307		DS020407		DS250407		DS160507		DS300507	
T1	3.3	A	3.8	A	3.8	AB	2.7	C	3.8	BC	4.7	A	4.5	A	5.0	A
T2	1.1	AB	1.4	BC	1.4	CD	2.3	CD	2.5	CD	2.3	BC	2.3	BC	2.5	BC
T3	1.2	AB	2.0	ABC	2.6	BC	2.8	C	3.5	BC	3.0	ABC	1.7	C	1.8	BC
T4	2.9	AB	3.4	AB	3.4	AB	6.8	A	7.7	A	4.0	AB	4.4	A	4.5	A
T5	2.8	AB	3.2	AB	4.8	A	5.1	AB	5.7	AB	4.6	A	4.5	A	4.6	A
T6	1.1	AB	2.7	ABC	1.6	CD	3.3	BC	3.7	BC	3.0	ABC	2.9	B	3.0	B
T7	0.4	B	0.7	C	0.5	D	0.7	D	0.8	D	1.8	C	1.2	C	1.4	C

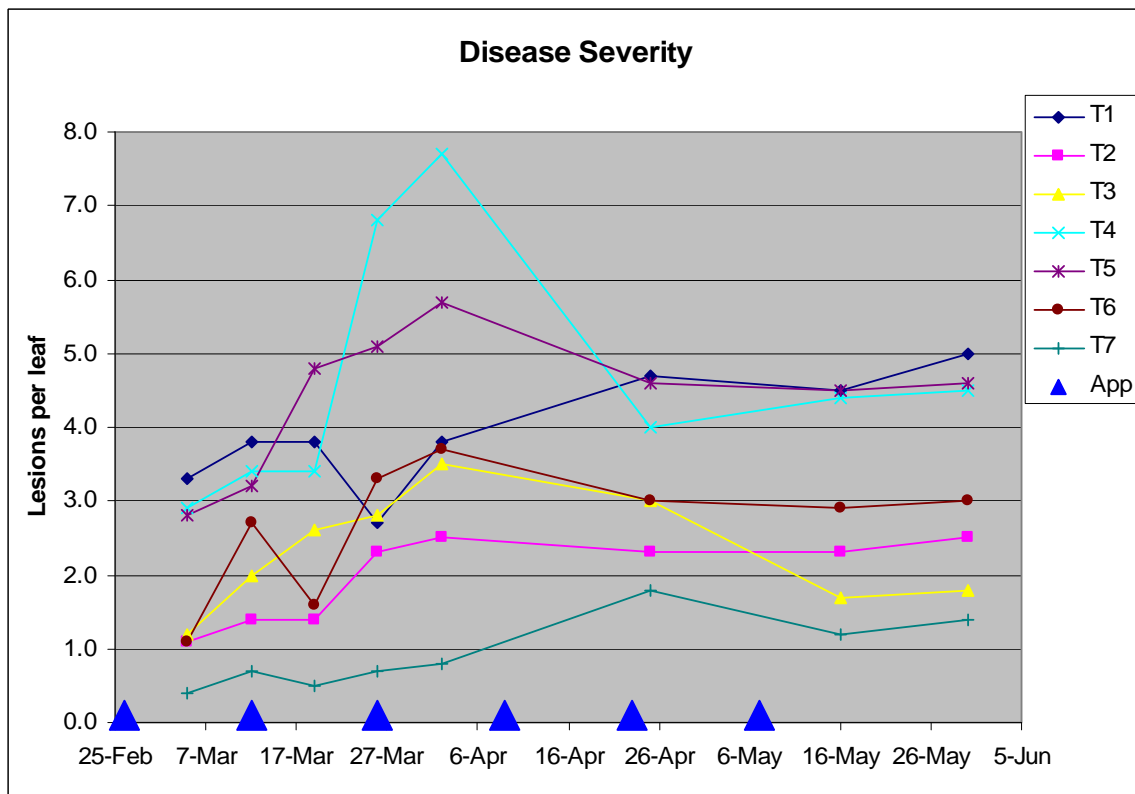
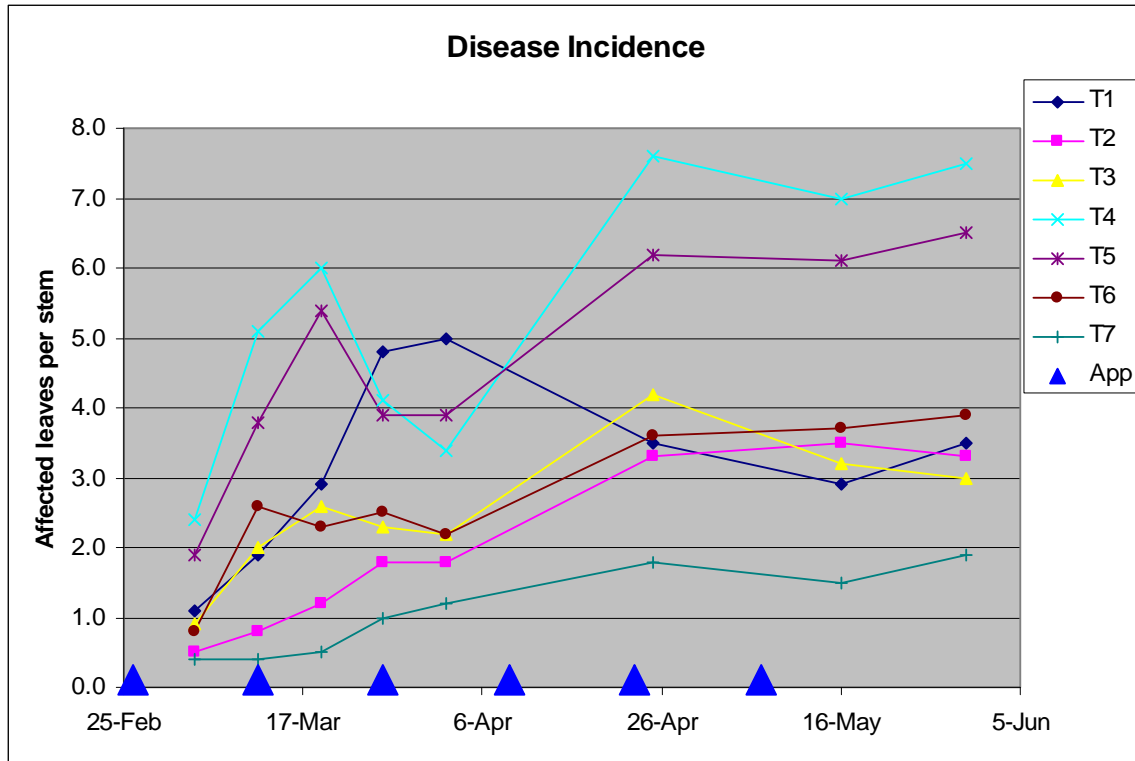


Figure 1 and 2. Disease incidence and severity means for treatments 1 through 7 (described above) over time. Application dates also are denoted.