

Title: Insecticide application timing for Orange Wheat Blossom Midge control.

Objective: To evaluate the efficacy and optimum application timing of insecticides for the control of OWBM in spring wheat.

Report:

Proper insecticide application timing is considered an important factor in the management of the Orange Wheat Blossom Midge. This study was conducted to evaluate the efficacy of five insecticides when applied at three different timings. The timings included early tiller, 50% flowering and 50% anthesis. The early tiller treatments were included to assess the efficacy of soil applied treatment, and were timed to coincide with an early season herbicide application (Zadoks 22, two tillering). The insecticides evaluated included AgriTrap, Fastac, Lorsban Advanced, Aza-Direct and Warrior II. A non-treated control was also included.

Due to uncommonly low OWBM pressure this year, no significant differences were observed for midge control, yield or grain quality. However, significant differences were observed for crop injury. Lorsban Advanced resulted in 30 % crop injury when applied to early tillered wheat. However, the crop eventually recovered, and no effect on yield could be detected.

Table 1. Materials and Methods - Insecticide application timing for Orange Wheat Blossom Midge control - 2014.

Seeding Date:	5/3/2014	Harvest Date:	9/6/2014
Julian Date:	123	Julian Date:	249
Seeding Rate:	110 lb/A	Soil Type:	Creston Sil
Previous Crop:	Fallow	Soil Test:	431-40-258
Tillage:	Conventional-Till	Fertilizer:	200-30-100
Irrigation:	N/A	Herbicide:	Huskie 11 floz/A and Axial XL 16.4 floz/A
		Fungicide:	Headline 9 floz/A

Table 2. Main effect of insecticide on Orange Wheat Blossom Midge control in spring wheat - 2014.

Insecticide	CI %	HD Julian	HT in	LOD %	OWBM no/spk	YLD bu/A	PRO %	TWT lb/bu
Check	0.0	178	34.9	15.0	0.1	115.4	14.4	56.8
AgriTrap Foliar	0.0	178	35.6	11.4	0.1	112.5	14.3	57.0
Fastac	0.0	178	35.3	13.4	0.2	111.1	14.1	57.7
Lorsban Advanced	10.6	178	35.3	17.2	0.3	115.5	14.2	57.5
Aza-Direct	0.0	178	35.1	16.1	0.3	111.1	14.2	57.3
Warrior II	0.0	178	35.1	13.4	0.2	123.3	14.1	57.8
LSD	0.7	ns	ns	ns	ns	ns	ns	ns
Pr>F	0.0001	0.6812	0.6704	0.2309	0.8786	0.3096	0.4143	0.1147

Table 3. Main effect of application timing on Orange Wheat Blossom Midge control in spring wheat - 2014.

Timing	CI %	HD Julian	HT in	LOD %	OWBM no/spk	YLD bu/A	PRO %	TWT lb/bu
Early tiller	5.3	178	35.4	18.4	0.2	110.6	14.3	56.9
50% heading	0.0	178	34.9	16.8	0.3	116.7	14.2	57.6
50% anthesis	0.0	178	35.3	8.2	0.0	117.2	14.2	57.6
LSD	0.6	ns	ns	ns	ns	ns	ns	ns
Pr>F	0.0001	0.4082	0.5575	0.5171	0.1394	0.2561	0.4827	0.3518

CI: crop injury, HD: heading, HT: height, LOD: lodging, OWBM: orange wheat blossom midge, YLD: yield, PRO: protein, TWT: test weight, ns: not significant

Table 4. Effect of insecticide and timing on Orange Wheat Blossom Midge control in spring wheat - 2014.

Insecticide	CI %	HD Julian	HT in	LOD %	OWBM avg.	YLD bu/A	PRO %	TWT lb/bu
Early tiller								
AgriTrap Foliar	0.0	178	36.0	27.3	0.0	95.6	14.6	56.3
Fastac	0.0	178	36.0	36.0	0.7	104.6	14.3	57.0
Lorsban Advanced	31.7	178	35.7	3.0	0.4	116.8	14.1	57.4
Aza-Direct	0.0	178	34.3	13.3	0.0	103.7	14.3	57.2
Warrior II	0.0	178	35.0	3.3	0.2	126.2	14.2	57.4
50% heading								
Check	0.0	178	34.7	13.0	0.2	117.7	14.2	57.2
AgriTrap Foliar	0.0	178	35.7	1.7	0.2	119.2	14.2	57.4
Fastac	0.0	178	34.7	1.3	0.0	113.2	14.0	58.0
Lorsban Advanced	0.0	178	34.7	30.7	0.3	117.5	14.3	57.5
Aza-Direct	0.0	178	35.3	26.7	1.0	111.6	14.2	57.3
Warrior II	0.0	178	34.7	27.3	0.2	121.0	14.1	58.4
50% anthesis								
Check	0.0	178	34.7	4.7	0.0	111.9	14.2	57.2
AgriTrap Foliar	0.0	178	35.0	5.3	0.0	122.7	14.2	57.4
Fastac	0.0	177	35.3	3.0	0.0	115.5	14.1	58.0
Lorsban Advanced	0.0	177	35.7	18.0	0.1	112.1	14.2	57.7
Aza-Direct	0.0	178	35.7	8.3	0.0	118.1	14.2	57.6
Warrior II	0.0	178	35.7	9.7	0.0	122.7	14.2	57.7
LSD	1.2	ns	ns	ns	ns	ns	ns	ns
Pr>F	0.0001	0.2127	0.1164	0.2533	0.5217	0.4774	0.7798	0.9790

CI: crop injury, HD: heading, HT: height, LOD: lodging, OWBM: orange wheat blossom midge, YLD: yield, PRO: protein, TWT: test weight, ns: not significant