

Project Title: Orange Wheat Blossom Midge Insecticide Trials.

Objective: To evaluate new and established insecticide products for the control of the Orange Wheat Blossom Midge (OWBM).

Material and Methods:

The study was established using conventional tillage practices, in a field with a history of moderate to high midge densities. The previous crop was spring wheat and the site was fertilized with 97-30-120-24 pounds per acre of N-P-K-S. 'Hank' hard red spring wheat was planted in seven inch row spacing's to a depth of 2 inches at 70 lb/A on May 11. Treatments were applied on July 8 when the crop was 85% headed. Treatments were applied to 10 by 15 foot plots with a CO₂ backpack sprayer in 20 GPA using Teejet XR11002 nozzles. Three spikes per plot were randomly collected on August 6. The spikes were dissected in order to determine the number of larvae per spike and the number of larvae per seed. The study was harvested on September 13.

Results:

Midge densities were moderate in this experiment, with the nontreated check averaging 75 larvae per spike and 0.7 larvae per seed (Table 1). All insecticide treatments significantly reduced midge densities relative to the check. However, there were no differences among insecticide treatments. Although midge populations were moderate, the impact on yield was noticeable. Yields ranged from a low of 59 bu/A in the check to a high of 90 bu/A for Warrior II. All insecticide treatments improved yield relative to the check. In addition, Warrior II produced higher yields than Lorsban. Seed protein levels were highest in the check, owing to the feeding damage caused by the midge and the associated reduction in starch content. Likewise, feeding damage impacted falling numbers (FN) and sprout damage. The check had the lowest falling numbers and the highest percent sprout. All insecticide treatments improved falling number values and percent sprout relative to the check plot, but there were no statistical difference among the insecticide treatments.

Table 1. Control of the Orange Wheat Blossom Midge with insecticides. Kalispell, MT 2010.

Treatment	Rate	OWBM	OWBM	TWT	Yield	Protein	FN	Sprout
		no/spike	no/seed	lb/bu	bu/A	%	sec.	%
Check		75.22	0.70	57.30	59.30	14.60	320.30	1.50
Endigo COC	4.5 oz/a 1.0 % v/v	14.78	0.15	58.10	85.20	12.17	418.30	0.27
Warrior II COC	1.9 oz/a 1.0 % v/v	31.22	0.29	58.27	90.70	12.63	403.00	0.37
Cobalt COC	13.0 oz/a 1.0 % v/v	18.56	0.18	58.77	87.00	11.83	401.00	0.63
Lorsban	16.0 oz/a	20.44	0.19	58.13	79.30	11.73	382.70	0.43
Endigo COC	3.5 oz/a 1.0 % v/v	40.67	0.37	58.63	88.20	12.53	416.00	0.63
MIN		14.78	0.15	57.30	59.30	11.73	320.30	0.27
MAX		75.22	0.70	58.77	90.70	14.60	418.30	1.50
MEAN		33.48	0.31	58.20	81.62	12.58	390.22	0.64
LSD (P=.05)		31.67	0.28	0.92	11.21	1.82	40.99	0.44
CV		52.00	48.93	0.87	7.55	7.92	5.77	37.88
Treatment Prob(F)		0.0146	0.0119	0.0572	0.001	0.0494	0.0030	0.0011