

Insect Testing With Baythroid on ‘RB07’ Hard Red Spring Wheat, 2010

The purpose of this study was to evaluate the efficacy of the insecticide Baythroid for the control of various insect pests on ‘RB07’ hard red spring wheat. The experiment was conducted at the North Central Experiment Station south of Minot, ND. In the fall of 2009, 217 lb/acre urea was spread and incorporated with chisel plow spikes. Plots were planted on May 11, at a rate of 90 lb/acre into minimum tillage wheat residue with an air hoe drill. Plots were 6.7 ft by 25 ft. Treatments were replicated four times in a RCB design. The first Baythroid application was made on 15 Jun at the 4 to 5 leaf stage. The second Baythroid application was made on 12 Jul at the flowering stage. Evaluations were made within 72 h after each treatment. Aphids and thrips per plant were counted on 10 plants per plot after both Baythroid applications. Grasshopper injury and the number of white heads per plot caused by wheat stem maggot (WSM) was determined after the flowering stage. The herbicide, Wolverine, was applied at a rate of 27.4 oz/acre for weed control at the 4 to 5 leaf stage. The fungicide, Stratego, was mixed with one of the Baythroid treatments at a rate of 4 oz/acre. Pesticides were applied using a carbon dioxide propelled back pack sprayer and a hand boom with flat fan nozzles at a rate of approximately 10 gal/acre. Data were transformed log (x+1) prior to analysis. Data were analyzed with ANOVA and treatment means were separated using the Tukey’s honestly significant difference (HSD) test, P = 0.05.

There were no significant differences among treatments in the number of aphids per plant after the 4 to 5 leaf Baythroid applications. Thrips per plant were significantly reduced when Baythroid was applied at a 1.8 fl oz/acre rate with Stratego at the 4 to 5 leaf timing. The number of aphids and thrips on the Baythroid 1 fl oz/acre and the 1.8 fl oz/acre rates was not significantly different. Aphid, thrips, grasshopper and WSM injury was low after the flowering applications. There were no significant differences among treatments applied at the flowering stage.

This research was supported by an industry gift from Bayer Crop Science.

Table 1. Four to Five Leaf Stage Evaluation of Baythroid on RB07 Hard Red Spring Wheat.

Treatment	Rate/acre	Aphids/plant	Thrips/plant
Check	--	0.175a	0.300a
Baythroid XL 1EC	1.0 fl oz	0.075a	0.100ab
Baythroid XL 1EC	1.8 fl oz	0.025a	0.100ab
Baythroid XL 1EC ^a	1.8 fl oz	0.05a	0.075b

Means within the same column followed by the same letter are not significantly different, Tukey's HSD (P = 0.05)

The herbicide, Wolverine, was applied to all treatments at the 4-5 leaf stage.

^aThe fungicide, Stratego, was applied at the 4-5 leaf stage.

Table 2. Flowering Stage Evaluation of Baythroid on RB07 Hard Red Spring Wheat.

Treatment	Rate/acre	Aphids/plant	Thrips/plant	Grasshopper injury	Wheat Stem Maggot/plot
Check	--	0.00a	0.5a	1.3a	0.5a
Baythroid XL 1EC ^a	1.0 fl oz	0.00a	0.0a	0.0a	0.0a
Baythroid XL 1EC ^a	1.8 fl oz	0.00a	0.0a	0.0a	0.0a
Baythroid XL 1EC ^{ab}	1.8 fl oz	0.00a	0.0a	0.0a	0.0a
Baythroid XL 1EC ^c	1.8 fl oz	0.00a	0.0a	0.0a	0.0a

Means within the same column followed by the same letter are not significantly different, Tukey's HSD (P = 0.05)

The herbicide, Wolverine, was applied to all treatments at the 4-5 leaf stage.

^aApplied at 4-5 leaf stage

^bThe fungicide, Stratego, was applied at the 4-5 leaf stage.

^cApplied at flowering stage