

Evaluation of Pydrin-Penetrator as a Control for Pink Bollworms

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Summary

Penetrator, an oil based adjuvant, was added to Pydrin for pink bollworm control to determine if this combination would enhance the amount of control or increase yields. Results indicated that the addition of Penetrator did not increase the effectiveness of Pydrin. No reduction in boll infestation occurred and yields were not increased.

Table 1 shows the percent of infested bolls taken weekly during the duration of the test. Pre-treatment counts taken June 24 showed an average boll infestation of 10 percent. The percent of infested bolls on June 29, taken 4 days after the initial application, shows an increase in the infestation indicating that peak egg hatch occurred about the time of the initial application.

Counts taken on July 7 and 14, or after 2 and 3 applications, respectively, demonstrated that all treatments had fewer infested bolls than the untreated check. It also showed that Pydrin at 0.1 lb. used alone had significantly fewer infested bolls than Pydrin at 0.075 lb. plus Penetrator. The addition of Penetrator to either rate of Pydrin did not increase the efficacy in terms of reduced infested bolls.

Infested boll counts taken after July 14 indicated that no differences occurred between treatments of Pydrin with or without Penetrator but all treatments had a lower infested boll percentage than the untreated check.

Table 2 indicates the effects of infested bolls on yields. The untreated check, which had a significantly higher percent of infested bolls, produced considerably less cotton than the remaining treatments. The reduced boll infestation in the Pydrin 0.1 lb. treatment observed in the July 7 and 14 samples was reflected in the amount of cotton produced. Pydrin 0.1 lb. and used alone, produced more seed cotton than the low rate of Pydrin with Penetrator added.

As was the situation with the percent of infested bolls, the addition of Penetrator to either rate of Pydrin did not have a significant impact on yield production. In fact, where Penetrator was used, the yield was less than when Pydrin was used alone.

In both treatments where Pydrin was used at 0.075 lb. the reduction of infested bolls was slower than where the 0.1 lb. rate was used. This was demonstrated in the samples taken on July 14 where the 0.075 lb. rate had twice as high a rate of infested bolls as the high rate of Pydrin. The addition of Penetrator did not speed up the rate of reduction.

It would appear that Penetrator, when added to Pydrin, does not increase the efficacy of the insecticide when applied for pink bollworm control.

Table 1. Percent of Pink Bollworm Infested Bolls.

Treatments	Rate/A.	Date Bolls Collected					
		6/29	7/7	7/14	7/22	7/30	8/7
Check	--	30	79 a	77 a	60 a	57 a	48 a
Pydrin + Penetrator	0.075 10 oz.	32	36 b	22 b	10 b	10 b	7 b
Pydrin	0.075	35	28 bc	20 bc	10 b	4 b	5 b
Pydrin + Penetrator	0.10 10 oz.	30	19 c	10 bc	8 b	7 b	6 b
Pydrin	0.10	26	18 c	9 c	6 b	5 b	3 b

Means followed by the same letter are not significantly different at the 5% level.

Table 2. Yields in Pounds of Seed Cotton per Acre.

Treatments	Rate/Acre	Lbs. Seed Cotton per Acre
Check	--	1449 a
Pydrin Penetrator	0.075 10 oz	2756 b
Pydrin	0.075	3254 bc
Pydrin Penetrator	0.10 10 oz.	2956 bc
Pydrin	0.10	3674 c

Application Intervals with Pydrin for Pink Bollworm Control

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Summary

A test conducted at Yuma was designed to determine if synthetic pyrethroids could be used at lower dosage rates or extended application intervals to maintain effective pink bollworm control. Based on the results of this test, it was difficult to conclude that extended intervals were feasible, even though yield differences did not exist, primarily because of the erratic application intervals and the possibility of adverse effects from small plots. However, there appears to be some validity in pursuing this direction of insecticide management in an effort to reduce control costs and increase efficiency.

Pre-treatment boll samples indicated an average boll infestation of 9 percent for the test area. Table 1 shows the percent of infested bolls at each sampling date after the initial application. No significant differences occurred between treatments after the first application was applied. The next 4 samples showed a significant difference between the check and the interval treatments but not between treatments. On the final sample taken August 14, Pydrin at 0.1 lb. on a 6-day interval had a lower boll infestation than did Pydrin at 0.05 lb. on a 6-day interval and Pydrin at 0.1 lb. on a 12-day interval. However, this difference was not reflected in a significant yield increase as indicated in Table 1. No yield differences occurred between the interval treatments but all produced more seed cotton than the untreated check.

Although yield differences did not occur, Pydrin at 0.1 lb. on a 6-day schedule was the only treatment that reduced boll infestations to what is generally considered acceptable levels. A gradual decrease in boll infestations in the untreated check may indicate that plot size was too small to maintain extreme population pressures and this could have affected other treatments.

Table 1. Percent Boll Infestation and Harvested Yields.

Treatments	Date Bolls Collected						Yield -lbs. Seed Cotton/A.
	6/29	7/8	7/16	7/22	7/30	8/14	
Untreated Check	23 a	78 a	55 a	60 a	50 a	45 a	1368 a
Pydrin .05 6- day interval	14 a	38 b	20 b	12 b	14 b	15 b	3335 b
Pydrin .1 6-day interval	14 a	33 b	17 b	7 b	7 b	6 c	3603 b
Pydrin .1 9-day interval	12 a	40 b	18 b	12 b	13 b	12 bc	3382 b
Pydrin .1 12-day interval	15 a	33 b	18 b	16 b	17 b	19 b	3133 b

Means followed by the same letter are not significantly different at the 5% level.