

**PERFORMANCE AND BENEFITS
OF PROVADO INSECTICIDE ON EARLY
SEASON PLANT BUG POPULATIONS**

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Abstract

Three large plot demonstrations were implemented on conventional cotton varieties in the central Mississippi Delta area to determine the performance and benefits of Provado insecticide on early season plant bug control and fruit retention. The study was conducted by King's Ag Consulting, Inc. which is a private consulting firm. One trial was conducted in 1995 and two trials were conducted in 1996. Timely applications of Provado were applied at pin head square stage and compared to conventional pin head square applications.

Introduction

The introduction of Provado insecticide into the current insecticide market ushered in a new class of chemistry for the cotton industry. The pests that Provado controls includes primarily plant bugs and aphids. Currently the MS delta area is in need of a product to control resistant plant bugs. This pest becomes very difficult to control especially late in the growing season.

Provado works on pests through direct contact and local systemic action. This combination of activity provides knockdown of exposed insect pests and residual control of hidden pests. Since plant bugs are constantly moving in and out of fields and are difficult to scout for at low levels the systemic protection offered by Provado is of great value in early season control.

Materials and Methods

The 1995 trial was conducted near Tchula, MS on the farm of Larry Killebrew. Two 30 acre plots were established. One plot was sprayed with Provado while the other received the standard treatment of Bidrin plus Methyl Parathion. The Provado applications were initiated at the 4-5 true leaf stage. A total of 3 applications were made on a 10 day interval with Provado at 3.75 fluid ounces per acre. Two applications were made by ground and one by air. A total of two Bidrin/Methyl Parathion applications were made. Bidrin was applied at 0.25 LB aia and Methyl at 0.25 LB aia. The first application was on a band with the second by air because of weather conditions. The plots were evaluated for plant bugs using the sweep net technique. A % square set was recorded for the plots as well as square initiation.

The evaluation dates were 6-9-95, 6-14-95, 6-19-95, and 6-26-95. The data for this trial can be found in Table I.

In 1996 two trials were conducted near the Tchula, MS area to compare Provado to two different standard early season pin head treatments.

Two forty acre plots were established on Little Omega Farms owned by George Cunningham. A standard treatment of Orthene plus Methyl Parathion was applied in one plot while the other plot was sprayed with Provado. Methyl Parathion was applied at 0.25 LB aia plus Orthene at 0.33 LB aia. A total of two applications were made to this plot. The applications were made by ground on a band. The first application was made at the pin head square stage on 6-6-96 with the second application following on 6-14-96. Provado was applied at a broadcast rate of 3.75 fluid ounces per acre for the first and second application. The third application was made at a rate of two fluid ounces per acre. All applications were made by ground on a band. The dates of application were 5-27-96, 6-6-96, and 6-17-96. The plots were evaluated for plant bugs, % square set, and square initiation. The data for this trial can be found in Table II.

The second trial in 1996 was conducted on the farm of Larry Killebrew near Tchula, MS. Two 30 acre plots were established with one sprayed with Provado and the other with Bidrin. The Provado plot was initiated at the fourth true leaf stage. The Bidrin plot was started at the early pin head square stage. The Provado plot was sprayed a total of three times while the Bidrin plot was sprayed twice. Provado was applied at a broadcast rate of 3.75 fluid ounces per acre on 6-1-96, 6-10-96, and 6-19-96. The standard treatment of Bidrin was applied twice at 0.25 LB aia. Both applications were made by ground on a band on the dates of 6-10-96 and 6-17-96. The plots were evaluated for plant bugs, % square retention, and square initiation. The data can be found in Table III.

Results

The results of these trials indicate that Provado can be used effectively for early season plant bug protection and increased square retention. In one plot Provado set squares at node 5 while the conventional treatment set at node 7. In another plot both treatments set at node 6, while in the third plot Provado set squares at node 5 and the conventional set squares at node 6. In all of the plots plant bug control with Provado was as good as or equal to that of the conventional insecticide treatments. As can be seen in each of the tables, % square set with Provado was consistently better than with the conventional treatments.

As indicated earlier, the Provado plots received a total of three sprays while the standard treatments were sprayed only twice. The Provado treatments were started at the fourth true leaf stage and the standard treatments at the early

pin head square stage. The Provado was started early to initially get benefit of the systemic activity from this product.

Discussion

Provado can be used economically early season when applied on a band. The 24 hour protection it offers is a great advantage and should be considered when choosing an early season spray. It was also observed from these plots that aphids were greatly reduced and in most cases did not have to be treated later. The fact that square retention was better in the Provado plots can best be attributed to the systemic activity of this product. Having a product that is present when the pest species is constantly moving and feeding on plant material is an added feature that should be considered when looking at the economics of this product.

Summary

The direct contact and local systemic action of Provado make it an economical and effective insecticide for early season control of plant bugs. Early square set and better fruit retention can be expected as well as suppression of early aphid populations.

Table 1. Data from 1995 trial conducted on Killebrew Farms, Tchula, MS.

Treat. Date	Eval. Date	Treatment	% plant bugs		
			pre	post	% sq. set
6-2-95	6-9-95	Provado	8	0	92
6-2-95	6-9-95	Bidrin/Methyl	6	0	82
6-10-95	6-14-95	Provado	0	0	90
6-10-95	6-14-95	Bidrin/Methyl	0	1	74
	6-19-95	Provado	0		91
	6-19-95	Bidrin/Methyl	4		84
6-20-95	6-26-95	Provado	0	0	86
no treat.	6-26-95	Bidrin/Methyl	4	0	74

*Provado set squares at fifth node while Bidrin/Methyl set at seventh.

Table 2. Data from 1996 trial conducted on Little Omega Farms, Tchula, MS.

Treat. Date	Eval. Date	Treatment	% plant bugs		
			pre	post	% sq. set
6-6-96	6-12-96	Provado	8	0	85
6-7-96	6-12-96	MP/Orthene	10	2	81
6-17-96	6-21-96	Provado	4	0	91
6-14-96	6-21-96	MP/Orthene	8	4	84

* Cotton squared at the sixth node in each plot.

**There were only 2 MP/Orthene applications made.

*** There was a total of 3 Provado applications made. The first application was made at the fourth true leaf stage on 5-27-96. Plants were not evaluated for a % square set on this date.

Table 3. Data from 1996 trial conducted on Killebrew Farms, Tchula, MS.

Treat. Date	Eval. Date	Treatment	% plant bugs		
			pre	post	% sq. set
6-10-96	6-14-96	Provado	3	0	64
6-10-96	6-14-96	Bidrin	10	2	72
6-19-96	6-21-96	Provado	6	0	82
6-17-96	6-21-96	Bidrin	10	0	75

*The cotton squared at the fifth node in the Provado plot and at the sixth node in the Bidrin Plot.

**A total of 2 Bidrin applications were made.

*** A total of 3 Provado applications were made with the first application being made at the fourth true leaf stage.