

**EFFICACY OF ROVRAL® FOR COTTON  
SEEDLING DISEASE CONTROL  
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**Abstract**

Rovral was shown to provide effective commercial control of the cotton seedling disease organism *Rhizoctonia solani* at significantly lower dosages than PCNB. Excellent control of the *Rhizoctonia* and *Pythium* seedling disease complex was also provided when Rovral was tank mixed with a *Pythium* material. Rovral provides the cotton grower with a low dose and low environmental loading alternative for seedling disease control.

**Introduction**

Seedling diseases have been identified by cotton pathologists as being one of the most important production limiting diseases associated with cotton. During the 1990's, the seedling disease complex has been ranked as either 1st or 2nd most important cotton disease by the Cotton Disease Loss Estimate Committee. "Soreshin" caused by *Rhizoctonia solani* is the most predominant seedling disease encountered beltwide by cotton growers. This research was initiated to demonstrate the effectiveness of Rovral as a low dose and environmentally friendly alternative for cotton growers to use for soreshin control.

**Results**

The data reported was generated in inoculated small plot trials conducted by University and private cooperators during 1995 and 1996. The 1995 results from two Georgia trials show that Rovral 4F used in combination with either Ridomil 2E or Terrazole 4E provided seedling disease control equal to TSX 2.5E (Table 1). The rate of Rovral used was 7.5 to 15 X less *Rhizoctonia* material than the PCNB in the TSX treatment. A 1995 Alabama study compared combinations of Ridomil 2E with Terraclor 2E or Rovral 4F for seedling disease control. The Ridomil + Rovral treatment provided the best seedling disease control (Table 2). A summary of eleven 1995 Rovral + Ridomil seedling disease control trials (Table 3) shows that these treatments were very effective in reducing cotton stand losses. The data from six locations also indicated that stands were protected and yields were enhanced by the Rovral + Ridomil in-furrow fungicide spray treatments (Table 4).

Research was continued in 1996 evaluating the Rovral WG formulation for control of *Rhizoctonia* and with a *Pythium*

material for the seedling disease complex. A summary of the results from combinations of Rovral WG with Ridomil 2E or Terrazole 4E (Tables 5 & 6) again demonstrated that these treatments were very effective in reducing stand losses from the seedling disease complex. Data from Arkansas and Tennessee confirmed the 1995 results showing that the Rovral + Ridomil combination was as effective as TSX 2.5E in preventing stand reduction and preserving yield potential (Table 7). Low doses of Rovral (5.0 to 6.5 oz/A) continued to be as efficacious as 48 fl oz of Terraclor 2E.

Data from two large scale on farm Texas trials conducted in 1995 (Table 8) showed that an application of Rovral 4F at 6.4 fl oz/A was more effective than 32 fl oz/A of Terraclor 2E in preventing stand loss. Thus, in those situations where soreshin is the only seedling disease problem, Rovral provides a low dose, low cost solution.

**Conclusions**

Data generated across the cotton belt shows that Rovral provides commercially acceptable control of soreshin at rates 7.5 to 15 X lower than PCNB. Rovral was also an excellent tank mix partner for Ridomil or Terrazole, thus, providing control of *Rhizoctonia* and *Pythium*, the two most important pathogens in the cotton seedling disease complex. Rovral provided superior *Rhizoctonia* control when compared to Terraclor in situations where *Pythium* was not a problem. Rovral is a very effective low dose, low cost, environmentally friendly alternative in-furrow fungicide for the cotton grower.

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Table 1. Efficacy of in-furrow fungicides for cotton seedling disease control from two 1995 Georgia trials.

Treatments	Rate Product / A	Stand Counts
		No. Plants / Row Foot
UTC		1.75
Rovral 4F + Ridomil 2E	6.4 + 8.0 fl oz	2.75
Rovral 4F + Ridomil 2E	3.2 + 4.0 fl oz	2.55
Rovral 4F + Terrazole 4E	6.4 + 12 fl oz	2.60
TSX 2.5E	64 fl oz	2.60

Trials conducted by Dr. R. E. Baird, U. of GA with stand counts taken 25 to 36 days after planting and rates based on a 40" row spacing.

Table 2. Results from a 1995 Alabama in-furrow fungicide cotton seedling disease trial.

Treatments	Rate Product / A	Stand Counts
		No. Plants / Row Foot
UTC		0.60
Ridomil 2E + Terraclor 2E	4.0 + 64 fl oz	1.70
Ridomil 2E + Terraclor 2E	3.0 + 48 fl oz	1.68
Ridomil 2E + Rovral 4F	8.0 + 6.4 fl oz	1.96

Trial conducted by Dr. Paul Bachman, Auburn U. with rates based on a 40" row spacing.

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Table 3. Results from 1995 beltwide cotton seedling disease in-furrow fungicide trials.

Treatments	Rate Product / A	Stand Counts
		No. Plants / Row Foot
UTC		1.20
Rovral 4F + Ridomil 2E	6.4 + 8.0 fl oz	2.15
Rovral 4F + Ridomil 2E	3.25 + 4.0 fl oz	2.17

Data from 11 University cooperator locations with stand counts taken 21 to 42 days after planting and rates based on a 40" row spacing.

Table 4. Efficacy of 1995 in-furrow fungicide treatments on cotton stands and seed cotton yields.

Treatments	Rate Product / A	Stand Counts	Yield
		No. Plants / Row Foot	LBs Seed Cotton / A
UTC		1.27	1366
Rovral 4F + Ridomil 2E	6.4 fl oz + 8.0 fl oz	2.25	2106
Rovral 4F + Ridomil 2E	3.25 fl oz + 4.0 fl oz	2.09	1866

Data from University cooperators: AR (2), GA, MO, MS and TX with stand counts taken 21 to 42 days after planting and rates based on a 40" row spacing.

Table 5. Efficacy of Rovral + Ridomil in-furrow fungicide sprays for cotton seedling disease control from 1996 trials.

Treatments	Rate Product / A	Stand Counts
		No. Plants / Row Foot
UTC		0.94
Rovral 4F + Ridomil 2E	6.4 + 8.0 fl oz	2.15
Rovral 4F + Ridomil 2E	3.25 + 4.0 fl oz	2.00

Data from nine university and private cooperator locations across the cotton belt with stand counts taken 28 to 42 days after planting and rates based on a 40" row spacing.

Table 6. Efficacy of Rovral + Terrazole in-furrow fungicide sprays for cotton seedling disease control from 1996 trials.

Treatments	Rate Product / A	Stand Counts
		No. Plants / Row Foot
UTC		1.39
Rovral 4F + Terrazole 4E	6.4 + 8.0 fl oz	2.68
Rovral 4F + Terrazole 4E	3.25 + 4.0 fl oz	2.43

Data from 10 university and private cooperator locations across the cotton belt with stand counts taken 28 to 42 days after planting and rates based on a 40" row spacing.

Table 7. Effectiveness of in-furrow fungicide sprays for seedling disease control from 1996 Arkansas and Tennessee trials.

Treatments	Rate Product / A	Stand Counts	Yield
		No. Plants / Row Foot	Lbs Seed Cotton / A
UTC		1.98	2772
Rovral WG + Ridomil 2E	6.4 oz + 8.0 fl oz	2.47	2997
Rovral WG + Ridomil 2E	5.0 oz + 6.0 fl oz	2.40	2846
Rovral WG + Ridomil 2E	5.0 oz + 4.0 fl oz	2.48	2797
Rovral WG + Ridomil 2E	3.25 oz + 4.0 fl oz	2.20	2777
TSX 2.5E	64 fl oz	2.50	2944

Data from Dr. C. Rothrock, U. of AR and Dr. M. Newman, U. of TN from inoculated small plot trials with stand counts taken 28 to 42 days after planting and rates based on 40" row spacing.

Table 8. Efficacy of in-furrow fungicide sprays for cotton seedling disease control from two 1995 grower trials.

Treatments	Rate Product / A	Stand Counts
		No. Plants / Row Foot
UTC		1.33
Terraclor 2E	48 fl oz	2.44
Rovral WG	3.25 fl oz	2.84

Data from Mr. Greg Visoski, Ft. Bend CO., TX with stand counts taken 43 days after planting and rates based on a 40" row spacing.