Effect Of *TRICHODERMA* On Cotton

Trichoderma spp. has been extensively tested as a biological disease control agent for suppressing Rhizoctonia solani, Pythium and other disease causing fungi. In addition to the biological control function, *Trichoderma spp.* was also reported to have growth stimulating effects on plant growth. The growth stimulating effects are due to the production of heat resistant growth stimulating substances by *Trichoderma spp.*. The purpose of this experiment is to investigate the effects of *Trichoderma spp.*, supplied as **PROMOT**, as a seed treatment on cotton yield.

Material and Methods

Field experiment was conducted in Kern County, California in 1991. Thirty four acre field was divided into 24 plots. Each plot was 10 rows wide and 2487 feet long. *Trichoderma spp.* was obtained from JH Biotech, Inc. as **PROMOT** which contains $5x10^8$/g of *Trichoderma spp.*. Two treatments were employed in the experiment, one was control which received no seed treatment and the other one received *Trichoderma* seed treatment. For the *Trichoderma* treatment, *Trichoderma* powder was applied to seeds at a rate of 6.7 pounds of **PROMOT** per 100 pounds of seeds before planting. The treatments were randomly assigned to the plots. Each treatment was replicated 12 times. Cotton was planted at a rate of 18 pounds of seeds per acre. Fertilization and other practices followed the normal practices of the farm where the experiment was conducted.

Seed cotton was harvested and weighed for yield. Because of the size of the plots only 6 plots were harvested from each treatment.

Results and Discussion

Yields of seed cotton and lint from each plots are shown in Tables 1 and 2, respectively. Statistical analysis on the lint yield is shown in Table 3. The results indicate that *Trichoderma* applied as seed treatment significantly increased lint yield. The average increase is 63 pounds of lint per acre. The increase in cotton lint yield may be attributed to the ability of *Trichoderma spp.* to suppress fungal disease or to produce growth stimulating substances as indicated in literature. Further studies are needed to investigate the growth promotion effects associated with *Trichoderma spp.*.

PROMOT was supplied by JH Biotech, Inc., Ventura, California.

Table 1. Effect of *Trichoderma on* Seed Cotton Yield

Treatment	Seed Cotton Yield (pound/plot*)						
	1	2	3	4	5	6	Average
TRICHODERMA	5635	6076	6357	6412	6343	6588	6235
CONTROL	5435	5759	6071	6038	6274	6131	5951

*Plot size = 1.43 acres

Table 2. Effect of *Trichoderma* on Lint Yield

Treatment	Lint Yield (pounds/acre)						
	1	2	3	4	5	6	Average
TRICHODERMA	1261	1360	1423	1435	1419	1474	1395 a
CONTROL	1216	1289	1359	1351	1404	1372	1332 b

* Means in the same column not followed by the same letter differ significantly at $P \leq 0.01$ as determined by Duncan's Multiple Range Test.

Table 3. Analysis of Variance For Lint Cotton Yield

Source	df	ss	MS	F	Prob.
Replication	5	49233.42	9846.68	21.16	0.0022
Treatment	1	12096.75	12096.75	25.99	0.0038
Error	5	2326.75	465.35		
Total	11	63656.92			

References

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