

TABLE 1. SPRING TRIAL, 1973—TREATMENTS OF ACID-DELINTED DELTA PINE 16 COTTON SEED

Fungicide	Rate (oz/100 lb seed)	Number of healthy plants, June 8*
Dexon 70% plus Demosan 65%	3 plus 10	192 a
Busan 72 60% plus Demosan 65%	3 plus 10	186 a
Captan 4F plus PCNB 75%	3 plus 12	181 a
Thiram 75% plus Vitavax F	3 plus 8	180 a
Kathon 84% plus Demosan 65%	2 plus 10	158 ab
Dexon 70% plus Vitavax F	3 plus 8	150 abc
Terra-Coat L-21 PCNB 75%	12 12	137 abc 121 abc
Dexon 70% plus Kathon 84%	3 plus 2	99 bcd
Kathon 84%	4	94 bcd
Dexon 32% plus Daconil 40%	6	89 bcd
Busan 72 60%	3	64 cd
No treatment	—	31 d

* Significant at 5 percent level. Treatments with same letter are not significantly different.

TABLE 2. SUMMER TRIAL, 1973—TREATMENTS OF ACID-DELINTED DELTA PINE 16 COTTON SEED

Fungicide	Rate (oz/100 lb seed)	Number of healthy plants, July 24*
Kathon 84% plus Demosan 65%	2 plus 10	185 a
Captan 4F plus PCNB 75%	3 plus 12	121 b
Busan 72 60% plus Vitavax F	3 plus 8	70 c
Kathon 84%	2	29 d
Captan 4F plus Kathon 84%	3 plus 2	24 d
No treatment	—	23 d

* Significant at 1 percent level. Treatments with same letter are not significantly different.

TABLE 3. SPRING TRIAL, 1974—TREATMENTS OF ACID-DELINTED DELTA PINE 61 COTTON SEED

Fungicide	Rate (oz/100 lb seed)	Number of healthy plants, May 24*
Captan 4F plus Demosan 65%	3 plus 10	201 a
Dowco 263 (M-4018)	4	194 a
Captan 4F plus Kathon 84%	3 plus 4	182 ab
UpJohn U-34,910 75%	4	156 b
Captan 4F	3	137 b
No treatment	—	67 c

* Significant at 5 percent level. Treatments with same letter are not significantly different.

Treating cotton seed cuts losses to damping-off

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Damping-off of cotton seedlings, caused by the fungus *Rhizoctonia solani*, can be a serious seedling disease in the interior valleys of southern California. *Pythium* spp. may cause some seed rot and seedling decline. Trials in previous years indicated combination treatments of two fungicides were superior to single fungicides for control. Trials were initiated in 1973 to compare new fungicide materials and combinations of older materials.

Treatments were applied as a spray to acid-delinted Delta Pine 16 variety cotton seeds as they were rotated in a small cement mixer. All treatments were infested with *Rhizoctonia* by metering infected oat seed through a Noble granular applicator into the planting furrow as the soil covered the seed. This placed seed and inoculum in close proximity, resulting in uniform *Rhizoctonia* infection of cotton seedlings.

Three hundred cotton seeds were planted per plot on May 10, and each plot was replicated five times. Healthy-appearing plants were counted on June 8.

Dexon, Busan, or Kathon plus Demosan; captan-PCNB; thiram or Dexon plus Vitavax; Terra-Coat L-21; and PCNB effectively controlled *Rhizoctonia* seedling disease of cotton. Except for PCNB, single seed treatments were not significantly different from no treatment.

Various fungicide treatments were compared in a summer trial, when higher soil temperatures would result in faster germination and emergence. Procedures were the same as in the spring trial. Acid-delinted Delta Pine 16 cotton seeds, at 300 seeds per plot, were planted on June 27; healthy-appearing plants were counted on July 24, 1973.

Kathon-Demosan was significantly better than all other materials tested for the control of *Rhizoctonia* seedling disease. Captan-PCNB effectively controlled *Rhizoctonia* but at a level lower than Kathon-Demosan. Kathon-captan, or Kathon alone was not significantly different from no treatment.

Procedures were the same as in the previous experiments. Three hundred acid-delinted Delta Pine 61 cotton seeds were planted on April 30; healthy-appearing plants were counted on

May 24.

Captan plus Demosan or Kathon, and Dowco 263 alone, effectively controlled *Rhizoctonia* seedling disease.

During the 1974 season, we compared commercial seed treatments with the same seed treatment applied at University of California, Riverside.

Nine seed lots were obtained from commercial cotton seed treatment applicators in the San Joaquin and Imperial valleys. The applicator had treated one-third of each lot with the commercial fungicide treatment being applied at that time; two-thirds of each lot was left untreated. All seed was shipped to U.C., Riverside. One-half of the untreated portion was then treated at Riverside with exactly the same treatment as had been applied by the commercial applicator. The other half untreated portion was used as the check. Planting procedures and *Rhizoctonia* incorporation were the same as in previous experiments. Three hundred cotton seeds of the various treatments and cotton varieties from each applicator were planted on April 30; healthy-appearing plants were counted on May 31.

All treatments were significantly better than no treatment. No significant difference was found in eight out of nine seed lots when commercial and U.C. treatments were compared. One seed lot gave significantly less control than the U.C.-treated lot but was significantly better than the check treatment.

Typical results were: commercial treatment (Dexon-Demosan), 77 percent healthy plants; U.C. (same treatment), 74 percent; and no treatment, 12.2 percent. Another plot, commercially treated with Terra-Coat L-21, had 53 percent healthy-appearing plants; U.C. (same treatment), 55 percent; and no treatment, 31 percent. These results indicate commercial seed treatment plants are providing excellent seed treatment applications for the California cotton farmer.

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