NATIONAL COTTON SEED TREATMENT and COMPANY ENTRY COTTON SEED TREATMENT TRIALS

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Project Summaries. Seed treatment evaluations were done in 2004 at Shafter and West Side REC test locations for several reasons:

(1) to have a California location to participate in tests done at a national level for new and continuing seed treatments for cotton as part of the National Standards Seed Trt Test; and
(2) for University of California trials on select treatments likely to be widely available, or under consideration for future use under CA cotton production conditions by several large seed treatment companies

Prior to 2001, these trials were done in conjunction with CA Cotton Planting Seed Distributors and consulting Plant Pathologist Dr. Dick Garber of Shafter, and trial locations have been on the CPCSD farm facility or on farmer fields. Beginning in 2001 and continuing through 2004, these trials were moved to field locations at both the Shafter and West Side REC test locations. The national standards trial was conducted only at the Shafter REC facility, while the company-entry evaluations were repeated at both Shafter and West Side Research and Extension Center sites in 2004. Starting this year (2004) , we also started including a company-entry Pima cotton seed treatment trial at Shafter and West Side REC in addition to the Upland tests. Only the Shafter REC data will be summarized for this report, although the West Side REC data can be made available upon request to Bob Hutmacher.

Company Entry Seed Treatment Trial. Trials were conducted using the variety CPCSD "Maxxa" The 2004 planting season was characterized by good planting conditions during much of the March and April primary planting periods. No really cold weather conditions prevailed during planting or weeks after planting, but there were some brief periods of cool and in some locations wet conditions. On the planting dates used at Shafter and West Side REC sites, the first plantings of the trials in March were abandoned and had to be replanted due to untimely rains which produced severe soil crusting between planting and emergence. A second, later planting in April was the one reported on for the trials this year. Despite what was generally fairly warm and good conditions during and after the second plantings, it can be seen in the Tables that follow (Company Entry and National Stds trials - 2004) that percentage seedling emergence and survival were significantly reduced in the untreated controls when compared with the seed treatments. In general, the greatest effect was on poor initial germination and emergence in the untreated control, with relatively poor additional emergence occurring with later counts. Statistical presentation of the data is available upon request from the authors.

National Standards Cotton Seed Treatment Trial. The National Standards trial in CA matches that done in all other U.S. cotton producing states, and will be summarized nationally in cooperation with Dr. Craig Rothrock, a Plant Pathologist with the University of Arkansas. As in the Company entry trials, untreated controls showed significantly lower emergence and survival than chemical treatments, but unlike the Company Entry trials, there was a much lower range of average emergence noted in this trial. Plans are to continue with similar trials at the Shafter and West Side locations in 2005 if resources allow, incorporating any new treatments developed and ready for testing.

Table 1. Company Entry Cotton Seed Treatment Trial data from ACALA and PIMA tests at Shafter REC, 2004. The varieties grown in the study were CPCSD "Maxxa" in the Acala trial, and Phytogen "Phy-76" in the Pima trial. The planting date was April 9, 2004 and the data averages shown below are for stand counts done on May 10. A similar trial was conducted at the West Side Research and Extension Center near Five Points, CA in Fresno County (data not shown here).

Treatment Number	Treatment Description (rates shown in parentheses)	ACALA TRIAL Average surviving seedlings for treatment (as a percent of the number planted)	Standard Deviation	PIMA TRIAL Average surviving Seedlings for treatment (as a percent of the number planted)	Standard Deviation
1	Nontreated (untreated control)	63.5	2.0	65.1	1.9
2	NuFlow-ND (14.5oz/cwt) + NuFlow-M (1.75oz/cwt)+ WECO 0257 (0.65 oz/cwt) + Apron XL-TL (1.0 oz/cwt)	73.8	1.2	75.1	1.5
3	NuFlow-ND (14.5oz/cwt) + NuFlow-M (1.75oz/cwt)+ WECO 0257 (0.65 oz/cwt) + Apron XL-TL (1.0 oz/cwt) + BioStim C (0.25 oz/cwt)	74.0	1.4	74.0	3.0
4	NuFlow-ND (14.5oz/cwt) + NuFlow-M (1.75oz/cwt)+ WECO 0257 (0.65 oz/cwt) + WECO 4004 (0.60 oz/cwt)	76.7	2.0	76.6	2.7
5	RTU Baytan-Thiram 1.76FL (195.5 ml/100kg) + Allegiance 2.65 FL (48.9 ml/100kg)	69.9	3.9	70.1	2.9
6	Baytan 30 2.65 FL (32.6 ml/100kg) + Argent (97.79 ml/100 kg) + Allegiance LS (78.24 ml/100 kg)	74.3	1.8	75.4	2.7
7	L1226 (41.73 ml/100kg) + L0030 (97.7 ml/100 kg) + L1008 (78.24 ml/100 kg)	75.2	0.6	74.2	2.9
8	L1028 (2.5 g AI/100 kg) + L1226 (41.73 ml/100 kg) + L0020 (65.2 ml/100 kg) + L0037 (20.86 ml/100kg)	73.7	2.0	76.3	2.5
9	L0037-A1 (32.6 ml/100kg) + L0020-A1 (65.2 ml/100 kg) + L1226 (41.73 ml/100kg) + L0030 (65.2 ml/100kg) + L1080 (32.6 ml/100kg)	73.0	2.0	74.1	2.2
10	Vitavax 34 3.34 FL (195.5 ml/100kg) + L1226 2.65 FL (41.73 ml/100kg) + L0030 (65.2 ml/100kg) + L0020 (65.2 ml/100kg) + L1080 (32.6 ml/100kg)	76.8	2.8	75.0	2.9

Table 2. National Standard Cotton Seed Treatment Trial data from test at Shafter REC, 2004. Variety grown in the study was a Delta Pine Upland variety used at all locations across the western U.S. (DP 451 B/RR) The planting date was April 9, 2004 and the data averages shown below are for stand counts done on May 10-13.

Seed Treatment Materials	Treatment rates (corresponds to the order of materials shown in left column) – in oz	Average surviving Seedlings for treatment - on May 10-13 (as a percent of the number planted)	Standard Deviation
Baytan 30 + Argent 30 + Allegiance LS	0.5 + 1.5 + 1.2	81.0	1.2
L1226 + L0030 + Allegiance LS	0.64 + 1.5 + 1.2	81.8	2.9
RTU Baytan Thiram + Allegiance FL	3.0 + 0.75	82.9	1.6
L1226 + L0020 + L0037	0.64 + 1.0 + 0.32	81.7	1.9
L0020 + L0288 + L0189	0.75 + 0.2 + 3.0	84.0	2.3
Apron XL-TL + WECO 0257	1.0 + 0.65	82.1	1.7
Apron XL-TL + WECO 0257 + NuCoat	1.0 + 0.65 + 7.5	81.3	2.1
Apron XL-TL + WECO 0257 + Nu-Flow M	1.0 + 0.65 + 2.5	83.9	2.6
Apron XL-TL + WECO 0257 + Nu-Flow M + NuCoat	1.0 + 0.65 + 2.5 + 7.5	81.1	2.2
Dynasty	3.1	79.7	2.6
Dynasty	3.9	83.0	1.8
Dynasty + Systhane 40 WP	3.1 + 0.84	82.5	2.2
HM 0403 + Apron XL-TL	0.142 + 1.0	78.5	2.6
HM 0403 + HM 0404 + Apron XL-TL	0.142 + 4.0 + 1.0	80.1	3.4
Vitavax-PCNB + Allegiance	6.0 + 0.75	75.9	2.1
RTU-PCNB	14.5	74.1	2.9
Allegiance	1.5	75.4	2.2
Nontreated – untreated control	---	69.2	2.3