

THE EFFECT OF DATE OF FINAL IRRIGATION
ON UPLAND COTTON YIELD, QUALITY, AND INSECTICIDE APPLICATIONS

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The difficulty and expense of tobacco budworm control has created new grower interest in earlier cotton termination. Mid-August final irrigation has been proposed as a means to easier and earlier defoliation to reduce September insect populations as well as various growing expenses. Numerous trials in the past 13 years have averaged less than 80 pounds loss of lint per acre from mid-August final irrigation. However, grower interest has prompted several trials with different planting dates in 1978 since average planting dates in the Phoenix area were delayed approximately three weeks.

IRRIGATION TERMINATION TRIALS

Irrigation trial	Planting date	Insect. applic.	No. of irrigations	Irrig. term.	First harvest	Lbs. Lint per acre	Yield difference
Woolf DPL55 Normal	3-24	13	15	9-14	10-16	1268	-9
DPL55 Early	3-24	7	11	8-7	10-16	1277	
DPL703 Normal	3-24	13	15	9-14	10-16	1236	+35
DPL703 Early	3-24	7	11	8-7		1201	
Weiler DPL61 Normal	4-1	9	9	9-4	12-14	1105	+12
DPL61 Early	4-1	7	8	8-19	12-14	1093	
Moore DPL61 Normal	4-23	10	8	9-2	11-3	1117	+56
DPL61 Early	4-23	10	7	8-17	11-3	1061	
JT Ranch DPL 61 Normal	4-30	9	10	9-2	11-6	1242	+216
DPL 61 Early	4-30	9	9	8-17	11-6	1026	
White Fence DPL61 Normal	5-3	9	7	9-4	10-18	977	+19
DPL61 Early	5-3	9	6	8-19	10-18	958	
ST825 Normal	5-3	9	7	9-4	10-18	963	+15
ST825 Early	5-3	9	6	8-19	10-18	948	
DPL703 Normal		9	7	9-4	10-18	963	+18
DPL703 Early		9	6	8-19	10-18	945	

SUMMARY OF TRIAL GRADE CARDS

	Grades							Staple			Micronaire		
	' 31	' 32	' 40	' 41	' 42	' 50	' 51	' 34	' 35	' 36	' 4	' 5	' 6
Woolf DPL55 Normal		100.0						100.0				100.0	
55 Early	100.0							100.0				86.0	14.0
703 Normal								100.0				100.0	
703 Early	100.0							83.3	16.7			100.0	
Weiler DPL61 Normal				70.0			30.0	90.0	10.0			60.0	40.0
Early				80.0			20.0	100.0					
White DPL61 Normal	66.7		33.3						33.3	66.7		100.0	
Fence DPL61 Early	66.7		33.3						66.7	33.3		100.0	
ST825 Normal	100.0								100.0			100.0	
ST825 Early	33.3		66.7						100.0			100.0	
DPL 703 Normal			100.0						100.0			100.0	
DPL 703 Early						100.0			100.0			100.0	

SUMMARY

- Four additional irrigations of Woolf's March plantings increased yield an average of 13 pounds of lint per acre but required six fewer insecticide applications. September 2 irrigation of J T Ranch cotton planted April 30 with more than 50% of bolls set after August 1 increased yield 216 lbs. per acre.
- September irrigation increased yield an average of 45 lbs. of lint per acre for all trials.
- Early termination grades were better in the Woolf trial and lower for ST 825 and DPL 703 in the White Fence Farms trial.
- September irrigation developed longer fiber in DPL 61 in the White Fence Farm trial but had very little effect on micronaire in the trials.
- Trial results suggest September irrigation may often fail to pay for late growing expenses.