

Pima S-5 Nitrogen Fertility

Avg. number of flowers per plot that bloomed each week during the growing season

Nitrogen lb/A	July 14-20	July 21-27	July 28 - Aug. 3	Aug. 4-10	Aug. 11-17	Aug. 18-24	Aug. 25-31	Sept. 1-7	Sept. 8-14	Sept. 15-21	Total
0	8	11	11	18	34	41	61	46	20	4	254
40	11	7	10	18	21	30	62	48	28	10	245
80	10	10	8	19	20	37	57	63	46	25	295
120	16	14	12	19	32	43	56	53	41	23	309

Percent blooms per plot that developed into bolls

0	94	55	82	69	81	71	31	24	36	6
40	68	61	78	75	71	46	43	32	16	3
80	78	58	59	72	65	38	36	29	13	0
120	31	41	67	71	62	37	27	30	16	0

IRRIGATION TERMINATION FOR HARVEST MANAGEMENT

C.R. Farr

Seasonal variations and long-season fruiting characteristics of cotton lead some growers to believe that late September or early October irrigation is justified in some years. The 1975 crop season provided a strong contrast with the 1974 season. The 1974 season produced an early set with a record crop of 1348 lbs. of lint per acre for the area, whereas the spring of 1975 was the least favorable on record with much more late cotton being set than usual.

In 1975 first flowering was delayed 10-14 days in many fields and few bolls were set below the 10th or 11th laterals. Consequently, a higher proportion of cotton was set in August and September than in 1974 and less than 25% of the crop was open on October 1 in the Carl Weiler trial. In this trial flowering continued into October with date tags showing the last mature bolls were set between September 20 and 25.

In 1975 single harvesting of the late crop in the Weiler trial was completed December 6 (Table 1). This was on sandy loam soil and October 1 final irrigation failed to increase yield over the yield of September 6 final irrigation.

In 1974 a September 8 final irrigation produced maximum yield on sandy loam soil compared with the September 23 irrigation (Table 2). Late harvest (Nov. - Dec.) of the August 23 irrigation treatment retrieved as much spindle-picked cotton as early harvest (Oct. - Nov.). However, late harvest (Dec. - Jan.) of the September 8 and 23 irrigation treatments reduced the yield of the machine-picked cotton when compared earlier harvest in November and December. These results and those of 1975 reinforce final irrigation trial data from earlier years which indicate that irrigation after mid-September does not increase yield and may reduce yield on heavier soil types. Late irrigation makes defoliation more difficult, may delay maturity of the cotton, and frequently delays the time of harvest.

Table 1. Irrigation Termination with a Delayed Cotton Set. Carl Weiler, Laveen, 1975

Final Irrigation Set	Replication Weights					Ave.	Seed Cotton /Acre	Lint/Acre*
	1	2	3	4	5			
Normal Sept. 6	1265	1331	1265	1290	1274	1285	3452	1107
Late Oct. 1	1268	1263	1200	1267	1291	1258	3380	1112

* Percent turnout Normal 32.09% Late 32.89%

Grades

	<u>Late</u>	<u>Normal</u>
	3 - 32 - 35 - mike 5 (60%)	32 - 35 - 5 (72%)
	1 - 41 - 35 - mike 5 (20%)	41 - 35 - 5 (18%)
	1 - 32 - 34 - mike 5 (20%)	31 - 35 - 5 (8%)

Table 2. Irrigation Termination and Harvest Timing. Robert Moore, Waddell, 1974. C.R. Farr.

Harvest Timing	1st or 2nd Pick	Plot Weights					Seed Cotton/Plot	Seed Cotton Lbs./Acre
		1	2	3	4	5		
<u>August 10 - Irrigation Termination</u>								
Early - 10/7	1st	575	650	635	615	618	618	3321
	11/11 2nd	<u>100</u>	<u>100</u>	<u>130</u>	<u>130</u>	<u>125</u>	<u>124</u>	<u>666</u>
	Total						<u>742</u>	<u>3987</u>
<u>August 23 - Irrigation Termination</u>								
Early - 10/7	1st	525	625	645	620	640	611	3283
	11/13 2nd	<u>175</u>	<u>185</u>	<u>180</u>	<u>190</u>	<u>190</u>	<u>184</u>	<u>989</u>
	Total						<u>795</u>	<u>4272</u>
Late - 11/11	1st	605	700	715	740	710	710	3815
	12/14 2nd	<u>80</u>	<u>90</u>	<u>90</u>	<u>100</u>	<u>90</u>	<u>90</u>	<u>484</u>
	Total						<u>800</u>	<u>4299</u>
<u>September 8 - Irrigation Termination</u>								
Early - 11/12	1st	810	825	795	785	825	808	4341
	12/15 2nd	<u>95</u>	<u>105</u>	<u>105</u>	<u>100</u>	<u>105</u>	<u>102</u>	<u>548</u>
	Total						<u>910</u>	<u>4889</u>
Late - 12/13	1st	830	900	825	835	850	848	4554
	1/14 2nd	<u>30</u>	<u>25</u>	<u>25</u>	<u>30</u>	<u>20</u>	<u>26</u>	<u>139</u>
	Total						<u>874</u>	<u>4693</u>
<u>September 23 - Irrigation Termination</u>								
Early - 11/12	1st	770	820	775	865	805	807	4336
	12/14 2nd	<u>60</u>	<u>110</u>	<u>110</u>	<u>65</u>	<u>90</u>	<u>87</u>	<u>467</u>
	Total						<u>894</u>	<u>4803</u>
Late - 12/13	1st	850	800	860	805	775	809	4347
	1/14 2nd	<u>35</u>	<u>35</u>	<u>25</u>	<u>30</u>	<u>30</u>	<u>31</u>	<u>166</u>
	Total						<u>840</u>	<u>4513</u>