

ULTRA-EARLY PLANTING: MULTIYEAR RESULTS

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Abstract

Cold-tolerant varieties suitable for ultra-early planting were field-tested first in 2000. Experience with such varieties through 2004 is summarized herein.

Introduction

In the mid-90's screening for cold tolerance led to the identification of several sources in modern *Gossypium hirsutum* L. Relating lab temperatures to long term weather records led to the conclusion that the cold tolerant lines would survive mid-march planting at Stoneville. March rainfall has prevented such early plantings in fully tilled systems, where Seed Source research has been located. Fortunately in 3 of the past 4 years in early April plantings non-cold tolerant varieties have suffered stand loss providing a contrast.

Cold tolerant varieties were released in the U.S. in 2002. They are currently being sold or are in registration in cotton producing countries around the world. Seed Source ended research and production programs at the end of 2003. In this presentation we hope to summarize in-house research results and to cite results in others' research plots and in farmers' fields.

Results and Discussion**In-house data**

For 3 years early April planting of test plots was possible. Fortunately post-planting weather was severe enough to distinguish cold-tolerant and non-tolerant varieties. In 2000 the April 1 planting of 14 cold tolerant lines consisted of 2-row plots across the field, in which 3 replicates of 50 foot long plots were harvested. The April 29 planting was a 4x4 triple lattice in 2001 and 2002 both the April and May plantings were 4x4 triple lattices with identical entries in both dates of each test each year. Yields reported in each case were the average of the entire test. Yield response is shown in Table 1.

TABLE 1. YIELD RESPONSE TO PLANTING DATES.

YEAR	PLANTED	PICKED	LINT/ACRE	LBS. GAIN
2000	4/01	8/30	1203	102
	4/29	9/13	1101	
2001	4/06	9/17	1083	193
	5/04	10/3	890	
2002	4/05	9/17	1223	69
	5/08	10/02	1154	

Yield response to ultra-early planting was positive each year-the extent was variable. Response of lint properties was mixed, per table 2.

TABLE 2. LINT RESPONSE TO PLANTING DATES.

YEAR	PLANTED	MIC	LENGTH	STRENGTH (YARN)
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2005 Beltwide Cotton Conferences, New Orleans, Louisiana - January 4 - 7, 2005

2000	4/01	3.6	1.17	132
	4/29	4.6	1.12	116
				(LINT)
2001	4/06	4.8	1.13	29.9
	5.04	4.9	1.08	27.6
2002	4/05	5.2	1.13	30.7
	5/08	5.1	1.13	30.8

Uvalde County Yield Tests

The 2001 test consisted of 14 acres of CT210HQ planted February 28, and 5 acres each of the other varieties in an Extension Service test planted March 26. The 2003 test consisted of fractional acre plots of cold tolerant varieties and 6 new lines. This test was planted on a conventional date the 2001 test shows the benefit of the ultra-early planting, with HQ210CT superior in yield and quality to all other varieties tested.

In the 2003 test HQ210CT is again the highest yielder, superior to all three FiberMax varieties used as checks. In this test HQ212 was entered 3 times and X-5 was entered twice. The close agreement of these repeated entries should indicate a satisfactory level of precision.

On-Farm Tests in Texas**2001 TEST UVALDE COUNTY, TX**

PLANTED 2/28/01 HARVESTED 8/30/01			
	LINT/ACRE	PRICE	\$ PER ACRE
HQ210CT	1785	0.5488	979.6
PLANTED 3/26/01 HARVESTED 9/26/01			
FM 966	1695	0.5298	898.01
SG 501 BR	1732	0.5031	871.37
SG 821	1621	0.5319	862.21
DP PEARL	1610	0.5299	853.14
FM 958	1602	0.532	862.26
PM1218	1588	0.5238	844.82
FM 832	1540	0.5323	819.74

2003 UVALDE COUNTY TEST

CT VARIETIES AND NEW LINES		
Variety		Seed cotton/acre
HQ210CT		2970
HQ211CT		2940
X-5	CT13	2822
X-5	CT13	2808
X-1	SS 0001	2803
X-2	SS9907	2799
HQ212CT		2791
HQ212CT		2743
HQ212CT		2721
FM832		2716
CT310HQ		2672
X-6	1SM429	2660
FM989		2615
HQ110CT		2582
X-4	1SM450	2507
X-3	1SM439	2500
FM958		2284

2001 Ultra-Narrow-Row Test



because of problems with a brand new stripper.
In subsequent years this experiment has not been repeated.

Recent developments in herbicides appear to have considerable promise for weed control in non-RR cotton. Some of the cleanest fields observed in 2004 were dependent on alternative chemicals.

Release of Cold-Tolerant Varieties

Five varieties were released for planting in 2002 through Douglass King Company of San Antonio, TX. Some of the growers planted ultra early, and some on the normal date. Typically testimonials were favorable.

Testimonials 2002

BISHOP, TX. EDWARD JUNGSMANN "I PLANTED CT 310 ON Feb. 15. Dry northerners and low humidity dried out part of the seed. Two freezes of 25 degrees took out 10 percent of the stand. Harvested August 3, and made 39 bales off 18 acres 2.17 b/ac) with a 35.7 gin turnout.

"I planted CT210 on February 15, it survived 3 freezing nights as it was trying to come up. Lost about 10-15 % of the stand that was up. Harvested Aug. 2, and made 79 bales off 38 acres (2.08 b/A) with a gin turnout of 35-40%."

BANQUETE, TX. TOBIN SCARBOROUGH "CT211 planted early, yielded 992 lbs./ac., and out-yielded FiberMax 832 on the same comparable ground. It graded slightly less than the 832, but the 211 brought back more money per acre."

CONCORDIA, TX. MORRIS MICHALK "CT210 was the best cotton that I had 2002. I planted it normal planting time. Good gin turnout, 34-35% averaging 2.3 bales per acre with only 1 ½ inches of late season rain. Will plant more in 2003."

UVALDE, TX. JIM PARKER "Made me the most money per acre on my farm this year. "

WESLACO, TX. Tim McDaniel "My Douglass King CT211 was the highest yielder on the farm this year, making a little over three bales per acre."

First Bale Ginned in USA in 2004

GROWER: TRACY VAN DER POOLE. GINNER: JEFF TURNER @ WILLACY COOP GIN. VARIETY: DOUGLASS KING HQ211CT. GINNING DATE 6/14/04. YIELD 1 BALE PER ACRE. (BEST IN 10 YEARS) (Planted earliest-maturing CT variety on normal date)

Summary and Conclusions

Consistent results indicate ultra-early planting will result in higher yields with reduced inputs. The northern portion of the cotton belt most needs the earlier harvest resulting from ultra-early planting, but experience in the southern-most part has been favorable to ultra-early planting. The authors strongly recommend date of planting studies by public agencies throughout the cotton area to definitively assess the value of ultra-early planting. If the potential value is only half of what it appears to be, wide-scale adoption would significantly increase US cotton production.

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