

EFFECT OF SEEDING RATE AND PENTIA ON PH 475 WRF

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Introduction

New varieties and technologies are becoming available to cotton producers across the U.S. Widestrike, a two-gene Bt cotton technology, was commercialized in 2005, and combinations of Widestrike with Roundup Ready technology are expected in 2006. A study was conducted to examine the influence of two plant populations and various plant growth regulator application regimes on a new variety, PH 475 WRF.

Materials and Methods

'PH 475 WRF' Cotton was planted on May 12, 2005, at a rate of approximately 3.5 seed/ft at the Sun Belt Ag Expo, Moultrie, Georgia. Row spacing was 36 inches. Plot size was 4 rows by 40 feet and there were 4 replications. Seedbed preparation included conventional tillage, in-row subsoiling and bedding. Pest management was appropriate for WRF technology. Selected plots were hand thinned on May 18 and 28 to achieve final populations of about 1.5 and 3.0 plants/ft. A two by four factorial study was implemented, two seeding rates by four Pentia treatment regimes. Pentia treatments were initiated when cotton reached node 7 to 8 (see Table 1). Application dates were June 16 (node 7-8), July 5 (node 13-14), and July 18 (2 weeks later). One row from each plot was machine harvested on October 12. A composite sample was taken to determine lint turnout.

Results and Discussion

The desired populations (1.5 and 3.0 seed/ft) were effectively achieved (data not shown). In mid-June, excessive rainfall resulted in wet conditions and considerable fruit shed. Even through late June, square retention was very erratic. Probable causes include saturated soils and plant bugs. Counts on field borders on June 22 measured whole plant fruit retention at only 54 percent. Later in the season nodes above white flower and nodes above cracked boll were also extremely variable. Cotton height data reflect the effects of only the initial Pentia application.

Yield data are in Table 1. Lint turnout was 47.6 percent, which is unusually high even for a table top gin. There were no significant differences in lint yield among treatments. The main effects of seeding rate on yield averaged 1979 vs 1879 lb/A for 3.0 and 1.5 plants/ft, respectively.

Table 1. Effect of Seed Rate and Pentia on PH 475 WRF, Sun Belt Ag Expo, 2005.

Treatment		Plant height, inches (July 5)	Lint yield, lb/A
Seeding rate, No./ft	Pentia		
1. 3.0	Untreated	27.6	1922.3
2. 3.0	4 oz, node 7-8	24.8	2008.7
	16 oz, node 13-14		
3. 3.0	16 oz, node 13-4	28.8	1911.5
4. 3.0	8 oz, node 7-8	24.6	2073.5
	8 oz, node 13-14		
	8 oz, 2 weeks later		
5. 1.5	Untreated	26.7	1967.6
6. 1.5	4 oz, node 7-8	23.1	1749.5
	16 oz, node 13-14		
7. 1.5	16 oz, node 13-4	26.8	1818.6
8. 1.5	8 oz, node 7-8	22.1	1983.0
	8 oz, node 13-14		
	8 oz, 2 weeks later		
	LSD (0.10)	1.8	263.1
	CV	5.7	11.2