DOUBLE-CROPPED COTTON FOLLOWING CANOLA AND WHEAT IN SOUTH CAROLINA

W. M. Hair and D. M. Robinson
Edisto Research and Education Center,
Clemson University
Blackville, SC

Abstract

Double-cropping cotton following canola will offer producers an alternative option to double-cropping cotton after wheat. Despite weather risk, double-cropped cotton lint yields were similar in both years following either winter crop. The cotton planting systems (disk, subsoil and plant; or disk, subsoil, bed and plant; or strip-till) utilized did not affect cotton lint yields.

Introduction

In South Carolina, canola and wheat are planted as fall-seeded winter crops, with average grain yields of 44 and 62 bu/acre, respectively. Currently, most double-cropping systems with wheat utilize soybeans. In an effort to maximize profits, producers have double-cropped cotton following wheat. Since wheat is the major winter crop produced in SC, production problems have increased due to increases in pest types and populations. Double-cropping cotton following canola would provide producers with an alternative crop for wheat.

Discussion

Double-cropping cotton after wheat in the Coastal Plains of SC does involve weather risks that may produce crop failures (Hunt et. Al. 1997). In 2 yr of a 7 yr study, cotton crop failure occurred due to early freezes and in 1 yr cotton was not planted due to drought conditions in June. However, the early maturing cotton cultivar averaged 1283 lb/acre seed cotton yields in the remaining 4 yr and cotton yield was higher for conservation tillage versus conventional tillage. In southern Georgia, Baker (1987) found mixed results between cotton yields for conservation tillage versus conventional tillage at two locations.

Methods

Canola and wheat blocks were harvested on 6/12/98 and 5/31/99 at the Edisto Research and Education Center, Blackville, SC. Cotton plots (25.3 ft x 75 ft in 1998 and 25.3 ft x 100 ft in 1999) of Paymaster 1215 BG (1998) and Paymaster 1215 BG/RR (1999) were planted on 6/18/98 and 6/21/99 with 6 replications. Three cotton planting systems (disk, subsoil and plant; or disk, subsoil, bed and plant; or strip-till) were evaluated in a canola block; two (disk, subsoil and plant or strip-till) in side by side canola and wheat blocks; and the strip-till system in side by side canola, wheat and fallow blocks.

Cotton stand counts were taken at 2 and 4 weeks after cotton planting. Cotton plots were harvested on 11/30/98 and 11/19/99 with seed cotton weights being recorded. Cotton lint yields were estimated at a 40% gin turn out of the seed cotton weights.

Summary

Cotton lint yields were similar for cotton double-cropped following canola and wheat in South Carolina in 1998 and 1999 (Table 1). Yields averaged 548 and 364 lbs/acre for cotton following canola and 662 and 369 lbs/acre for cotton following wheat in 1998 and 1999, respectively. In 1999, cotton lint yields for canola, wheat and fallow plots were 360, 315 and 326 lbs/acre, respectively (Table 3). In addition, the cotton planting system utilized did not affect the cotton lint yields for cotton following either canola or wheat (Table 1 and 2).

References

Baker, S.H. 1987. Effects of tillage practices on cotton double cropped with wheat. Agron. J. 79:513-516.

Hunt, P.G., P.J. Bauer, and T.A. Matheny. 1997. Crop production in a wheat-cotton doublecrop rotation with conservation tillage. J. Prod. Agric., 10:462-465.

Table 1. Cotton stand counts and lint yields of the cotton planting systems following canola and wheat – 1998 and 1999.

Winter Crop	Planting System*	Stand Counts		Cotton Lint Yields**	
		7/15/98	7/21/99	1998	1999
		(plant/3 ft)		(lbs/A)	
Canola	ST	3.66	6.42	541	373
Canola	DP	3.52	7.33	555	355
Wheat	ST	4.16	7.92	652	381
Wheat	DP	3.84	7.42	672	356
LSD		2.29	1.49	142	42

* ST = Strip-till (subsoil) planting; DP = Disk, subsoil and plant

** Cotton lint yields were estimated at a 40% gin turn out of the seed cotton weights.

Reprinted from the *Proceedings of the Beltwide Cotton Conference*
Volume 1:675-676 (2000)
National Cotton Council, Memphis TN

Table 2. Cotton stand counts and lint yields of the cotton planting systems following canola – 1998 and 1999.

Winter Crop	Planting System*	Stand Counts		Cotton Lint Yields**	
		7/15/98	7/21/99	1998	1999
		(plant/3 ft)		(lbs/A)	
Canola	ST	5.29	6.67	689	435
Canola	DP	4.27	6.46	768	404
Canola	DBP	2.36	5.71	578	393
LSD		1.49	1.31	229	49

* ST = Strip-till (subsoil) planting; DP = Disk, subsoil and plant; DBP = Disk, subsoil, bed and plant

** Cotton lint yields were estimated at a 40% gin turn out of the seed cotton weights.

Table 3. Cotton stand counts and lint yield for strip-till (subsoil) planted cotton following canola, wheat or fallow – 1999.

Winter Crop	Stand Counts		Cotton Lint Yield*
	7/6/99	7/21/99	1999
	(plants/3 ft)		(lbs/A)
Canola	5.33	4.83	360
Wheat	7.42	6.92	315
Fallow	6.92	6.17	326
LSD	1.86	1.75	74

* Cotton lint yields were estimated at a 40% gin turn out of the seed cotton weights.