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# *Stardel*

**A New Cotton Variety**

By F. W. SELF



*Field of Stardel in Caddo Parish, 1955*

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Agricultural Experiment Station  
J. N. Efferson, Director

Louisiana State University  
and  
Agricultural and Mechanical College



# **Stardel: A New Cotton Variety**

BY FERD W. SELF<sup>1</sup>

## **Basis for Release of the Stardel Variety**

The annual gross value of cotton and cotton seed normally exceeds 100 million dollars in Louisiana. The estimated value of lint in 1955 was approximately 95 million dollars. According to best available estimates, the 1954 Louisiana cotton acreage was planted proportionately to the following varieties: 94 per cent to Deltapine 15, 2 per cent to Fox, 2 per cent to Delfos 9169, 2 per cent to all other varieties. A moderate increase of 7 per cent in the production of lint per acre for the state of Louisiana would mean a considerable boost in the income of cotton producers.

The new variety Stardel has yielded 7 per cent more lint per acre than the most extensively grown variety. Stardel not only produces more lint per acre, but it combines high fiber strength with high yield, thereby affording growers an opportunity to grow better quality and more cotton.

## **History and Pedigree**

In 1948, at the Louisiana Agricultural Experiment Station at Baton Rouge, Louisiana, a cross was made between Stoneville 2B-462, a strain with high fiber strength, and Deltapine 14. Stoneville cotton originated from a selection out of Lone Star in 1916. Deltapine 14 is a high producing strain with high lint percentage, medium boll, and average staple length. Progenies of this cross were selfed and superior plants in F<sub>2</sub> and later generations were selected and propagated by plant-to-the-row selections. In 1953, 3 strains out of 14 from this cross were selected for rapid multiplication and testing. One strain, Louisiana DS 524-9, demonstrated from the beginning of the tests that it possessed the desired characteristics of high production, high lint percentage, high fiber strength, average boll size, medium staple length, and good picking qualities. The Louisiana DS 524-9 was tested on six Louisiana Agricultural Experimental Farms for the three-year period 1953-55.

## **Description**

Stardel may be described as follows: The plants are medium in height, vigorous, spreading in growth habit and medium in their earliness. The picking qualities are good as the bolls open well and are fluffy. It has good storm proofness. The lint per cent ranges from 37 to 40, which is high. The lint length ranges from 33/32 to 35/32 inches,

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with an over-all average of 34.3/32 inches. The foliage is medium to light, a good characteristic in areas of moderate to high rainfall. The boll size ranges from 75 to 90 per pound. The fiber is very strong, ranging from 92,000 to 97,000 pounds per square inch, with an average of about 95,000. Fiber strength is an important factor in yarn strength of the medium staple length classes of cotton. The fiber fineness is of average micronaire units (4.5 to 4.8). Stardel fibers are about 10 per cent stronger than those of any of the other commercial varieties in production in Louisiana. The variety has given good spinning performance in spinning trials and offers Louisiana cotton growers an opportunity to produce better quality cotton along with high lint yields.

### Performance

The performance of Stardel in terms of yield, staple length, lint percentage, boll size, and yarn strength is given in the following tables.

**Table 1.—Comparative Yields of Stardel and other Leading Varieties in Louisiana, 1953-55**

Lint Yields for Indicated Locations									
1953									
Variety	St. Joseph		Bossier City		Baton Rouge		Lecompte	Calhoun	Homer
Stardel									
(La. DS 524-9)	1216		1256	1250	....	....	959	....	....
Deltapine 15	1026		891	1032	....	....	998	....	....
Fox	1108		780	....	....	....	827	....	....
1954									
Variety	St. Joseph		Bossier City		Baton Rouge		Lecompte	Calhoun	Homer
Stardel	1256	1187	243	372	799		....	312	208
Deltapine 15	1200	1077	275	240	732		....	322	173
Fox	1111	1076	259	293	741		....	332	201
Delfos 9169	1146	1208	260	273	748		....	355	146
1955									
Variety	St. Joseph		Bossier City		Baton Rouge		Lecompte	Calhoun	Homer
Stardel	1006	1200	1421	835	884	776	1064	318	1039
Deltapine 15	1106	1263	1365	815	863	844	969	279	963
Fox	950	1210	1297	953	842	655	855	294	1060
Delfos 9169	981	1053	1123	773	715	715	747	289	860
State Lint per Acre Averages Corrected to Seasonal Effects									
Variety	1953		1954		1955		3-Year Ave.		
Stardel	1170		625		949		880		
Deltapine 15	987		574		941		822		
Fox	905		573		902		787		
Delfos 9169	....		591		806		762		



## Yield Records

Stardel has been widely tested in Louisiana during the past three years. It has yielded 7 per cent more lint per acre than Deltapine 15, 12 per cent more than Fox, and approximately 15 per cent more than Delfos 9169. Lint yield records are given in Table 1. The experiments were conducted at St. Joseph, Bossier City, Baton Rouge, Calhoun, Le-compte and Homer. Big differences in yield in any particular year or station are evident from the data in Table 1.

## Staple Length

Staple length determinations were made by the U.S.D.A. Cotton Classing office at Alexandria, Louisiana. These data show a wide range in staple length for all varieties due to environment and location in the different years. Stardel and Delfos 9169 had an average staple length slightly greater than the other two varieties (Table 2).

**Table 2.—Comparative Staple Length of Stardel and other Leading Varieties in Louisiana, 1953-55**

Staple Length in 1/32" for Indicated Locations										
1953										
Variety	St. Joseph			Bossier City		Baton Rouge		Lecompte	Calhoun	Homer
Stardel (La. DS 524-9)	35			35	34	....		34	....	....
Deltapine 15	35			35	33	....		35	....	....
Fox	35			35	..	....		35	....	....
1954										
Variety	St. Joseph			Bossier City		Baton Rouge		Lecompte	Calhoun	Homer
Stardel	35	35		33	32	34		....	34	32
Deltapine 15	35	35		33	32	33		....	34	32
Fox	35	35		34	32	34		....	34	32
Delfos 9169	36	36		34	32	34		....	34	32
1955										
Variety	St. Joseph			Bossier City		Baton Rouge		Lecompte	Calhoun	Homer
Stardel	35	35	35	34	35	35	35	34	35	....
Deltapine 15	34	35	35	34	35	35	35	33	34	....
Fox	34	33	35	34	34	34	35	34	33	....
Delfos 9169	35	35	36	34	34	35	35	34	35	....
State Staple Length Averages										
Variety	1953					1954			1955	
Stardel	34.5					33.6			34.8	
Deltapine 15	34.5					33.4			34.4	
Fox	35.0					33.7			34.0	
Delfos 9169	.. .					34.0			34.8	

## Lint Percentage

There are many important criteria for judging a cotton variety, but lint percentage is one of the important characteristics that influence farmers in their choice of a variety. Stardel is a variety of high lint percentage (Table 3).

**Table 3.—Comparative Lint Per Cent of Stardel and other Leading Varieties of Louisiana, 1953-55**

Lint Per Cent for Indicated Locations										
1953										
Variety	St. Joseph			Bossier City		Baton Rouge		Lecompte	Calhoun	Homer
Stardel (La. DS 524-9)	39.5			39.5		39.5		....	39.5	....
Deltapine 15	39.0			38.9		39.3		....	39.9	....
Fox	36.3			36.2		...		....	36.6	....
1954										
Variety	St. Joseph			Bossier City		Baton Rouge		Lecompte	Calhoun	Homer
Stardel	39.8	39.5		39.9	39.4	40.0		....	37.9	39.1
Deltapine 15	39.1	39.7		39.2	38.6	40.0		....	38.1	39.0
Fox	36.5	36.1		36.0	33.6	37.5		....	35.4	34.6
Delfos 9169	35.6	35.8		34.5	34.2	37.9		....	34.4	33.1
1955										
Variety	St. Joseph			Bossier City		Baton Rouge		Lecompte	Calhoun	Homer
Stardel	39.1	40.5	39.3	36.8	37.0	39.0	38.3	38.1	39.2	....
Deltapine 15	39.1	39.5	38.9	36.1	36.4	39.1	38.3	37.3	38.5	....
Fox	35.5	37.8	38.4	34.3	34.2	35.6	37.7	35.5	36.0	....
Delfos 9169	34.5	35.5	35.5	33.4	33.4	36.1	36.2	33.4	34.7	....
State Lint Per Cent Averages										
Variety	1953					1954			1955	
Stardel	39.5					39.4			38.6	
Deltapine 15	39.3					39.1			38.1	
Fox	36.4					35.7			36.1	
Delfos 9169	...					35.1			34.7	

## Boll Size

The boll size may vary for any particular variety or year. However, varieties on the average keep their relative rank in boll size at any location. The growing conditions influence the average boll size of all varieties in about the same proportion. Data in Table 4 give the ranges of boll size for the varieties at the different experiment stations. Stardel and Fox boll size was slightly smaller than boll size of the other two varieties.

**Table 4.—Comparative Boll Size of Stardel and other Leading Varieties in Louisiana, 1953-55**

Boll Size for Indicated Locations									
1953									
Variety	St. Joseph		Bossier City		Baton Rouge	Lecompte		Calhoun	Homer
Stardel									
(La. DS 524-9)	80		77	88	....	76		....	....
Deltapine 15	77		73	89	....	68		....	....
Fox	80		78	..	....	76		....	....
1954									
Variety	St. Joseph		Bossier City		Baton Rouge	Lecompte		Calhoun	Homer
Stardel	73	84	68	87	93	....		93	91
Deltapine 15	69	78	80	87	91	....		97	89
Fox	75	83	72	89	87	....		106	93
Delfos 9169	64	68	78	76	77	....		86	89
1955									
Variety	St. Joseph		Bossier City		Baton Rouge	Lecompte		Calhoun	Homer
Stardel	71	75	69	86	83	81	75	83	80
Deltapine 15	67	70	65	77	76	73	72	91	72
Fox	70	68	67	80	81	80	78	77	77
Delfos 9169	55	61	56	68	66	58	61	64	61
State Boll Size Average									
Variety	1953				1954				1955
Stardel	80.3				84.1				78.1
Deltapine 15	76.8				84.4				73.7
Fox	78.0				86.4				75.3
Delfos 9169	.. .				76.9				61.1

## Yarn Strength

Yarn strength is an important characteristic which mill buyers use in choosing areas to purchase raw cotton. With the present day emphasis upon better quality cotton, all of our cotton varieties must possess good fiber properties. Cotton buyers are continually seeking varieties that give excellent mill performances.

According to fiber technologists, the three most important fiber properties which contribute to high yarn strength generally have proved to be fiber strength, fiber fineness, and fiber length. Yarn strength is an important factor in the milling performance of quality cotton in average staple length and average fineness classes.

Stardel produces fiber of average fineness and high strength. These characteristics will enable growers of this variety to produce better quality cotton.



# Spinning Test of Stardel and Deltapine 15 at Gilliam, La., in 1955\*

	Length		Yarn Length	
	U.H.M.	Mean	22's	50's
Stardel	1.13	.91	133.7	46.7
Deltapine 15	1.08	.85	113.1	38.0

\*The spinning test was conducted by U. S. D. A. Production and Marketing Service, College Station, Texas.

The fiber of Stardel is very strong. This probably is an important factor in giving Stardel higher 22's and 50's yarn strength than Deltapine 15. The fiber strength of Deltapine 15 is average. The spinning and other fiber tests indicate that Stardel is approximately 10 per cent stronger than Deltapine 15.