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STONEVILLE® BRAND ST 3664R AND NEXGEN TM BRAND 3969R—TWO NEW, MID-SEASON STORMPROOF VARIETIES FROM EMERGENT GENETICS, INC

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Abstract

ST 3664R and NG 3969R are two new mid-season stormproof varieties that will be offered for sale by Emergent Genetics, Inc. in 2005. Both varieties contain the Roundup Ready® gene. They both offer very good to excellent seedling vigor and excellent yield potential, similar to that of ST 4793R. ST 3664R is slightly earlier than ST 4793R, while NG 3969R is not significantly different in maturity from ST 4793R. Consequently, the varieties should be well suited to production in the High Plains from Plainview-south, in all of the Rolling Plains of Texas and in southwestern Oklahoma. Both varieties have storm resistance equal to or better than PM 2326 RR. ST 3664R has base fiber and will be targeted for lower input acres, while NG 3969R has excellent fiber and will be targeted for higher input production acres.

Introduction

Both ST 3664R and NG 3969R represent novel germplasm. They were developed using Roundup Ready parents in a conventional breeding program and each were developed from a unique cross. Both varieties have been tested in Emergent Genetics' Research and Development program from 2001 through 2004 across the northern and southern High Plains of Texas. Both varieties were entered in University OVTs (Official Variety Trials) in West Texas, northern New Mexico, southwest Oklahoma and Kansas in 2004, but adverse weather in the fall of 2004 has made data unavailable at the time of the Beltwide conferences.

Materials and Methods

Emergent Genetics' Research and Development trials are small plot (2 rows x 40 ft) trials with four replications. The trials are conducted across a wide cross-section of the High Plains. Plots were mechanically harvested using a JD 7445 stripper equipped with a bur extractor and modified for small plot harvest. Lint fraction and fiber quality were determined from machine-harvested sub-samples. Due to the maturity of these varieties being better suited for the Southern High Plains, the data presented will be from trials that were conducted from Lubbock on to the south on the High Plains. Data from those trials conducted from 2001-2003 were compiled into a single database for analysis. Statistix 8 was used to run an ANOVA on the data.

ST 3664R

ST 3664R is a large seeded variety with excellent early season vigor. It has a hairy leaf and begins fruiting on the 6^{th}-7^{th} node. It is a vigorous growing variety that produces an erect, bushy plant that is typically of medium plant height. Growth regulator applications may be necessary to keep growth in check if growing conditions are favorable. It has fair to good tolerance to *Verticillium* wilt, fair tolerance to *Fusarium* wilt, and is partially resistant to bacterial blight.

Yield and fiber data for ST 3664R and check varieties is presented in Table 1. Yield and fiber quality of ST 3664R was similar to ST 4793R, but had shorter length and lower micronaire.

Table 1. Yield and fiber data for ST 3664R and check varieties from Emergent Genetics Research and Development trials across 12 Southern High Plains locations in Texas from 2001 through 2003.

Variety	Lint Yield (lbs./A)	Length (inches)	Strength (g/tex)	Micronaire
ST 3664R	1530	1.06	28.7	4.6
PM 2326 RR	1243	1.06	30.2	4.9
ST 2454R	1257	1.05	28.6	4.8
ST 4793R	1461	1.07	28.4	5.0

LSD (0.05)	106	0.01	0.60	0.14

Maturity and storm resistance evaluations for ST 3664R and check varieties are presented in Table 2. Maturity was earlier than ST 4793R, but still significantly later than PM 2326 RR and ST 2454R. Storm resistance was excellent for ST 3664R, with an average rating well above ST 4793R and even significantly higher than PM 2326 RR.

Table 2. Maturity and storm resistance for ST 3664R and check varieties from Emergent Genetics Research and Development trials across 12 Southern High Plains locations in Texas from 2001 through 2003. Storm resistance was rated on a scale of 1 to 9, with 9 being the highest level of storm resistance.

Variety	Percent Open Bolls	Storm Resistance
ST 3664R	39.7	7.7
PM 2326 RR	50.8	7.4
ST 2454R	27.4	3.7
ST 4793R	35.0	3.4
LSD (0.05)	2.9	0.2

NG 3969R

NG 3969R is a NexGen™ brand variety from Emergent Genetics. The NexGen brand is characterized by varieties having excellent storm resistance coupled with excellent fiber quality. NG 3969R has a medium sized seed. It is a smooth leaf variety that begins fruiting on the 6th to 7th node. It also has a vigorous growth habit, but not as vigorous as ST 3664R. The plant is also more compact than ST 3664R and is less likely to require growth regulator applications. It has fair to good tolerance to *Verticillium* wilt and fair to good tolerance to *Fusarium* wilt. It is susceptible to bacterial blight.

Yield and fiber data from NG 3969R and check varieties is shown in Table 3. The yield of NG 3969R was not significantly different from ST 4793R, but was significantly higher than ST 2454R and PM 2326 RR. Length of NG 3969R was significantly higher than all three check varieties. Strength was not significantly different from PM 2326 RR, but was higher than the other two checks. Micronaire was significantly lower than all three other checks.

Table 3. Yield and fiber data for NG 3969R and check varieties from Emergent Genetics Research and Development trials across 10 Southern High Plains locations of Texas from 2001 through 2003.

Variety	Lint Yield (lbs./A)	Length (inches)	Strength (g/tex)	Micronaire
NG 3969R	1435	1.11	30.5	4.0
PM 2326 RR	1322	1.05	30.2	4.9
ST 2454R	1257	1.04	28.8	4.6
ST 4793R	1413	1.05	28.3	5.1
LSD (0.05)	147	0.01	0.9	0.2

Maturity and storm resistance ratings for NG 3969R are given in Table 4. There was no significant difference between the maturity of NG 3969R and ST 4793R. NG 3969R was significantly later than both PM 2326 RR and ST 2454R. Storm resistance of NG 3969R was significantly better than all three check varieties, even PM 2326 RR.

Table 4. Maturity and storm resistance for NG 3969R and check varieties from Emergent Genetics Research and Development trials across 10 Southern High Plains locations in Texas from 2001 through 2003. Storm resistance was rated on a scale of 1 to 9, with 9 being the highest level of storm resistance.

Variety	Percent Open Bolls	Storm Resistance
NG 3969R	37.3	6.9
PM 2326 RR	50.9	6.5
ST 2454R	57.7	4.2
ST 4793R	34.5	3.9
LSD (0.05)	3.1	0.4