

Twin-Row and Single-Row Variety Comparisons

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Introduction

Research in row configuration has been conducted at various times during the past two decades to help create solutions for various problems. In Oklahoma, peanuts are typically planted in 36-inch rows. However, some producers have started planting in a twin-row planting configuration. Twin-rows are usually centered on 36 inches, and a row is planted 3.75 inches to either side of the row center. Twin-row planting has grown in popularity during the last 10 years to 15 years. Popularity for twin-row planting has been mostly in the southeast peanut production region, where researchers have observed a reduction in tomato spotted wilt virus with twin-row compared to single-row.

Very little research has been conducted to compare differences among varieties in regard to row configuration. The objectives of this research were to:

- determine the effect of row configuration on peanut yield and grade, and
- determine if differences exist among varieties when planted in twin-row and single-row configurations.

Methods

In 2009, studies were conducted at Ft. Cobb to investigate agronomic advantages to twin-row planting. The experimental design was a split-plot design with row configuration (twin-row and single-row) as the main plot and variety as the sub-plot. Varieties included in the study were

Table 1. Twin-row and single-row variety comparison, Ft. Cobb, 2009.

Variety	Single-Row [†]		Twin-Row [‡]	
	Yield -- lbs/A --	% TSMK [§]	Yield -- lbs/A --	% TSMK
Tamrun OL02	4,085 A	62	3,902 A	63
Tamrun OL07	3,567 A	58	3,898 A	62
ARSOK-R1	3,733 A	68	3,861 A	68
AT 98-99-14	3,208 A	66	3,630 A	66
Tamnut 06	3,121 A	63	3,616 B	65
Spanco	3,253 A	65	3,798 B	69
Jupiter	3,843 A	63	4,274 A	63

[†]Single-row was planted on 36-inch rows at a density of 4.8 seeds/row ft.

[‡]Twin-row was planted on 36-inch centers with a between row spacing of 7.5 inches in the twin-row. Seeding density was 2.4 seeds/ft.

[§] % TSMK = Percent total sound mature kernels.

§ Differences in uppercase and lowercase letters within the same row are significantly different ($P \leq 0.05$).

ARSOK-R1, Tamrun OL07, Tamrun OL02, Jupiter, Spanco, AT 98-99-14 and Tamnut 06.

Plots were strip-tilled seven days before planting on May 14, 2009. The single-row peanuts were planted in rows spaced at 36 inches, while the twin-row treatment was planted on 36-inch centers, and the spacing between the twin-rows was 7.5 inches. Single-row treatments and the twin-row treatments were planted at the same density of 4.8 seeds/row foot. This provided the same number of seeds/A. All plots received the same herbicide and fungicide applications.

Results

At Ft. Cobb, a significant difference was observed between row configurations. Average yield for single row was 3,544 lbs/A, while the average yield across varieties was 3,854 lbs/A for twin-row. When looking at specific varieties, Tamnut 06 and Spanco responded extremely well

to twin-row planting. No differences in peanut grades were observed between row configurations.

Results in 2009 were similar to 2007 and 2008. In 2007, twin-row planted Tampsan 90 increased yield by 671 lbs/A and total sound mature kernels by 4 percent compared to single-row. At Stillwater in 2008, peanut yields were excellent and averaged 4,600 lbs/A when averaged across varieties. Row configuration for twin-rows had a significantly higher yield in five out of the seven varieties. Twin-row increased peanut yield by an average of 1,238 lbs/A with the five varieties that responded favorably to twin-row.

Three out of four site years, twin-row peanut has provided a potential yield increase compared to traditional single-row planting on 36-inch centers. The yield increase associated with twin-row configurations most likely has to do with increased light interception from increased leaf area.