Evaluation of peanuts planted in thirty-inch rows.

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Peanuts (*Arachis hypogaea* L.) are traditionally grown in 36-inch row spacing. But with increases in corn (*Zea mays* L.) and soybean (*Glycine max* [L.] Merr.) acreage in primary peanut producing areas, there is growing interest in converting peanuts to 30-inch rows for uniform equipment settings. Research on corn and soybean has shown positive yield results by moving to narrower rows. Some potential benefits of decreasing row spacing in peanuts may include competing with mid and late season weed escapes because of quicker canopy closure, and also cooler soil temperatures during early pegging. Under bare soil conditions prior to canopy closure, soil temperatures in the south will often get so hot that they scorch pegs as they try to enter the soil. A narrower row in peanuts will allow more peanut rows on a per acre basis (14,520 linear ft / ac at 36-inch; 17,424 linear ft / ac at 30-inch), but should still allow ample room for development so peanuts are not competing with other peanut plants for water, light, nutrients, space, and other resources. The objectives of this research were to compare 30-inch single row pattern to 36-inch single and 36-inch twin row pattern plantings of peanut for yield, grade, tomato spotted wilt (*Tospovirus*) (TSW) incidence, and economic impact. Two peanut cultivars ('Georgia Green' and 'C-99R') were used in conjunction with the row spacing treatments, making a 3 x 2 factorial experiment with treatments arranged in a randomized complete block design, and six (2008) or four (2009) replications. Plant population was held constant at approximately 87,120 seed / acre, regardless of row treatment, translating to 6 seed / ft of row on the 36-inch spacings, and 5 seed / ft at the 30-inch spacing.

In 2008, yields were higher on a per area basis using the 30-inch single rows (6102 lb / acre) than either the 36-inch single (5390 lb / acre) or 36-inch twin rows (5423 lb / acre). Plant stands were higher for the 36-inch twin rows (5.1 plants / ft) than for the 36-inch singles (3.6 plants / ft) or 30-inch singles (3.4 plants / ft), which translates to a final plant survivability rate of 85%, 60%, and 68%, respectively. The intra-row competition in single row patterns results in fewer plants, but the adjustment in seeding rate between the 30-inch singles compared to 36-inch singles reduced mortality by spreading out the plants within each row. It was also noted that there was quicker lapping of row middles in the 30-inch single row pattern than the 36-inch single rows, which should be an advantage in suppressing mid-season weed competition. There was no difference in TSW or grade among the row spacing treatments, although C-99R (4.0 %; 76.3%) had lower TSW incidence and grade respectively than Georgia Green (10.7 %; 78.2%). For 2009, yields were greatly reduced as a result of assignment in a poor field – there was no known explanation as to why plant performance and yield was sub-par. The 36-inch twin rows (2487 lb / acre) yielded higher than the 36-inch single rows (1671 lb / acre), with the 30-inch single rows (1940 lb / acre) statistically equal to both.

There was an additional cost associated with 30-inch row spacing for equipment and setup. However, combining both years of data, average income above variable costs (AIAVC) was greater in 30-inch singles over 36-inch singles by $63.12, while 36-inch twin rows returned an AIAVC of only $6.78 over 30-singles. These results show 30-inch rows can provide an advantage over traditional row spacings in peanut production.