

Supplemental Replanting of Gaps in Plant Stand Affects Peanut Production and Incidence of Tomato Spotted Wilt Virus.

S.B. DAVIS*, R.S. TUBBS, C. PILON, J.L. SNIDER, Crop and Soil Sciences Department, The University of Georgia, Tifton, GA 31794; and R.C. KEMERAIT, Department of Plant Pathology, The University of Georgia, Tifton, GA 31794.

Peanut (*Arachis hypogaea* L.) producers in Georgia every year are faced with the decision of whether seedling emergence is adequate to produce optimal yields. Producers may replant fields when it is unnecessary. Field experiments were conducted at the University of Georgia's Lang-Rigdon Farm in Tifton, GA during 2017. The objectives of this study were to determine the most optimum method of replanting a non-uniform stand based on varying length of gaps in the row to maximize yield and grade (total sound mature kernels) of peanut. Tomato spotted wilt virus (*Tospovirus*) (TSWV) incidence was also assessed. Plots were thinned to 6.6 plants/m except for one standard 13.1 plants/m check plot. Plants were removed from random sections of row prior to replanting to establish 0.61 m, 1.22 m, or 1.83 m of consecutive row length where no plants would grow. Each length was pulled either once or twice per 10.36 m row as separate treatments. All gap scenarios were factorially replicated with replant treatments as follows: 1) no replant, 2) replant only in the length of gaps, and 3) replant the entire length of row. All replant treatments were made at a rate of 13.1 seed/m at 19 days after original planting, approximately 8 cm to the side of the original row. Treatments for the length or frequency of gap in stand were not significant for yield or TSWV. Pod yield when averaged over gap length and frequency in row (excluding checks) was greatest for full row replant (6012 kg/ha), followed by replanting only in the gap (4911 kg/ha), with no replant (4152 kg/ha) yielding the least. Among replant treatments there was no difference in grade between no replant (73.5%) and replanting only in the gap (72.7%), but full row replant (74.4%) was greater. The increase of yield and grade for the full row replant treatment is partially attributed to a later digging date than the other replant treatments, as triggered by the hull-scrape maturity profile. There was no difference in percentage of TSWV between no replant (5.7%) and replanting only in the gap (7.3%), but there was less virus in the full row replant (2.4%) treatment. Full row supplemental replanting was beneficial in increasing yield and total sound mature kernels, and for decreasing TSWV incidence in the first year of this study. The experiment will be repeated.