Effect of Planting Date on Growth and Production of Virginia-type Cultivars and Breeding Lines

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Improved resistance to the tomato spotted wilt virus (TSWV) (Bunyaviridae, Tospovirus) of the new peanut cultivars allows early plantings and better management scheduling over the growing season. In this experiment, we examined the effect of planting date, late April, beginning May, and mid to late May, on plant development, disease incidence, pod yield, pod brightness, grade factors, and gross value at the Tidewater Agric. Res & Ext. Center, Suffolk, VA, and Taylor Slade Farm near Williamston, NC. Thirty genotypes in 2009 and 36 in 2010 were grown at both locations under a maximum input approach. Even though years were different, 2009 was cool and humid and 2010 was hot and dry, planting date had similar effects on plant development; April plantings delayed beginning lower by 15 days each year and beginning maturity by 23 days in 2009 and 8 days in 2010. The time from flower to beginning seed was approximately 31 days each year, but the time from beginning seed to beginning maturity was 50 days in the cool 2009 and 20 days in the hot and dry record year 2010, consistent across the planting dates. TSWV ratings indicated that even for the partial-resistant cultivars, disease was more severe in early plantings. For example, Bailey had a rating of 3 for the TSWV symptomatic plants in April planting, 1.3 in early May planting, and 0.7 in late May planting. Similarly, Sclerotinia blight (Sclerotinia Minor) symptomatic plants were double in number in April vs. late May planting. In 2009, yield and crop gross value were significantly higher for the later plantings at both locations; both locations received approximately 388 mm precipitation from June to Aug. In 2010, yield was significantly greater for the April compared to late May planting at Suffolk, where June to Aug precipitation was 13 mm, and similar for both plantings at Williamston (2800 kg ha-1), where June to Aug precipitation was 236 mm. Damaged kernel content was significantly higher and the extra-large kernel and total sound mature kernel content were significantly lower in the dry 2010 vs. 2009 at both locations but similar across the planting dates. Interestingly, the jumbo and fancy pods were brighter for the April vs. late May plantings at both locations in 2009 and at Suffolk in 2010. Our data seem to suggest that early planting of peanut could result in a yield benefit in very dry years but not in regular years; therefore we do not recommend early plantings even for disease resistant cultivars.