

Relative Incidence of Tomato Spotted Wilt in Phorate-Treated and Nontreated Peanut

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In-furrow application of phorate (Thimet) insecticide is a key part of the integrated program for managing tomato spotted wilt, caused by *Tomato spotted wilt virus*, in peanut (*Arachis hypogaea*). Response to phorate has been variable, often with less noticeable benefit in cultivars with higher levels of field resistance. The objective of this study was to determine the relationship between incidence of spotted wilt in plots treated with phorate and plots with no phorate. Field experiments conducted in Tifton, GA during 2015-2019 were used for the analysis. Experiments included multiple cultivars with a range of field resistance to TSWV based on previous reports. Final incidence, in percentage of the linear row noticeably affected by tomato spotted wilt was assessed. Incidence of spotted wilt and pod yield with phorate was paired with the incidence of spotted wilt without phorate within each respective cultivar and replication. A total of 263 data pairs were subjected to regression analysis. Across all experiments and entries, incidence of spotted wilt with phorate (IncP) increased with increasing incidence without phorate (IncN) according to the function: $\text{IncP} = 2.62 + 0.49 \cdot \text{IncN}$ ($P < 0.0001$, R square = 0.58). Pod yield (kg/ha) of plots that received phorate (YldP) increased as yield with no phorate (YldN) increased according to the function: $\text{YldP} = 2849 + 0.62 \cdot \text{YldN}$ ($P < 0.0001$, R Square = 0.45).