

# **Viral Suppression Through the Use of Conservation Tillage Systems in Peanut**

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## **Abstract**

Tomato spotted wilt virus (TSWV) causes dramatic yield and economic losses to the peanut industry. The virus is vectored by thrips; but insecticide suppression of TSWV may be linked to genetic and physiological responses to these chemicals rather than thrips population control. Conservation tillage (CT) has also been shown to decrease the negative effects of TSWV, but many questions remain: 1) is TSWV infection actually lowered in CT?; 2) do all peanut cultivars exhibit TSWV resistance in CT?; and 3) what is the interaction between CT and insecticides? To answer these questions, a factorial experiment examining two tillage systems (conservation, conventional), four insecticide treatments (aldicarb, phorate, phorate + prothioconazole, no insecticide), and three peanut cultivars (Georgia Green, GA-02C, AP3) was initiated in Dawson, GA in 2006. As expected, CT systems had lowered TSWV symptoms which were linked directly to decreases in viral infection rates. Cultivars varied in the percent of TSWV suppression in the CT system and responded to insecticides differently. However, the interaction between infection and yield indicated that the benefits of using an insecticide were not linked solely to infection decreases, but possibly to changes in crop physiology. Lastly, an interaction between tillage and insecticide treatment indicated that some insecticides were more effective at reducing TSWV infection in CT systems than others.