

Effect of Fungicide Programs on Plant Health, Maturity, Yield, and Quality on Peanut in Georgia

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Peanut (*Arachis hypogaea* L.) plants are susceptible to a wide spectrum of diseases during the growing season. Various fungicides have been used to provide control for these diseases. Implementing sound fungicide programs is essential to keep peanut plants healthy and protect yield; however, information on the effects that commercially-available fungicides have on pod maturity and quality of peanut is scant. In 2018, a field experiment was conducted on the University of Georgia Ponder Farm in Tifton, GA and at a grower's non-irrigated field to determine the effects of different fungicide programs on pod maturity, yield, and quality of two peanut cultivars across four harvest dates. Fungicide programs consisted of a low-input control utilizing Bravo Weather Stik (chlorothalonil), Bravo Weather Stik plus Tebuconazole, and Elatus (azoxystrobin, Solatenol). The two cultivars evaluated were Georgia-06G and Georgia-09B. The four harvest dates were determined by adjusted growing degree day units of 2400, 2500, 2600, and 2700 GDD's. All treatments were replicated four times and arranged in a randomized complete block design. Leaf spot occurrence was recorded 113 DAP and at the digging of each harvest date. Tomato spotted wilt virus and southern stem blight were also assessed prior to harvest. Pods samples were collected and assessed for maturity, yield, and grade at each of the four harvest dates. The pods from each harvest date was saved and stored. Each bag was shelled, and seeds were sorted, placed into seed bags, and placed back in storage. Germination samples were taken from the shelled seed of each harvest date and sent to the Georgia Department of Agriculture for testing. Preliminary analysis of the results suggested that fungicide programs influenced yield and the overall health of the crop throughout the growing season. The Elatus program seemed to provide higher disease control than the two other fungicide programs, resulting in higher yield and lower disease incidence. Harvest date resulted in variations among grade, maturity, and disease severity, and 2500 GDD indicated to be the most suitable for a high yield and low disease incidence. At the irrigated location, fungicide programs had no effect on germination and cold germination tests. Harvest date did prove to have an influence on both, showing significantly decreased rates of germination by the fourth harvest date. At the non-irrigated location, the Elatus and Bravo plus Tebuconazole programs had significantly higher cold germination rates than the Bravo only program.