Disease Management Programs for Bailey II Peanut in North Carolina

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The cultivar Bailey dominated Virginia-type peanut production in the Virginia-Carolinas area after its release, producing high yields in diverse environments. In 2017, the NC State breeding program released Bailey II as a high oleic alternative to Bailey. Bailey II has performed as well or better than the original Bailey or the high oleic cultivar Sullivan in breeding, PVQE, and yield trials. However, pest management recommendations specific to this cultivar need to be developed in advance of widespread planting. At the same time, leaf spot control has become more difficult in NC, indicating that one or two additional sprays per season may be required to manage leaf spot on most cultivars. The cultivars Sullivan and Bailey II were planted at the Peanut Belt Research Station in Lewiston, NC and at the Upper Coastal Plain Research Station near Rocky Mount, NC in 2019. Treatments were replicated four times in a split-plot design, with cultivars as whole plots and fungicide schedules as subplots. Fungicides were applied biweekly 1) 6 times from 45 days after planting (DAP) to 120 DAP; 2) 5 times from 45 to 105 DAP; 3) 5 times from 60 DAP to 120 DAP; or 4) were not applied. The same fungicides were used in all schedules and were selected based on performance in the previous two seasons. Leaf spot and defoliation were evaluated separately on a percentage scale and stem rot incidence was determined on freshly inverted plants. Late leaf spot was the predominant foliar disease and incidence reached nearly 100% in untreated controls at both locations. Excellent disease control was maintained in all sprayed treatments at both locations. Disease and yield did not differ between Sullivan and Bailey II at either location ($P > 0.05$) and responses to spray schedules did not depend on cultivar ($P > 0.05$). The three fungicide programs did not differ from each other in disease or yield at Rocky Mount. At Lewiston, the 5-spray program started at 60 days had more leaf spot and defoliation than the 6-spray program or the 5-spray program started at 45 days, but yields were not different among schedules ($P > 0.05$). Yield impacts at both locations may have been mitigated by unusually hot, dry weather from mid-September to harvest.