Evaluation of fungicide programs for control of early leaf spot and stem rot of peanut in Oklahoma

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Fungicides were applied to the Spanish cultivar 'Tamnut OL06' in a full-season calendar schedule (6 applications), a reduced calendar schedule (3 applications on a 14-day schedule beginning 1 Aug.), or according to a weather-based advisory program (3 applications; www.mesonet.org) for control of early leaf spot. Leaf spot control with advisory programs was similar to the full-season programs, and better than the reduced calendar programs (P=0.05) for all of the fungicides evaluated. Tebuconazole provided good leaf spot control (<15% defoliation) and the highest yields when applied in full-season block program or in an advisory program tank mixed with chlorothalonil. Yield responses (P=0.05) to fungicide programs averaged over 900 lb/A, demonstrating the importance of foliar disease management where weather is favorable for early-season disease development. Full-season fungicide programs were evaluated in adjacent trials on 'Tamnut OL06' inoculated at mid-season with Sclerotium rolfsii. Both stem rot and early leaf spot reached severe levels in these trials. Stem rot levels were greatest (P=0.05) for the full-season programs with chlorothalonil (22 to 28%) compared to the untreated check (4 to 11%). The low level of stem rot in the untreated checks was attributed to severe defoliation by early leaf spot (70 to 80%) which created a less favorable microclimate for stem rot development. As a result, control of leaf spot with chlorothalonil did not increase yield where stem rot was severe. All of the programs with fungicides registered for stem rot control provided excellent control of early leaf spot (0 to 10% defoliation) and increased yields (P=0.05) compared to both the untreated check and full-season chlorothalonil program. Yield responses ranged from 944 to 1881 lb/A above the untreated check. Fungicide programs that included tebuconazole, penthiopyrad, tebuconazole + prothioconazole, tebuconazole + azoxystrobin, flutolanil, propiconazole + flutolanil; but not azoxystrobin or pyraclostrobin + fluxapyroxad, reduced levels of stem rot compared to the full-season chlorothalonil program. Fungicide programs that included tebuconazole, azoxystrobin + tebuconazole, penthiopyrad, and flutolanil provided the best control of stem rot (>50% reductions in disease incidence).