Effect of Herbicide and Fungicide Tank-mixes on Disease and Weed Control in Peanut.

W. J. GRICHAR*, Texas AgriLife Research, Beeville, TX 78102; P. A. DOTRAY, Texas AgriLife Research, Lubbock, TX 79403; A. J. JAKS, Texas AgriLife Research, Beeville, TX 78102; and J. WOODWARD, Texas AgriLife Extension Service, Lubbock, TX 78102.

Postemergence weed control and foliar and/or soilborne disease control are major concerns for peanut growers across the state. Requests from peanut growers about the possibility of mixing postemergence herbicides with a foliar fungicide seem to increase every year because of the need to reduce field operations in order to reduce fuel costs. Therefore, field studies were conducted in south, central, and west Texas from 2007 through 2009 to determine the effects of various tank-mix combinations of postemergence herbicides (acifluorfen, clethodim, sethoxydim, imazapic, imazethapyr, lactofen, and 2,4-DB) with three commonly used peanut fungicides (prothioconazole + tebuconazole, pyraclostrobin, tebuconazole, fluazinam, and boscalid) on annual grass and broadleaf weed control as well as foliar and soil-borne disease control.

Weed control. Broadleaf signalgrass [Brachiaria platyphylla (Griseb.) Nash], Texas millet [Urochloa texana (Buckl.) R. Webster] and southern crabgrass [Digitaria ciliaris (Retz.) Koel] control was not reduced (at least 87%) when clethodim or sethoxydim were tank-mixed with any of the fungicides compared with clethodim or sethoxydim applied alone. In west Texas, the combination of 2,4-DB and prothioconazole + tebuconazole did result in antagonism in one year with only 30% Palmer amaranth (Amaranthus palmeri L.) control. In south Texas, lactofen, imazapic, or 2,4-DB alone or in combination with any of the fungicides did not result in reduced control of Palmer amaranth. However, either acifluorfen or imazethapyr plus pyraclostrobin and imazethapyr plus pyraclostrobin resulted in reduced Palmer amaranth control from either of the herbicides alone. Lactofen, acifluorfen, imazapic, and 2,4-DB alone or in combination with fungicides provided at least 97% control of smellmelon (Cucumis melo L. var. Dudaim Naud). Imazethapyr alone controlled smellmelon only 79% while imazethapyr in combination with any of the fungicides provided at least 90% control. All herbicides alone or in combination with prothioconazole + tebuconazole, pyraclostrobin, or tebuconazole controlled pitted morningglory at least 90% with the exception of lactofen plus pyraclostrobin which resulted in 79% control.

Disease control. Early leafspot (Cercospora arachidicola S. Hori) was the predominant species at all locations in both years. When fungicides were applied in combination with broadleaf herbicides at Lamesa none of the fungicide-herbicide combinations resulted in greater leafspot than the respective fungicide alone. At Yoakum, all fungicide-herbicide combinations resulted in less leafspot than the untreated check in 2008 and 2009; however, in 2009, reduced leafspot efficacy was noted with pyraclostrobin + imazapic and tebuconazole + clethodim, acifluorfen, or imazapic compared with pyraclostrobin or tebuconazole alone. Southern blight (Sclerotium rolfsii Sacc.) pressure was only present at the Yoakum location and was considered light. When fungicides were applied in combination with herbicides, all fungicide-herbicide combinations, with the exception of pyraclostrobin plus 2,4-DB, produced no more southern blight disease than the respective fungicide alone. No effects on Sclerotinia blight (Sclerotinia minor Jagger) control were noted when clethodim or sethoxydim were applied in combination with boscalid or fluazinam.

Peanut Injury. When broadleaf herbicides were evaluated, lactofen and acifluorfen resulted in peanut injury and the addition of prothioconazole + tebuconazole pyraclostrobin, or tebuconazole did not enhance crop injury. No injury was observed following imazapic, imazethapyr, or 2,4-DB alone but enhanced peanut injury was observed when pyraclostrobin was added to imazapic, imazethapyr, or 2,4-DB; when tebuconazole was added to 2,4-DB or imazapic; and when prothioconazole + tebuconazole was added to imazapic, imazethapyr or 2,4-DB depending on location and year. When grass herbicides were evaluated, no peanut injury was noted in south Texas while in the High Plains, clethodim plus either tebuconazole or prothioconazole + tebuconazole and sethoxydim in combination with any of the fungicides resulted in increased peanut injury when compared with the untreated check.