## Peanut and Weed Response to Postemergence Herbicide Tank-Mixtures Utilizing Paraquat

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Paraquat is a commonly used postemergence (POST) herbicide used to control broadleaf and grass weed species in peanut in the Southeast. The objective of this study was to determine the effects of POST herbicide tank-mixtures including paraquat on vegetation, yield, and grade for runner-type peanut cultivars and weed species. Field experiments were conducted in 2016 and 2017 in Ty Ty, GA and Plains, GA. Georgia-06G, Georgia-14N, TUFRunner™ '511', and FloRun™ '157' were the four cultivars evaluated. The herbicide tank-mixtures included 1. paraquat, 2. paraquat + acifluorfen + bentazon, 3. paraquat + acifluorfen + bentazon + S-metolachlor, and 4. paraquat + acifluorfen + bentazon + acetochlor. Leaf burn, stunting, yield, and grade were evaluated. Including bentazon in the tank-mixture reduced foliar injury and stunting. Georgia-06G and TUFRunner™ '511' yielded greater than Georgia-14N and FloRun™ '157'. Overall, the herbicide tank-mixtures did not have a negative effect on yield. With no interactions observed, these herbicide treatments can be used in conjunction with the given runner-type peanut cultivars under irrigated conditions without concern for excessive injury or decline in yield or grade. A greenhouse experiment was conducted as a split-plot design with four replications and repeated twice in time during 2017. The whole plots were the herbicide treatments and sub-plots were the weed species. Paraquat alone significantly reduced biomass for all weed species, but varying effects were observed with the other herbicide tank-mixtures. The appropriate tank-mixture for adequate control differs for each weed species. This experiment showed the need for additional herbicides in tank-mix with paraquat, specifically including *S*-metolachlor with paraquat + bentazon tank-mixtures on broadleaf and grass weed species.