Impact of New Prohexadione Calcium Formulation on Vine Growth Suppression and Yield of Peanut (*Arachis hypogaea* L.)

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Growers continually face management decisions for controlling excessive vine growth with the introduction of newer runner market-type peanut (*Arachis hypogaea L.)* cultivars. One-way growers have achieved this is through the use of prohexadione calcium. Prohexadione calcium is a plant growth regulator used in peanuts to reduce internode length through inhibition of gibberellin biosynthesis. Currently, prohexadione calcium is only available as a granular formulation (Kudos 27.5 WDG and Apogee 27.5 WDG); however, a liquid experimental formulation (FAL-2042) by Fine-Americas Inc. is being evaluated to determine its efficacy on vine growth suppression, disease severity, and yield response for runner market-type cultivars.

In 2021, an on-farm trial in Tift County Georgia was conducted to evaluate varying rates of FAL-2042 compared to Kudos 27.5 WDG on the cultivar Georgia-12Y. Treatments consisted of an untreated check, FAL-2042 at 140 g ai h^{-1}, 105 g ai h^{-1}, 70 g ai h^{-1}, and Kudos 27.5 WDG at 105 g ai h^{-1}. Initial treatments were applied when 50% of the lateral branches were touching and again 14 days later. Treatment responses were assessed based on mainstem height, height to node ratio, % *Rhizoctonia solani* severity, yield, and net revenue. Reduction of mainstem height and height to node ratio was significant for all FAL-2042 treatments compared to the untreated check. Greatest suppression was exhibited by all three rates of FAL-2042 compared to Kudos 27.5 WDG. FAL-2042 at 105 g ai h^{-1} and 70 g ai h^{-1} significantly reduced %*Rhizoctonia solani* compared to the untreated check. Kudos 27.5 WDG significantly increased yield and return on investment compared to the untreated check, however no significant difference was shown among growth regulator treatments. Further rate studies are needed to confirm the observed differences between FAL-2042 and Kudos 27.5 WDG; However, FAL-2042 may provide a stronger physiological reaction within the plant.