

Achieving an Optimal Prohexadione Calcium Rate by Developing New Methods for Dosing in Mississippi Peanut (*Arachis hypogaea*)

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The use of prohexadione calcium growth regulators among peanut (*Arachis hypogaea*) producers has become a common practice. The use of this foliar applied growth regulator is responsible for reducing unnecessary vegetative growth, while increasing reproductive growth, therefore, increasing pod yield. Prior research has proven that the use of prohexadione calcium is successful in increasing peanut yields. The problem faced by producers is finding the “perfect rate” of prohexadione calcium to apply. Previous research has found that highest yields resulted when rates below the full label rate were applied at these two growth stages. Current labeled recommendations call for a blanket rate to be applied to peanut when 50% of vines touch in the centers of the row and again at 100% vines touching.

Research was undertaken to better assess improved methods to determine optimal prohexadione calcium rates applied to peanut. To determine the optimal rates applied to Georgia 06-G and TUF Runner 297, methods including growth rate measurements, growing degree days (GDD) and the use of a Crop Circle NDVI sensor were undertaken. The methodology to determine rates will be presented and yields will help to confirm the rates applied during this study. The measurement of vine density will be an accurate representation of the need for an application of prohexadione calcium to combat the excessive growth of unnecessary vegetation. It is expected that these methods can be easily used by a grower to apply optimal rates of prohexadione calcium to result in maximum yield and return on investment. Based on the methods developed in this study, guidelines will be released to be implemented for the 2020 growing season.