Summary of Variables Associated with Application of Plant Protection Products in Peanut

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Application variables including spray volume and pressure, ground speed, nozzle selection, and co-application of micronutrients, pesticides, plant growth regulators, and other products can influence efficacy of pest control and peanut growth and development. Carrying capacity of sprayers and boom width can influence the time required to apply pesticides and other products. Information on these variables is limited in the peer-reviewed literature for peanut (Arachis hypogaea L.). In this brief, we present information from a survey of growers during Cooperative Extension Service County (North Carolina) or annual state (South Carolina and Virginia) meetings during January and February 2017 where peanut production and pest management practices were discussed. Survey respondents represented approximately 74,000 acres or 33% of acreage in North Carolina, South Carolina, and Virginia during the 2016 growing season.

Growers were asked through an anonymous written survey to provide information relative to: (1) peanut acreage and yield, (2) tank size, (3) boom width, (4) spray pressure, (5) nozzle selection, (6) ground speed, and (7) whether or not they designated sprayers for different crops. A total of 237 surveys were completed with 174, 40, and 23 compiled from North Carolina, South Carolina, and Virginia, respectively. Growers were orally asked to provide the maximum number of products they put in the tank at one time (n = 79 across all states). Small hand tools used for spray equipment were raffled at each meeting to encourage participation in the survey. The percentage of growers using a practice was determined and the average number calculated. Pearson correlation coefficients were also determined. Size of spray tanks and boom width are also provided for distinct categories given they are manufactured in discreet units. Based on estimates that growers make 12 applications during the growing season with respect to micronutrients, pesticides, and plant growth regulators, the amount of time spent applying these materials was determined using average ground speed, boom width, and acreage.

Average spray volume was 16.7 gal/acre with a range of 10 to 28 gal/acre (data not shown). Spray pressure ranged from 20 to 90 psi with an average of 48 psi (data not shown). Average tank size was...