## Determination of Peanut (*Arachis hypogaea* L.) Yield Potential by Geographical Location and Planting Date in Georgia

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The use of crop models to predict yield have become increasingly popular in agronomic crops. To implement a crop model for peanut in Georgia it is imperative to understand the effects of geographical location in the state and planting date on yield. The objective of this study was to determine yield potential of peanut by geographic location and planting date in Georgia using a survey. Survey data consisted of latitude and longitude, planting date, row configuration, irrigation method, variety, digging date, yield, and grade for each of the selected fields. Growers were also allowed to leave specific comments about the field allowing for the explanation of low yields. Data collected showed that over 90% of the fields were planted to Georgia-06G in 2017 and 55% of the fields were irrigated. Planting dates ranged from April 15$^{th}$ to June 7$^{th}$ with yields ranging from 2921 kg/ha to 8376 kg/ha. Initial results using linear regression do not show a significant correlation between yield and planting date. Therefore, to improve the model, surveyed fields were segregated based on irrigation practices (Irrigated and Non-irrigated) and then modeled using multiple regression to determine combined effects of planting date, row pattern, growing days, and row configuration on yield potential. The addition of other variables, especially geographic location and growing days, did improve the model but not significant. To further understand the impact geographical location has on yield potential regarding planting data, geostatistical techniques will need to be conducted.

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