

Development of a Web-Based Platform to Monitor Crop Stress in Peanuts Throughout the Growing Season.

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The Peanut Health Network is a web-based peanut (*Arachis hypogaea* L.) management support system built to assess plant health throughout the growing season using Peanut Rx as an initial monitor of risk. The purpose of the Peanut Health Network is to help peanut growers in Georgia understand how stresses throughout the season influence yield and grade across their farm and within a select field. Factors that lead to stress include (but are not limited to) water, initial disease risk, disease management, and production decisions. The grower can set up a farm and input initial factors for each field such as variety, planting date, row pattern, and crop rotation to determine their initial risk. Throughout the season the grower can also input management decisions like irrigation and fungicides applied to the crop. Along with the grower inputs, meteorological data from weather stations and vegetative indices derived from satellite imagery will be utilized to determine and monitor plant stress throughout the season. By compiling this information, a map at harvest can be developed for each field to assist in identifying healthier areas in the field and sections where yield and quality may be lower. The Peanut Health Network was used to follow the health of three fields in Coffee county during the 2018 growing season and a harvest map was created from the information. Pearson's correlation coefficients comparing mean near infrared values for each zone versus yield averaged 0.50 and comparing mean near infrared to total sound mature kernels averaged 0.77. These results show that by following the stresses in a field throughout the season and harvesting zones independently growers can increase overall quality of their crop. The Peanut Health Network is beneficial to growers as well as to industry by making informed management decisions during the season and at harvest resulting in the highest quality crop possible for his/her farm and for the consumer.