

Image analysis and regression modeling for peanut symptom identification

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Disease is one of the most yield limiting factors in peanut production. Several foliar diseases and disorders can be challenging to differentiate without practice. Providing a tool for fast diagnosis of foliar symptoms could potentially aid decision making by increasing the rate and accuracy of symptom identification and prevent wasted resources. The objective of this study was to use image analysis to provide peanut growers with a fast, easy to use, and accurate tool for diagnosing foliar diseases and disorders. Images of foliar peanut symptoms were collected and sorted by disease or disorder. Canopy images and individual cropped leaflets were processed in Batch Load Image Processor v.1.1. (BLIP), software developed by Clemson University. BLIP extracted colorspace data for each image pixel. For each image, binary symptoms were classified and recorded in a master database where 0 = absent and 1 = present. Data were analyzed using regression techniques using JMP Pro 14 to determine the parameters for each respective disease model. Model results and potential for implementation will be discussed.