Evaluating the Potential of Variable Rate Fungicide Application to control Sclerotinia blight.

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Profit margin has continued to decrease in southwest peanut (Arachis hypogaea L.) production over the last several years. The most logical ways to increase profit margin is to either increase yields or decrease inputs. Precision management technologies have been adopted relatively slow in peanut production. Fungicide application is the largest expense in many peanut fields, especially in Sclerotinia blight (Sclerotinia minor) infected fields. Use of current technology may allow for targeting fungicide applications to control Sclerotinia. The objectives of this study were to 1) determine the potential of using active sensors, in-season, to determine variable rate applications for control of Sclerotinia and 2) determine the potential for using past season aerial imagery and other data layers to delineate fungicide management zones. Two separate Sclerotinia control trials were sensed at 2 to 3 wk intervals with a handheld GreenSeekerTM sensor to determine NDVI. In addition, two peanut fields in SW Oklahoma were identified in 2009 and aerial photographs were taken. Fields were grid soil sampled on 0.5 ac grid size to determine sclerotia densities throughout the field. Use of the GreenSeekerTM sensor was highly correlated with control of Sclerotinia and pod yield after October 1. Prior to this date, correlation in yield and NDVI was poor. Use of aerial imagery, elevation, and soil type appear to hold some promise in reducing fungicide application to control Sclerotinia.