# Modeling Soybean Phenological Development in Mississippi Using Field Data. (A03-zhang170338-Poster)

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### Abstract:

A phenological model was developed to predict vegetative (V-stage) and reproductive growth stages (R-stage) using 4 yr of field data at Stoneville, MS. The model contained two sub-models, V-stage and R-stage. Maturity group and planting date were selected as the best predictors using stepwise regression analysis. The R-squares were 0.990 and 0.975 for V-stage and R-stage, respectively. For the V-stage sub-model, the overall average residual of 800 samples was 2.5%, with 87.5% and 68.5% of samples having a residual value less than 5.0% and 3.0%, respectively. For the R-stage sub-model, the overall average residual of 588 samples was 4.6%, with 59% and 40% of samples having a residual value less than 5.0% and 3.0%, respectively. The model was further tested using field data in 2002. The mean difference between predicted and observed values was less than 3 d with a range from 0 to 6 d. Use of heat unit (or growing-degree-day) instead of Julian date, did not improve prediction.

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