

**EXTRACTING EQUATIONS AND PARAMETER  
VALUES FROM FIELD DATA**

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**Abstract**

Equations from controlled-environment experiments by Reddy et al. (1997) were used initially in the new ARS cotton model to describe plant development and growth. We anticipated the need to re-parameterize the equations from field data, but found that some equations contained too many parameters to fit with the available field data, and other equations were inappropriate for describing the relationships. New relationships were therefore developed from field data for rate of vegetative node production, rates and durations of leaf and internode expansion, and internode weight. The performance of the equations was verified.

**References**

Reddy, K.R., H.F. Hodges, and J. M. McKinion. 1997. Crop modeling and applications: a cotton example. *Advances in Agronomy* 59:225-290.