## Virtual Alfalfa: The Forage Management Tool of the Future. (A00-raines182627-Oral)

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## Abstract:

Grazing management, such as frequency and intensity, affect the morphology of species in a pasture. New computer models called virtual plants have been developed to gain a better understanding of how plant morphology is affected by the environment. A virtual model of alfalfa (Medicago sativa) growth and development under rotational and continuous grazing was previously developed using a mathematical program called L-systems. This model was developed using measurements from a small number of alfalfa plants. The yield and quality data included in this model was obtained from alfalfa literature. The goal of this project was to create a more representative virtual alfalfa plant model using measurements taken from many alfalfa plants in the field. Measurements such as number of shoots, number of internodes, internode length, and shoot angle were taken throughout the season. Yield and quality samples were also collected from the plants in the field. These new measurements, yield and quality data were incorporated into the existing Lsystems alfalfa computer model to produce an improved, more representative alfalfa plant model.

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