

IMAGEING METHOD TO MEASURE SUGARCANE PLANT GROWTH

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Abstract

Growth monitoring of Sugarcane plant is essential up to heavy soil stage. Measured growth index is useful for efficient Fertigation, Irrigation applications and to support the different decision. Algorithm is designed and tested for different growth models to measure the distance between lower end of the stem and +1 dewlap which is indication of apparent growth of the plant. The lower end of the plant is detected by adaptive template matching. The +1 dewlap identification is based on the curvature of its boundary. The angle between leaf tip and edge of the stem is calculated by using polyfit function of the MATLAB. The highest distance tip of leaf from lower end of the stem with angle greater than 20 is considered as the +1 dewlap. The results of the experiment are compared with physical measurement. The accuracy of measurement of the growth by algorithm is found to be greater than 99% and average deviation 0.027. Thus image processing is useful tool to measure the growth of the plant in agriculture.

Key Words : *Curvature, Dewlap, Growth, Image processing, Sugarcane.*

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