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Abstract

Leaf color is used as a guide for assessments of nutrient status and plant's health. So that a new method is proposed for the detection of Chlorophyll content based on the leaf color.

Based on green color present in leaf we can estimate the chlorophyll content in leaf. The proposed equation produced superior results with the true value of chlorophyll content measured in the laboratory compared with existing methods when applied in three types of papaya leaf (dry leaf, Tender leaf, healthy leaf).

References

- Mahdi M. Ali,Ahmed Al-Ani,DerekEamus and Daniel K. Y. Tan,2012. A New Image Proccessing Based Technique to Determine Nutrient in plants.
- Gaddanakeri, S. A. , D. P. Biradar, N. S. Kambar and V. B. Nyamgouda, 2007. Productivity and Economics of Sugarcane as Influenced by Leaf Colour Chart Based Nitrogen Management. Karnataka J. Agric. Sci. , 20(3): 466-8.
- Jia, L. , X. Chen, F. Zhang, A. Buerkert and V. Romheld, 2004. Use of digital camera to assessnitrogen status of winter wheat in the Northern Chinaplain. J. Plant Nutr. , 27(3): 441-50.
- V. K. Tewari*, Ashok Kumar Arudra, SatyaPrakashKumar,VishalPandey, Narendra Singh Chandel,2013. Estimation of plant nitrogen content using digital image processing
- Lopez-Cantarero, I. ; Lorente, F. A. ; Romero, L. 1994. Are chlorophylls good indicators ofnitrogen and phosphorus levels? Journal of Plant Nutrition. 17(6): 979-990.
- Lichtenthaler, H. K. ;Wellburn, A. R. 1983. Determinations of total carotenoids andchlorophylls a and b of leaf extracts in different solvents. Biochemical Society Transactions. 603: 591-592.
- Ommen, O. E. ; Donnelly, A. ; Vanhoutvin, S. [et al.]. 1999. Chlorophyll content of springwheat flag leaves grown under elevated CO2 concentrations and other environmental stresses within the 'ESPACE-wheat' project. European Journal of Agronomy. 10(3/4): 197-203.
- Reay, P. F. ; Fletcher, R. H. ; Thomas, V. J. 1998. Chlorophylls, carotenoids and anthocyaninconcentrations in the skin of 'Gala' apples during maturation and the influence of foliar applications of nitrogen and magnesium. Journal of the Science of Food and Agriculture. 76(1): 63-71.
- Noh H, Zhang Q, Shin B, Han S, Feng L (2006) A neural networkmodel of maize crop nitrogen stress assessment for a multispectralimaging sensor. Biosystems Engineering 94: 477-485.
- Pagola M, Ruben O, Ignacio I, Humberto B, Edurne B, Pedro AT,Carmen L, Berta L (2009) New method to assess barley nitrogennutrition status based on image color analysis comparison withSPAD-502. Computers and Electronics in Agriculture 65: 213-218.
- Pydipati R, Burks TF, Lee WS (2006) Identification of citrusdisease using color texture features and discriminate analysis. Computers and Electronics in Agriculture 52: 49-59.
- Shapiro CA (1999) Using a chlorophyll meter to manage nitrogenapplications to corn with high nitrate irrigation water. Communication in Soil Science and Plant Analysis 30: 1037-1049.

Index Terms

Computer Science   Applied Science