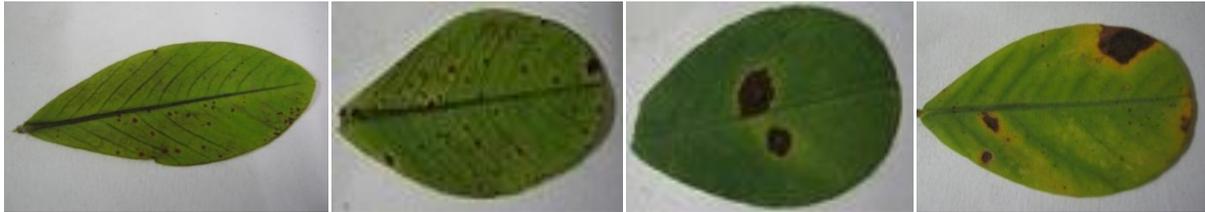


Detection of Deficiencies in Groundnut Plant using Geometric Moments



A research paper articulated by students of electronics and telecommunication department has been selected for oral presentation at an international conference to be held in Bali, Indonesia. **The conference is ICABBBE** (International Conference on Agricultural, Biotechnology, Biological and Bio-systems Engineering) which is organized by World Academy of Science. Sumeet Nisale, Chandan Bharambe, the student authors of the paper were guided by Prof.V.N.More of EnTC department. This is one of the very few papers which have application of an engineering technology on agriculture.

The abstract of the paper is given below, which will give a brief overview about what the paper is:

Abstract: The study of geometric moments which detects the mineral asymmetry in the frail groundnut plant has been presented. One of the cash crops used as a major source for extracting cooking oil, is cultivated in almost every part of the world. This plant is prone to many diseases and deficiencies as a result of the variance in the soil nutrients. By analyzing the leaves of the plant it detects the visual symptoms that are not recognizable to the naked eyes. The paper has about 160 samples of leaves from the fields and has processed them. For the first time, it has been possible to provide the farmer with the stages of deficiencies with the help of image processing algorithms. Algorithms that calculate the average intensities and the affected area and geometric moment comparison tell us the stage of deficiency and type of the same at an early stage. Algorithms can be applied to any plant that shows the symptoms visually. This paper has applied the algorithms successfully to many other plants like Lady's finger, *Ghevada*, *Vaal*, Chilli and Tomato. But the paper submits the results of the groundnut predominantly. This will certainly create a kind of green revolution in the field of agriculture again and will be a boon to the field.