

UNEXPLORED IDEA TO EXAMINE GRAIN SPECIMEN QUALITY BY UTILIZING IMAGE PROCESSING INTELLIGENCE

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ABSTRACT

The significance of measurement of grain quality has been felt since way back to a century old. However it is tedious, but very important measurement is to measure the individual kernel's qualitative analysis. Analyzing the grain sample manually is more time consuming and complicated process, and having more chances of errors with subjectivity of human perception. In order to achieve uniform standard quality and precision, machine based techniques are evolved, solely on its prime advantage of reproducing the same qualitative result efficiency again and again. Recent developments in the field of image processing, has opened up wide scope of its use for sample analysis too. Various applications of Image processing are seen in the field of agriculture, biomedical engineering, food and drug industry and many others. Food application mainly caters the qualitative aspect of various food and dairy products.

In this article, an attempt is made to investigate techniques used for the quality analysis. The main attempt is to compare relative applicability of human v/s machine based approach of analysis. Machine based techniques can be further classified as, offline grain analysis technique and online grain analysis technique. Both techniques are having their own limitations. Offline techniques consumes more time for sample preparation. On the other hand, online techniques suffer from less processing speed and kernel missing part while processing. Research gaps are identified with respect to the both techniques' limitations and new intelligent and accurate grain analyzer technology is evolved to enhance speed and accuracy by removing deficiency of the existing systems. Moreover offline and online grain image analyser features can be combined and enhanced to prepare a fully automated grain analyser to deal with different kind of grain varieties.

KEYWORDS: Feature Extraction, Grain Analysis, Image Acquisition, Image Processing, Quality Analysis