Indian geeks develop algorithm to grade fruits

By Dinesh C Sharma

New Delhi, April 27 (India Science Wire): Just imagine deploying latest techniques in image processing to know if a fruit is of good quality. A couple of Indian computer scientists have just done this by developing an automated defect detection technique for fruits.

Shape, size, colour and texture are important grading parameters to find quality of a fruit. One of the major tasks in post-harvest processing of oranges is classification of fruits based on their external appearance and determination of skin defects. Manual quality check for grading of fruits is subjective, time-consuming and inefficient, particularly when dealing with large quantities of fruits.

Researchers at the Department of Computer Science and Engineering of Annamalai University in Chidambaram have developed a new technique based on image processing for automated quality check of fruits based on colour and texture features of fruits. They took a set of healthy oranges and another of oranges with skin defects and developed a database of images, with a series of attributes. They deployed an image processing tool known as 'grey level co-occurrence matrix' to develop the new algorithm for fruit checking.

"We used image analysis techniques to classify orange fruits into two commercially grading stages, which successfully extract useful and meaningful features to uniquely represent external surface for classification purposes," researchers observed in their study, which appeared in scientific journal *Current Science* this week. They suggest that the technique could be useful for detection of skin damages on other fruits as well in future. R Thendran and A Suhasini are co-authors of the study.

Orange is the third most important tropical fruit crop in India, after mango and banana. After harvest, fruits are shifted to packing plant for analysis of various quality parameters which determine price and destination. Orange grading is generally carried out based on external visible criteria such as size, shape, colour and texture of the fruits. (India Science Wire)