Development of an NIR Sorting Machine, an Experimental Study in Detecting Internal Disorder and Quality of Apple Fruitpple Fruit

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Abstract : The quality level for fresh fruits is very important for the fruit industries. In presents study, an automatic online sorting system according to the internal disorder for fresh apple fruit has developed by using near infrared (NIR) spectroscopic technology. The automatic conveyer belts system along with sorting mechanism was constructed. To check the internal quality of the apple fruit, apple was exposed to the NIR radiations in the range 650-1300nm and the data were collected in form of absorption spectra. The collected data were compared to the reference (data of known sample) analyzed and an electronic signal was pass to the sorting system. The sorting system was separate the apple fruit samples according to electronic signal passed to the system. It is found that absorption of NIR radiation in the range 930-950nm was higher in the internally defected samples as compared to healthy samples. On the base of this high absorption of NIR radiation in 930-950nm region the online sorting system was constructed.