

Name of product : Rapid Detection Techniques For Determination Of Alkaloid Level In *Dioscorea hispida*

Researcher details

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Faculty : Agriculture, Biotechnology and Food Sciences

Cluster/Area of study : Automation and Agriculture Mechanization

Status of the product : patent pending

Product description : *(Not more than 500 words)*

The advancement of technology introduced should benefit mankind in the most important area; agriculture. The significance of agriculture and plant is mentioned within eighty three verses of the righteous book, Al-Quran. Scientific study on poisonous food agricultures e.g. *Dioscorea hispida*, *Manihot esculenta*, *Prunus cerasus* shows that their roots contains alkaloid which can only be consumed after the toxic constituent is removed. This study introduced the potential of microwave in determination the amount of alkaloid in root tubers. FieldFox Radio Frequency Analyzer is used at laboratory study while a handheld Spectrum Analyzers is used on actual field work condition. Both microwave devices are used to measure the coefficient permittivity of microwave level at root tubers surface using mechanical probe followed by chemical process to determine the alkaloid level in root area. The result show there is a correlation between microwave level and alkaloid content with high regression correlation. The analyses of the data show that the alkaloid level in various layers is slightly differ. Microwave device is grouped as non or less destructive method fairly thereby reducing costs, non-hazardous, and also non-invasive and therefore may be preferred in the food industry and security for the beneficial of the mankind.

Picture of the product : *(Attach in JPEG/GIF format)*

