COUNTING COCONUT MITES USING DIGITAL IMAGE PROCESSING

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The coconut mite is a serious pest of coconut in the world. The researchers who are involved in finding methods to control them require to estimate the mite population in nut samples for their investigations. The method presently used to estimate the total population on a nut is by washing the population in a nut using a detergent solution and counting the number of mites in a small sample of the wash by viewing through a microscope.

Counting of objects such as coconut mites manually by observation through a microscope is a tedious and time consuming task especially because each sample dish contains hundreds of mites. Therefore, digital images acquired through a microscope using a commercially available digital camera were used to develop a software system to perform the counting operation automatically. This required the use of several image processing algorithms to process the images and identify objects. The magnification level of the microscope was very critical for the accurate identification of the mites. Therefore, it was necessary to limit the use of this technique of processing to images with one or two magnification levels.

The selected images were processed using the software written in Visual Basic. The developed system was capable of producing a count, which was comparable with manually counted numbers by experts in this field.