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About this paper



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Abstract

This paper presents an attempt to utilise an image processing technique for automatic detection of the infestation stage of borer pest attack in cashew tree. Earlier numerous studies have employed various image processing techniques and achieved different RGB models for determining plant stress due to invasion by pathogens and also for monitoring the general plant health (Estimation of N and lipids). However, the techniques were focused on the detection of diseases with symptoms of deformations in plant parts (consumed or inhabited by pest or microbes) like leaf or stem, which are even visible. On the contrary, in case of cashew stem and root borer, its *modus-operandi* is such that there are no visible (external) indications of its attacks, even though it has been tunnelling inside the trunk. Also, the recovery measures viz. applications of chemicals become unsuccessful when the boring in the trunk circumference is more than 50%; this calls for immediate control action, discernibly through detection at early stages of the borer attack. After tackling the problem statement by resorting to spectroscopic methods, we have hereby applied an RGB-based model to the images of leaves (for two cases of illumination scenarios: day-light and incandescent lamp, and two image capturing devices: a digital camera i.e. Panasonic LUMIX DMC-SZ10 and a cell phone camera) to analyse to possibility of identification of the pest attack.