plants [5]. The detection method can be used to automatically count small objects in complex and variable environments when combined with other image features. The handheld device can easily capture images containing rice plant-hoppers on rice stems. The surveyor can adjust the length of the pole and move the camera close to the rice stems using the extendable pole. The surveyor can use the mobile phone to control the camera via Wi-Fi to capture plant-hopper images on the rice stems without continuously stooping down and standing up and visually counting the plant-hoppers. These images are saved on an SD card in the camera in real-time, and the automated counting of the plant-hoppers in the rice images is achieved using three layers of detection. The detection methods achieved detection rate and false detection rate. This not only reduced labour intensity and visual fatigue in surveyors, but also improved the counting accuracy of rice plant-hoppers. The purpose of the software system is to automatically coutom