

Utilization of Digital False Color Small Format Aerial Photograph For Rice Plant (*Oryza sativa*) Damage Mapping due to The Rat Pest (*Rattus argentiventer*) Raid

Wikan Jaya Prihantarto¹, Barandi Sapta Widartono²

¹Cartography and Remote Sensing Program, Faculty of Geography, Gadjah Mada University,

Bulaksumur, Yogyakarta, 55282, prihantarto@yahoo.co.id

²Cartography and Remote Sensing Program, Faculty of Geography, Gadjah Mada University,

Bulaksumur, Yogyakarta, 55282, barandi@geo.ugm.ac.id

Abstract: The aim of this research is to explore the capability of digital false color small format aerial photograph that flown using simple aircraft model as a data for rice plant (*Oryza sativa*) damage mapping, especially due to the rat (*Rattus argentiventer*) raid. This research also aimed to build the interpretation key for damage identification of rice plant using false color small format aerial photograph.

The research area controlled in the some extent of rice field that has a rice damage variation due to the rat raid. Researcher using a false color modified camera to capture those phenomenon. A number of helium balloons also used as a platform to flown it up. Resulted image quality relatively tested in some aspects; spectral characteristic, radiometric characteristic and geometric characteristic. Visual and geometric correction also applied to the image before it used as mapping data. The interpretation accuracy test did by comparing the resulted interpretation sample with field observation data.

The result of this research shows digital false color small format aerial photograph can used for rice plant damage mapping due to the rat raid. Texture and pattern were the main interpretation keys in rice plant damage identification. Although the capability of camera sensor modified so it can sense not only visible spectrum, but also near infrared spectrum, there is no significant difference in tonal and color aspect that enhance the image interpretability for this case.

Keyword: small format aerial photograph, false color, rice plant damage, rat pest