# COLOUR VISION IN PEST LEPIDOPTERA ?: THE SPECTRAL EFFICIENCY OF THE EYE OF *EPHESTIA CAUTELLA*

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The tropical warehouse moth, *Ephestia cautella* (Lepidoptera: Pyralidae), is the most widespread and abundant moth pest of stored products. It is thought that, as in many other insects, vision may play an important role in the location of food. The aim of this study was to investigate the ability of *E. cautella* to discriminate different wavelengths of light. Electroretinogram recordings show that the visual system of *E. cautella* responds most strongly in the yellow-green and ultraviolet (UV) regions of the spectrum. The peak of spectral efficiency in the green region is not uncommon among insects, and may be a employed by the moth during motion detection or during the orientation towards predominantly yellow-green pigmented plants containing nectar. A regional specialisation of the eye has also been revealed. The dorsal and ventral regions of the eye when compared with the equatorial region each show a greater efficiency to ultraviolet light. It is suggested that the high dorsal UV efficiency may be of importance in the general navigation of *E. cautella*, while the high efficiency of the ventral region may be used in the location of nectar sources via the detection of nectar guides, a common feature in flower feeding insects. This research shows that *E. cautella* has the capacity to detect light of different wavelengths and may provide an important insight into the location of natural food sources by *E. cautella* in their native environment.


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