



WPRS/SROP

3rd European Meeting of the IOBC/WPRS

Working Group

“Integrated Protection of Olive Crops”

Programme and Abstract Book

**Polytechnic Institute of Bragança – Portugal
October 10 – 12 2007**

ECONOMIC THRESHOLDS LEVEL FOR THE FRUIT GENERATION OF OLIVE MOTH, *PRAYS OLEAE* (BERNARD) (LEPIDOPTERA: HYPONOMEUTIDAE)

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The olive moth, *Prays oleae* (Bernard) (Lepidoptera: Yponomeutidae), is one of the most destructive pests of olive groves in the Mediterranean basin. In recent years, the interest in evaluating the economic importance of *P. oleae* has been increasing, being loss assessment essential to the development of integrated pest management programs (IPM). Reliable economic thresholds for the pest are associated to any IPM practice, since enables the growers to reduce the input of pesticides and even target their use, when necessary. The purpose of this study was to establish economic thresholds against the fruit generation of *P. oleae* (Bern.) in Trás-os-Montes region (north-eastern Portugal), where the olive moth is a key pest of olive (Bento *et al.*, 1997; Bento, 1999).

The study was carried out in olives of the oil-producing variety "Cobraçosa, Verdial Transmontana and Madural", grown on non irrigated conditions and without pesticide treatments for several years. Data of Cobraçosa variety were recorded every year from 1993 to 2006. Olive infestation was determined in 25 fruits taken from 25 trees selected at random in orchard, weekly collected, from the time of fruit setting until the end of the egg-laying period. Crop losses due to preharvest fruit drop were evaluated on 25 olive trees from fruit setting until harvest. A mathematical model is developed which aims to establish the economic thresholds for the olive moth in Portugal. The model takes into account several factors such as: cost and efficacy of spraying, environmental impact, expected yield, price and crop losses.

The percentage of fruits attacked by *P. oleae* was highly variable along the studied years, ranging from 27.5 % and 53.8 % in 1995 and 1993, respectively. Severe yield losses were observed due to the pest occurred in 1993, reaching 62.0 % of the total harvest.

According to the calculated thresholds, the control of the pest is justified when the attacked fruits reaches 20% during the years of high expected yields (about 6,000 kg per hectare) and 35% in the years of lower expected yields (approximately 1,000 kg per hectare) for the mean price practised in the region.

Key words: integrated pest management, olive, crop loss assessment, carpophagous generation