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Fax : 0030 28210 35001

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**ECONOMIC INJURY LEVELS FOR THE OLIVE FLY *BACTROCERA OLEAE* (GMEL), IN TRÁS-OS-MONTES REGION (NORTHEAST OF PORTUGAL)**

A. BENTO<sup>1</sup>, J. A. PEREIRA<sup>2</sup>, J. E. CABANAS<sup>1</sup>, A. PINTO<sup>2</sup> & L. TORRES<sup>2</sup>  
1 - Escola Superior Agraria de Bragança, Quinta Sta. Apolónia 5301 - 855 Bragança Portugal, bento@ipb.pt  
2 - Univ. Trás-os-Montes e Alto Douro, Quinta de Prados 5000 - 911. Vila Real Portugal, ltorres@utad.pt

The olive fruit fly, *Bactrocera oleae* (Gmelin) is a major pest of olives in the Mediterranean region. Present control methods against this pest rely on the use of wide spectrum organophosphorous insecticides. However, in the light of modern integrated pest control, insecticidal control should always be justified by a cost benefit study based on an accurate assessment of crop losses. Therefore, studies were carried out in Trás-os-Montes region (northeast of Portugal), to assess the losses caused by the olive fly and to establish economic injury levels for olive infestation by the pest. The experiments were conducted in an olive grove situated near Mirandela, on trees of the Cobrançosa, Verdeal Transmontana and Madural oil producing varieties, of about 30 years old, grown under non-irrigated conditions and without pesticide sprays for several years. Data were recorded from 1996 to 2001, for the Cobrançosa variety, and during 2000 and 2001 for the Verdeal Transmontana and Madural varieties. Olive infestation was evaluated by analysing samples of 25 fruits collected at random from each of 25 marked trees per orchard. Losses due to preharvest fruit drop were assessed by counting and inspecting the fruits that fell from 25 marked trees per grove. The economic injury levels were calculated comparing the average unit cost with the benefit expected from the treatment taking into account factors such as: cost and efficacy of spraying, environmental impact, expected yield, price and crop losses. The level of fruit infestation ranged from 16.3%, in 1998 to 98.8 %, in 1997. Losses due to preharvest fruit drop were serious in 1997, reaching 59.4 % of the total yield. According to the calculated economic injury levels larvicide sprays are justified when the percentage of infestation, in mid- September, is between 7.0 and 9.0%, in years of high expected yields (more than 3 500 kg/ha) and between 13.0 to 17.0%, in years of low expected yields (less than 1 500 kg/ha). Adulticide bait sprays are justified when the level of infested fruits is between 5.0 and 6.0%, for high expected yields and between 10.0 and 11.0%, for low expected yields.

Key words: integrated pest management, *Bactrocera oleae* (Gmel.), crop losses, crop yield, economic levels

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