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19.- Nitrogen fertilization can significantly reduce the incidence of the olive fruit fly.

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The olive fruit fly (*Bactrocera oleae* Rossi) is one of the most important pests of the olive groves. Its negative impact is manifested by yield reduction, due to the consumption of pulp by larvae and increased fruit drop, and loss of quality of the oil, due to oxidation phenomena. All cropping techniques that reduce the incidence of this pest are able to contribute to increase crop yield and improve olive oil quality and help reducing pesticide use. Nitrogen fertilization can greatly influence the development of the canopy and the productivity of the olive tree, although little is known about the effect of nitrogen fertilization on the incidence of this pest. Two field trials were conducted in rainfed olive groves during the years 2017 and 2018, one of the cultivar Madural and the other of the cv. Cobrançosa. Three (0, 40 and 120 kg N ha^{-1}) and four (0, 20, 40 and 120 kg N ha^{-1}) nitrogen rates were tested respectively in 'Madural' and 'Cobrançosa'. The results showed a very significant reduction in the level of pest incidence as the nitrogen rate increased, with the exception of 'Madural' in 2017, a year in which productivity was low as well as the overall level of pest incidence. In 2018, incidence levels varied between 60.7 and 12.7%, respectively in the N0 and N120 treatments in 'Cobrançosa' and between 70.7 and 46.7% in the treatments N0 and N120 in 'Madural'. The most fertilized treatments showed significantly higher yields in both cultivars in 2018, with the higher fruit load inducing increased water stress, with more wrinkled fruits at the beginning of autumn, and delays in maturation. Probably these were the causes which may justify the lower incidence of the pest in the treatments fertilized with the higher nitrogen rates.

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