SPATIAL PATTERN AND DISTRIBUTION OF *EUPHYLLURA OLIVINA* COSTA (HOMOPTERA: PSYLLIDAE) ON THE OLIVE TREE

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The olive psyllid, *Euphyllura olivina* Costa is a very common olive pest in all the Mediterranean countries. In this paper results are reported of a preliminary study on the distribution and spatial pattern for immature stages of this species on the olive tree, as a basis to develop accurate and efficient sampling plans for populations estimation. The experimental work was carried out from March to July, 1999 to 2002, in two groves located near Mirandela (north-east of Portugal) on olives of the Cobrançosa variety, unsprayed for several years and non-irrigated. Ten trees, selected at random per grove, were used for sampling and four twigs, about 30 cm in length were collected on a weekly basis during the above mentioned period, from each of the four cardinal points of each tree. Each branch was then divided into three sections of about the same length. Samples were examined in the laboratory under a binocular microscope and the insects were counted and classified by stage of development. The following stages were distinguished: eggs, early nymphs (first to third instars) and late nymphs (fourth and fifth instars). Taylor's power law was used to analyse the spatial pattern of the insect. The effects of cardinal position within trees where not consistent over time. However, in general, the south-facing side of the tree was preferred when compared with the other orientations (N, E, W) considered in this study. Also, the mean section of the branch was, in general, preferred relative to the basal or the apical. The spatial pattern of the insect fitted the Taylor's model. Slopes from the model were between 1.861 and 1.938 for the eggs, between 1.558 and 1.903 for the early nymphs and between 1.210 and 1.684 for the late nymphs, indicating that the populations were aggregated.

Index terms: olive psyllid, sampling, Taylor's power law.

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