THE RELATIONSHIP BETWEEN LAND COVER/USE TYPES AND THE DIVERSITY OF WEED AND CARABID BEETLES IN ORGANIC AND CONVENTIONAL AGROECOSYSTEMS

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ABSTRACT

Weed and carabid beetle (Coleoptera, Carabidae) diversity in organic and conventional agroecosystems, surrounded by different land cover/use types (i.e. agroecosystems, natural ecosystems, roads, irrigation ditches, etc.) was investigated. The studied agroecosystems were vineyards, olive-groves, and maize fields. For weed sampling the fields were divided into five equal rectangles and one sample was obtained from each rectangle. Carabid beetles, were sampled by pitfall traps, which were placed in four or five parallel lines in each field. Land cover/use types around the studied agroecosystems were recorded and roughly drawn. For weeds, carabid beetles and land cover/use types the Shannon's diversity index H' was calculated. The preliminary results showed that the highest diversity indices for land cover/use types were calculated in the conventional maize fields and organic olive-groves while the lowest in the organic maize fields. Diversity indices of carabid beetles were positively correlated with land cover/use types diversity indices, whereas there was no relationship between carabid beetles and weeds diversity indices or weeds and land cover/use types diversity indices.

KEY WORDS: Carabid beetles, Carabidae, Coleoptera, Diversity indices, Land cover/use types, Maize, Olive-groves, Shannon Index, Vineyards, Weed.