Analysis of spraying equipment performances in olive orchards

Souraya Benalia\*, Giuseppe Zimbalatti, Lorenzo M.M. Abenavoli, Antonio Fazari, Bruno Bernardi

University Mediterranea of Reggio Calabria, Department of Agriculture

Località Feo di Vito, snc

Reggio Calabria, 89122 (RC)

soraya.benalia@unirc.it

**Keywords.** Foliar deposit, ground loss, olive growing, plant protection product, sustainability.

**Abstract.** This paper was performed in the framework of the project "Eco-sustainable control of olive pests \_CEbiOl", and reports the outcomes of a study dealing with the evaluation of the equipment used to spray plant protection products in olive groves. Experimental tests were performed in an intensive olive orchard situated in the province of Reggio Calabria to determine under filed conditions according to machine operating parameters 1) foliar deposition, from both quantitative and qualitative point of view; and 2) ground losses. Hence, olive trees were sprayed with a food dye solution as to simulate a plant protection product application. Spray quantitative analysis was determined according to the colorimetric method using a bench spectrophotometer, while qualitative analysis was based on water-sensitive paper image analysis. A significant effect of the trial conditions was found at the p< .05 level on both normalized foliar deposit Dn (μl·cm-2) [F(2, 65) = 8.81, p = 0.000412 \*\*\*] as well as on ground losses [F(2, 25) = 3.931, p = 0.0328 \*].