



“Gheorghe Asachi” Technical University of Iasi, Romania



USE OF MESH WINDBREAKS FOR SOIL EROSION IN OLIVE GROVES IN SOUTHEASTERN SPAIN

**Carlos Asensio^{1*}, Francisco Molina-Aiz², Javier Lozano¹,
Alejandro López², Diego Valera²**

¹Department of Agronomy, University of Almeria. Almeria-04120, Spain

²Research Centre on Agricultural and Food Biotechnology (BITAL), University of Almeria. Almeria-04120, Spain

Abstract

We used windbreak nets to reduce erosion and sediment transport in a semiarid area. A 13x30thread·cm⁻² and 39% mesh net facing the wind increased average erosion reduction up to 72% at a height of 0.4 m in recently tilled olive groves. The use of sonic anemometry techniques for identifying wind movement patterns has rarely been exploited for improving field studies, and much less for windbreaks. Sample components collected in traps placed at different heights and distances from the windbreak were analyzed. A Principal Components Analysis was carried out analyzing the combined effect of height and windbreak distance on variables associated with the first two components. Component C1 identified the height at which data were obtained, while Component C2 identified windbreak distance from the sampling point. The effectiveness of this system is shown by the reduction in weight of material caught in traps, and is a cheap and reusable tool applicable after tilling.

Key words: dust traps, soil crusting, soil fertility, sonic anemometry

Received: February, 2019; Revised final: April, 2019; Accepted: April, 2019; Published in final edited form: November, 2019

* Author to whom all correspondence should be addressed: e-mail: casensio@ual.es; Phone: +34 950015519