



Evaluation of field performances of BEST sediment catchers in sandy loam soils of arid zone of Turkey

Mustafa Basaran (1), Gunay Erpul (1), and Oguzhan Uzun (1)

(1) Erciyes University, Faculty of Agriculture, Soil Science, Kayseri, Turkey (mustibasaran@hotmail.com), (2) Ankara University, Faculty of Agric., Department of Soil Science, Dıskapı, Ankara, Turkey

A need continues to exist for field-based measurements of aeolian sediment transport in aeolian research. Objectives of this study are to evaluate the field performances of newly designed sediment trap 'BEST' (Basaran and Erpul Sediment Trap) and compare it with commonly used Modified Wilson and Cook (MWAC) traps. Experiments were carried out at Karapınar Reserach Station of Konya Soil and Water Resources Institute over the 50x50 m tilled sandy loam plots. Experimental fields contained soils with 25.15% of particles less than 50 μm and 94% particles less than 0.84 mm and their Mean Weight Diameter (MWD) was 0.260 mm. BEST and MWAC traps were mounted over winged poles at 20, 40, 60, 80, 100, 120 and 140 cm heights in the experimental plots. Three wind erosion cases occurred during the experiments, and only a little amount of sediment was trapped by MWAC traps at 20 cm in all three cases while BEST measurements were sufficiently high to have vertical sediment flux and allowed to evaluate the sediment transport. Also, the amount of smaller particles than 100 μm trapped by BEST was considerable at heights greater than 20 cm. Consequently, a total amount of 292 kg ha⁻¹ sediment was determined by the BEST measurements over the experimental fields between March 26 and April 6 of the year 2010.

Keywords: Wind erosion, BEST, MWAC,