

Water Interception by Crop Mulch *Avena strigosa* in Irrigated No-Tillage System

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Abstract

One of the difficulties of the irrigation management is determining the effective rainfall, that is, the water that is indeed available to the crops, due to the influence of the climatic factors and the soil characteristics, as the surface roughness, the composition and the amount of mulch. Objectifying the quantification of the interception and the water storage through mulching in an irrigated no-tillage crop system this work was conducted on a Ultisol in Santa Maria, RS, Brazil; in the agricultural year of 2013/2014 with *Avena strigosa* crop waste. The period of the evaluations was from 60 days, numbering nine events; in which three levels of mulch, (bare soil, 2 and 4 t ha⁻¹ of dry matter - DM) under three irrigation levels (4, 8 e 16 mm) in a micro sprinkler system, with a bi-factorial distribution scheme in three repetitions. The water content in the mulching were quantified before, 3; 6 and 24 h after the irrigations, collecting the mulch, randomly in the experimental units, with the assistance of a sampling board of 0.09 m² and the content of water in the soil, with sensors FDR installed in depths 0.00-0.10; 0.10 -0.25; 0.25-0.55 e 0.55-0.85 m. The content of water in soil from different levels of mulch, which received 4mm of irrigation, didn't diverge, suggesting a bigger specification of the soil profile when small doses of irrigation are evaluated. In relation to the water in the mulch, it is observed that three hours after the irrigation, the mulch has the same content of water it had before the irrigation, not having difference between the two mulches levels in the whole period evaluated. The water interception through the mulch drifted from 0.5 to 1 mm, in the treatments 2 and 4 t ha⁻¹ of DM, tending to reduce with time, considering the collections done thereupon the irrigations. The water interception through the mulch must be offset in an irrigation crop system in irrigated no-tillage, particularly as it is worked with low irrigation volume.

Keywords: irrigation management, no-tillage, mulch