



## Measuring and modelling interception loss by an isolated olive tree in a traditional olive grove - pasture system

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Water losses associated to the rainfall interception process by trees can be an important component of the local hydrologic balance and must be accounted for when implementing any sustainable water management programme. In many dry areas of the Mediterranean region where agro-forestry systems are common, those programmes are crucial to foster adequate water conservation measures. Recent studies have shown that the evaluation of interception loss in sparse forests or tree plantations should be made for individual trees, being the total value determined as the sum of the individual contributions. Following this approach, rainfall interception was measured and modelled over two years, in an isolated *Olea europaea* L. tree, in a traditional low-density olive grove in Castelo Branco, central Portugal. Total interception loss over the experimental period was 243.5 mm, on a tree crown projected area basis, corresponding to 18.0% of gross rainfall ( $P_g$ ). Modelling made for each rainfall event using the sparse version of the Gash model, slightly underestimated interception loss with a value of 240.5 mm, i.e., 17.8 % of  $P_g$ . Modelling quality, evaluated according to a number of criteria, was good, allowing the conclusion that the methodology used was adequate. Modelling was also made on a daily basis, i.e., assuming a single storm per rainday. In this case, interception loss was overestimated by 12%, mostly because 72% of all rainfall events lasted for more than a day.