

Abstract

This paper reports the results of experimental and model studies of the field drying process of forage composed of oats and vetches. Under Mediterranean conditions, the drying process was observed in two consecutive years. Different cutting dates, different mowers, with and without conditioners, and different raking treatments were compared for their effect on forage moisture content reduction during the haymaking process. Physically based models were developed to determine the influence of weather and operational factors, that have major influences on the drying process in the field of the whole swath, oats, vetches and "other species". Among the operational factors, the conditioning effect was always the most important in the prediction equations, modelling the whole swath field drying process. Raking 24 h after mowing also had a positive influence on moisture loss. Vapour pressure deficit and wind velocity were the weather variables that had the greatest influence on the drying process. In the equation developed to predict the drying of the swath components, the drying rate of oats was influenced by that of both the vetches and other species, and vice versa.