

## **Abstract**

From all forage crops, which together with meadows have a major contribution in ensuring the forage base,, alfalfa crop (*Medicago sativa* L.) occupies a position of great importance. This plant is distinguished by its forage value, high cultivation area and high digestibility, and from the point of view of farmers and world's agricultural sciences is considered to be the "Queen of Fodder Herbs". In order to determine the quality of alfalfa, a series of classical analysis for cellulose, NDF, ADF and ADL were performed. This paper proposes a simple and nondestructive technique for rapid determination of these organic substances, method called „Near Infrared Spectrophotometry” (NIRS). In this purpose samples of alfalfa (*Medicago sativa* L., variety Eugenia) were obtained at the Experimental Teaching Station, Mănăştur and Cojocna Farm, in the years 2008-2009. Alfalfa crop was seeded by randomized block method with two experimental factors. The highest content of crude fiber, NDF and ADL was recorded on the phenophase of seeds formation (33.21%, 70.31% , respectively 15.15%). The lowest content recorded (31.14%) was the ADF content during the phenophase - seed formation. Good results (successful results) were obtained for the calibration of NIRS device (SEP = 1.058 [CF], 0964 [NDF], 1041 [ADF] and 1209 [ADL]). This system allows us to use NIRS technique for determining organic matter derived from alfalfa to feed and for other feed quality determination.

**Key words:** NIRS, alfalfa, crude fiber, NDF, ADF, ADL.