

OPTIMIZING ALFALFA FORAGE PRODUCTION: ASSESSING THE EFFECTS OF CUTTING INTERVAL AND CUTTING HEIGHT ON FORAGE YIELD AND NUTRITIVE VALUE IN AGING ALFALFA STAND

Sulav Dhakal, Clint Beiermann¹, Anowar Islam²

ABSTRACT

Alfalfa (*Medicago sativa* L.) is a major forage crop worldwide known for its adaptability to diverse climatic conditions and the ability to produce high quality forage. Studying the relationship between biomass yield and nutritive value of alfalfa, as a function of harvest management practices, can provide valuable information in optimizing alfalfa production. In 2023, a trial was initiated at the University of Wyoming Sustainable Agriculture Research and Extension Center near Lingle, WY to investigate the effects of cutting interval and cutting height on forage yield and nutritive value of aging alfalfa. A 13-year-old alfalfa stand was used for this study. The study was laid out as a split-plot design with three replications: cutting interval (21, 28, and 35 days) as main plot and cutting height (5, 7.5, and 10 cm) as sub-plot. The first cutting was made on June 12, 2023, for all treatments followed by subsequent cuttings with the assigned treatments. Preliminary data showed that cutting interval and height influenced forage dry matter yield. Season total alfalfa yield was greatest at 21-day interval at 5 cm and 7.5 cm cutting heights (11,900 and 11,100 kg ha⁻¹, respectively), and the 28-day interval at 5 cm cutting height (11,800 Kg ha⁻¹). Increasing the cutting interval increased the acid detergent fiber while decreased crude protein and total digestible nutrients at the second harvest. Crude protein at the third cutting was highest at the 21-day cutting interval when cut at 5 cm height. Overall, attaining the highest nutritive value, at the second cutting, required cutting intervals of 21 or 28 days. Cutting height influenced total yield while having minimal effect on nutritive value.

¹ Sulav Dhakal, Clint Beiermann, Department of Plant Sciences, University of Wyoming, Laramie, Wyoming

² Anowar Islam, ²Departments of Plant and Environmental Sciences and Extension Plant Sciences, New Mexico State University, Las Cruces, New Mexico

In: Proceedings, 2023 Western Alfalfa & Forage Symposium, Sparks, NV, December 12-24, 2023, (<http://alfalfa.ucdavis.edu>).