

Defining small grain forage production in western North Dakota Year 1 Summary

C.J. Hatzenbuehler¹, W.W. Poland², P.M. Carr², L.J. Tisor², and C. Smith¹

¹ Department of Agriculture and Technical Studies,
Dickinson State University

² Dickinson Research Extension Center,
North Dakota State University

Abstract

The objective of this study was to characterize small grain production in western North Dakota at the producer level. Forage samples (n=110) were collected from 12 different counties in the fall of 2002. Producers submitting samples were asked to complete a questionnaire regarding each sample. Samples were analyzed for concentrations of crude protein (CP) and acid (ADF) and neutral (NDF) detergent fiber. Total digestible nutrient concentration (TDN) and relative feed value (RFV) were calculated using standard methodologies. Out of the 110 samples, there were a total of 30 small grain samples (12 barley and 18 oats). In general, producers of small grain forage used fertilization (80%), a swather to cut forage (90%) and a round baler to harvest forage (89%). Only a small proportion of producers used either weed (27%) or pest (0%) control. In other samples, the most common pest reported and controlled was alfalfa weevil in alfalfa. Harvest time was most commonly described as all day (62%) followed by late morning and afternoon (31%). Physiological growth stage at harvest was really important in this study. In general, a soft dough stage of development was most common (33%). However, while barley was mostly cut at a soft dough (42 vs 27% for barley and oat, respectively), oat was most commonly cut at either a milk or heading stage of development (8 vs 33% for barley and oat, respectively). Dry matter yield (1.18 vs 1.24 ton/ac; P=.81) and CP concentration (11.0 vs 12.0%; P=.32) did not differ between oats and barley forage. Concentrations of ADF (36.1 vs 31.1%; P=.02) and NDF (58.1 vs 51.6%; P=.01) were higher in oats than barley. Furthermore, TDN concentration (60.8 vs 66.1%; P<.01) and RFV (98.5 vs 119.9%; P<.01) were lower in oats than barley. In summary, production characteristics of small grain forage are similar between oats and barley. At the producer level, dry matter yield and CP concentration did not differ between oats and barley. However, differences in fiber and energy concentrations would indicate barley forage being of higher quality than oat forage.