

## UTILIZING GRASS SEED RESIDUES AS A WINTER FEEDSTUFF FOR BEEF CATTLE

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Several studies have been conducted or are planned in the near future to evaluate the efficacy of using grass seed residues as a winter feed for beef cattle. The overall objectives of these studies are; 1) to accurately define the nutritive value of grass seed straws relative to traditional meadow hays and 2) to evaluate strategies which optimize the use of the straw, minimize the use of supplements while still maintaining an acceptable level of beef cattle performance.

One study has been completed (see research reports section) and three others are currently in the concluding stages. Two of the concluding studies focus on supplementation versus ammoniation as tools to increase the nutritive value of tall fescue straw. In experiment 1, 10 Hereford x Angus yearling steers were used in a dual latin square design evaluating a 2x2 plus one factorial arrangement of treatments. Treatments consisted of:

- 1). meadow hay plus + .45% body weight (BW) suncured alfalfa pellets
- 2). tall fescue straw
- 3). tall fescue straw + .45% BW suncured alfalfa pellets
- 4). ammoniated tall fescue straw
- 5). ammoniated tall fescue straw + .45% BW suncured alfalfa pellets

Results from this study will provide detailed information in regard to the nutritive value of supplemented and(or) ammoniated straw. Intake, digestion (rate, extent, and nutrient) and digesta kinetics will be variables of interest. In experiment 2, eighty-seven mature Hereford x Angus cows were stratified by age and body condition and randomly allotted within stratification to one of the following treatments: 1) meadow hay; 2) tall fescue straw plus 5 pounds of supplemental alfalfa hay and 3) ammoniated tall fescue straw. Weight and body condition is being monitored at the beginning, midpoint (day 56) and end of the feeding period (day 112). In addition, weight and body condition will be obtained prior to breeding and at weaning to address the influence of the previous winters nutritional treatment. Cow reproductive efficiency and calf growth rates will also be measured.

A third study was conducted at the Union Experiment Station evaluating the influence of various types of supplemental protein sources on the intake and use of tall fescue straw. Ninety-six mature Hereford x Simmental cows were stratified by age and body weight, and, allotted randomly within stratification to two replications of three treatments: 1) Biuret plus barley; 2) Soybean meal plus barley and 3) Corn Gluten meal plus barley. Supplements were fed on a daily basis at 5 pounds per head per day. Each supplement was formulated to provide an equal quantity of protein and

energy. Therefore, this study compares a nonprotein nitrogen supplement (1) with a highly degradable protein supplement (2) and a high bypass protein supplement (3). Measures of interest are similar to those described for experiment 2. Results from this study, as well as, the previously described studies will be included in the 1992 Livestock Day Report.

Studies tentatively planned for the future include an extensive survey of the grass seed residues available from the Willamette Valley and the Grande Ronde Valley. Numerous samples of residues will be taken corresponding to type of residue, variety of residue and location of straw and harvesting technique. Special emphasis will be placed on turf type tall fescue varieties particularly in regard to determining endophyte infestation and alkaloid contents. This survey will, therefore, provide valuable information in regard to the nutritive value of the various types of grass seed residues, in addition to, more clearly defining the potential of endophyte induced problems with turf type tall fescues.

- 1) meadow hay plus + 45% BW enriched alfalfa pellets
- 2) tall fescue straw
- 3) tall fescue straw + 45% BW enriched alfalfa pellets
- 4) ammoniated tall fescue straw
- 5) ammoniated tall fescue straw + 45% BW enriched alfalfa pellets

Results from this study will provide detailed information in regard to the nutritive value of supplemented end (or) ammoniated straw, intake, digestion rate, extent, and nutrient and digesta kinetics will be variables of interest. In experiment 2, eighty-seven mature Hereford x Angus cows were stratified by age and body condition and randomly allotted within stratification to one of the following treatments: 1) meadow hay; 2) tall fescue straw plus 5 pounds of supplemental alfalfa hay and 3) ammoniated tall fescue straw. Weight and body condition is being monitored at the beginning, midpoint (day 58) and end of the feeding period (day 112). In addition, weight and body condition will be obtained prior to breeding and at weaning to address the influence of the previous winter nutritional treatment. Cow reproductive efficiency and calf growth rates will also be measured.

A third study was conducted at the Union Experiment Station evaluating the influence of various types of supplemental protein sources on the intake and use of tall fescue straw. Ninety-six mature Hereford x Barmental cows were stratified by age and body weight, and allotted randomly within stratification to two replications of three treatments: 1) Barley plus barley; 2) Soybean meal plus barley and 3) Com Gluten meal plus barley. Supplemental were fed on a daily basis at 5 pounds per head per day. Each supplement was formulated to provide an equal quantity of protein and