

## MANAGING HAY AND SUPPLEMENT INTAKE IN WINTERING BEEF COWS

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Efforts to prevent or reduce transmission of bovine tuberculosis must involve potential interactions between cattle and wildlife at feeding sites. This includes management of hay and/or supplements presented to wintering beef cows. Objectives of this project were to determine whether processing hay (ground vs whole) or placement (in a structure such as a bunk or hay ring vs on the ground) affected the amount of hay consumed and wasted by wintering beef cows. Additionally, we were interested in determining whether supplement moisture (dry vs wet) or placement (piled or scattered within a structure or scattered without a structure) affected hay, supplement or total intake and waste by wintering beef cows. Two studies were designed and conducted as Latin Squares utilizing mature, pregnant, beef cows at NCROC, Grand Rapids. In Study 1, a total of 48 Angus cows were utilized in a factorial design where two levels each of two factors (hay processing and placement within or without a structure) were investigated over 10-d periods of observation. Treatments were delivery of hay in a ring or bunk either whole or ground, or on the ground as a rolled out bale or ground. In Study 2, a total of 54 Angus cows were utilized in an incomplete factorial design where two levels each of two factors (supplement moisture level and supplement placement as scattered or piled) were investigated over 10-d periods of observation. Treatments were delivery of grain screenings on a bunk or in an inverted tire, delivery of wet beet pulp on the ground, on a bunk or in an inverted tire. Cows were weighed after removing feed for at least 12 h to determine group body weights. Dry matter and energy required for maintenance was determined from NRC (2001) requirements, and feed offered was provided accordingly. In Study 1 or the control group in Study 2, cows had access to a protein, vitamin, and mineral tub to ensure that they met their needs of these nutrients. In Study 1, regardless of type of structure and processing, cows fed hay in structures wasted less feed than those fed on the ground. These findings confirm what we had suspected, cows that are given access to feed on the ground will waste more feed; approximately 5 lb DM/cow more than those fed in structures. In Study 2, cows fed no energy supplement consumed more hay than cows fed wet or dry supplements with the exception of cows fed corn screenings either in a bunk or tire. Similarly, hay waste was less by cows fed no energy supplement and for those fed hay and screenings or hay and wet beet pulp in a tire or on the ground. Surprisingly, cows fed hay and wet beet pulp in a bunk wasted 18% of the hay. Cows fed grain screenings had no supplement waste, while those fed wet beet pulp wasted as much as 22% of the beet pulp presented to them. Greatest waste was accumulated by cows fed wet beet pulp on the ground. Due to this, cows fed beet pulp on the ground consumed less supplement than those fed beet pulp in a structure. Interactions between hay processing and presentation and between moisture content of energy supplement and presentation determine the amount of hay intake and waste. Structures reduce waste, while moisture level of supplement increases waste.