

Highline's Feed Chopper™ Option

Highline® has been selling bale processors for many years and past surveys of farms in Western Canada have show that up to 49% of beef cattle producers use them in various conformations. With margins perennially low examining why the Feed Chopper™ option was introduced can help show it is a useful addition to the bale processor. The Highline® Feed Chopper™ is an option that can be added to a standard Highline bale processor. It consists of a secondary rotor fitted with 128 knives spinning at 3000rpm in a housing that is mounted on the right hand side of the machine. Material discharged from the flail drum in the main processing chamber can be diverted into the Feed Chopper™ housing, which then cuts the material to a shorter length before it is discharged from the machine.



A Nutritionist will formulate a ration for a category of animals which meets the needs of the average of the group based on production state and weather conditions. The herd manager watches the animals and determines if the ration formulated is producing the desired body condition. If Body Condition Score (BCS) is slipping then the animals may not be consuming the ration as it was formulated. If BCS is allowed to fall below 3.0 then the performance of the animal may fall resulting in lost profit. Keeping the animals eating the formulated ration means they are consuming all the nutrients they need according to their stage of production. As with last year the forages available to us are expensive and efficient use is best for the bottom line.

Characteristic of the low and medium quality forages are high fibre which has a limiting effect on feed intake. Generally a mature cow will eat 1.2 % of her body weight in Neutral Detergent Fibre (NDF) and this figure is reported on feed test results. NDF is a combination of all the cellulose, hemicellulose and lignin in the forage and so is convenient to use in ration balancing programs. Higher fibre forages slow rumen emptying and in this way restrict intake. In addition the cow knows what she likes and if the forages are delivered in the long form she will sort through and eat the higher digestible leaf material and leave the higher NDF portions. This works somewhat for heifers that have a higher energy and protein demand. When animals are not fed according to age the younger animals will sort through feed in an attempt to meet their nutritional demands wasting large amounts of feed which, while higher in NDF, can still be digested and produce usable energy and protein if it was consumed.

On this principle the chopper option for the Bale Pro® can be helpful. A cow chews forages until the average particle length is 10 mm to 11 mm then she swallows. By chopping forages to this approximate length less energy is expended by the animal and the shorter lengths reduce the ability of the animal to sort. Chopping also improves the mix quality in TMR rations and reduces the time to get a uniform mix lowering the hours of operation of the tractors and mixers for every day of feeding. Animals receiving these rations spend less time eating and more time ruminating and resting. The ruminal rate of passage of shorter length material is quicker since more forage surface area is available for rumen bacteria to attach and digest the forage. Ultimately chopping forages can increase net daily energy and protein intake as compared to long forages, improving efficiency of forage utilization¹. A quote from researcher Dr. Francis Fluharty, Ohio State, illustrates his position, "One way to make more of the cellulose and hemicellulose, the primary carbohydrates in forage, available would be to grind the forage and thereby increase the amount of carbohydrates available for immediate attachment by bacteria."²

This period of high costs of ingredients will pass but the principle of precision feeding is here to stay and Highline has tools to assist producers in the choice which best fits their operation.

¹Influence of Dietary Forage Level and Forage Coarseness of Grind on Growth Performance and Digestive Function in Feedlot Steers, J. F. Calderon-Cortes* and R. A. Zinn†, *Instituto de Ciencias Veterinarias, Mexicali, Mexico, and †University of California, El Centro 92243, J. Anim. Sci. 1996. 74:2310-2316

²Optimizing Performance of Cattle by Increasing the Digestion of Forages with Protein Supplementation Francis L. Fluharty, Ph.D. Department of Animal Sciences, The Ohio State University, Production bulletin.

Precision chopping with the Highline® Feed Chopper™ will:

- help the rumen bacteria process the diet by opening up the high fibre material.
- speed up the rate at which the diet leaves the rumen increasing the amount of food the animal can eat daily.
- homogenize the plant material in the windrow thoroughly mixing small and large particles.
- benefit medium and low quality forages most but allowing greater net daily intake of nutrients.

CORPORATE RUMINANT NUTRITIONIST

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