Improving Feeding Practices in Bison and Cattle

What are the advantages of letting animals select their own diets?

1. Don't need a nutritionist to balance the ration
2. Don't need to mix feed
3. Animals can meet individual needs
4. Animals of different size and age can be fed together
5. Improved feed efficiency
6. Take advantage of cheaper feeds when available
7. Less illness especially, acidosis

What should I feed my animals when offering a choice?

1. An energy source. Examples: corn, barley, oats, beet pulp
2. A source of protein. Examples: wheat-midds, distillers' grains, soybean meal, cottonseed meal
3. Roughage. Examples: alfalfa, grass hay, oat hay, corn silage, haylage

Mark Kossler feeds his bison wheat midds, whole corn, grass, alfalfa and oat hay. For more feed options see ***Nutritional value of feeds.xls*** under Resources in the Worksheets and Tables folder. You may also want to look at ***Understanding feed analysis.pdf*** in the same location.

How many choices should I offer?

At a minimum three, an energy source, a protein source and a roughage. If you're feeding good-quality alfalfa as your roughage, I suggest you offer a poor quality roughage as well. Good-quality alfalfa is too high in protein for cattle and especially, bison to have as their only roughage source. It actually makes a better protein source. Bison are excellent at utilizing poor quality roughage; use that to your advantage.

Most (and there aren't that many) feeding studies with bison offer them a choice between one hay and one concentrate ration but offering a choice of at least three foods may improve results. Offering even more choices may further improve performance. In a study with dairy goats, offering goats a choice of six foods rather than four resulted in higher milk yields and better feed efficiency. Researchers speculated that giving animals more choices in grains and high-protein feed sources might overcome any possible imbalances in nutrients supplied to the animal and/or rumen microorganisms. While the amount of nutrient supplied to the animal by the diet is important, how quickly or slowly a nutrient is released by digestion in different feeds also matters. Nutrient utilization is most efficient when nutrients are released at the same rate. Adding another choice will likely increase costs which needs to be considered before adding another feed.

How do I get my animals eating concentrates and avoid health problems?

Mark Kossler mixes grain, such as corn, with whole oats at first and then reduces the amount of oats until he's feeding only corn. He's had no problems feeding whole oats and, in his experience, bison eat oats readily. For cattle or bison, mixing grain with

chopped roughage and slowly reducing the amount of roughage will also work. Just watch for scours, animals off-feed, etc., as you're putting bison onto concentrates.

Can I change feeds to take advantage of lower prices?
Changing feeds is no problem. Just mix the new food with the old one for a week or two to help bison to accept the new food and to avoid any possible digestive problems. They'll rebalance their ration as needed.

How do I determine which feed is the best value?
Included in the worksheets and tables folder are two worksheets: 1) ***Feed costs calculator*** helps you estimate the cost of a feed or nutrient including: feed, waste, transportation, storage, and feeding costs; 2) ***What does that nutrient cost?*** Helps you compare the cost of a nutrient in different feeds but without the additional costs listed in the worksheet above. You can get the nutritional content of a feed from the feed tag or use ***Nutritional value of feeds.xls*** under Resources in the Worksheets and Tables folder.

When comparing the cost of nutrients in a feed, remember to compare the cost of protein (CP) in high-protein feeds and energy (TDN, DE, ME) in high-energy feeds. Roughages can fall into either category.

Can I save my worksheets?
Yes. After entering your data, select *save as* under file in the menu bar and save the file under a different name to refer to later. The worksheets are protected which means you can change the data in the worksheet but not the worksheet itself.

Is it best to wean my heifer calves or just leave them with their mothers?
In a year round grazing study, replacement heifers were weighed at two different times after 6 months of age. Heifers that were not weaned weighed about 20 lbs heavier than weaned heifers. Those weaned at 6 months of age had an 85% calving rate while those that were weaned naturally by their mothers had a 92% calving rate.

Remember bison aren't cattle
Cattle have been selected over time to perform well on high-concentrate rations and live in crowded conditions. Bison are roughage eaters and are not use to close confinement. When we feed them like cattle, performance drops and illness increases. You may be able to build fences strong enough to crowd them in a pen but decreasing space increases stress and leads to poor performance. By the way, cattle also perform better when they're given choices of foods.