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Feeding Cows

The grass in Montana is some of the best in the world. Cattle grow quickly through the summer, and gains are cheap. In fact, the whole romantic idea of cowboys and cattle drives began with trailing herds of cattle up from Texas into the rich prairie grasslands to fatten through the summer before being shipped by rail to markets in the east.

In those early years, cows were rarely fed in the winter. So why is feeding standard practice now? Charlie Russell's painting "Last of the 5000" shows one consequence of a hard winter. And it has been well-demonstrated that the cost of feeding cattle is very cost-effective for increasing production of calves.

In the winter, the feed value of the grasses falls off, and snow can cover it over. So current practice is to cut and bale excess summer forage, for use in winter when feed is of lower quality and in short supply.

Ranch cattle in Montana are generally fed through the winter by daily throwing hay on the ground for them to consume. From a distance it may seem like another mindless task performed by a dumb cowboy, but an effective feed program takes more brainpower than most people understand.

There are a number of considerations in feeding a cow, and the first is when do you feed cows?

The answer to that question is whenever they are no longer getting enough grass to supply their nutritive requirements. If there is adequate winter grass, a cow may go all winter with just a protein and energy supplement. But the grass may be depleted, snow may cover it up, or weather may get so severe that the cows can't eat the grass fast enough to keep up with their energy requirements.

In stormy weather the cows may choose to stay in the shelter of brush rather than to expose themselves to the elements for a paltry feed of sparse grass. They will come out for hay, however.

The next question is how much do you feed them? The simple answer is – all that they can eat. You've given them just the right amount if they consume two-thirds of your offering before going for water, then clean up all but the spoiled or most course of the hay by day's end. But a more complete answer takes in a number of factors: weight of the animals, objectives of the task, available forage, and weather.

The place to start is with the maintenance requirement of the cow - about 2% of her weight per day. But a cow may be a little underweight after giving milk to her calf all summer, and we hope she has another calf growing inside of her. So if she is thin, she may need to add weight as the fetus develops – about 100# of gain before she calves.

So, a 1200# cow needs roughly 24# per day of hay to maintain her weight, plus another 750# of feed over the next 3 months to compensate for the fetal growth – an additional 8# of hay per day.

Cows starting the winter in good condition may be fed to simply maintain their weight – and since the calf is growing inside, a static cow weight will result in a loss of condition on the cow. The cow will likely regain that weight when she hits green grass, so many ranches feed to merely maintain cow weight through the winter.

What do we feed them? If hay is of decent quality, most of the cow's protein and energy requirements are provided hay, and no supplements are necessary. If plenty of grass is available, hay may not be needed. But the dry, brown grass available in the winter does not have the nutrition necessary to maintain a cow and grow the calf in her womb. A liquid feed supplement or a couple of pounds of barley-cake a day will be necessary to bring protein and energy levels up.

Hay comes in a wide range of quality. Straight grass hay may be 8-10% protein and 60-70% Net Energy. Earlier in gestation this may be adequate for her nutritive requirements. As the fetus grows, those requirements increase. Alfalfa/grass hay may be 10-15% protein and 70-80% net energy. After calving a cow needs better hay. Straight alfalfa may be15-20% protein.

Now throw in weather. Since Montana cattle mostly winter out in the open, they are subject to a range of temperatures and conditions. As the temperature drops below freezing, a cow burns more and more fuel just to obtain the calories necessary to maintain body heat. At 20^{o} below she may eat half again more feed – just to keep warm!

With her maintenance nutrition supplied by that 24# of green hay - or by dry grass and cake - a cow only needs additional roughage to generate heat. In fact, poor quality roughage actually gives off more heat of digestion and goes further towards keeping a cow warm. So in cold weather, straw is not only cheaper than hay, but *better* for keeping her warm. And the cows can bed down on whatever don't eat! Studies have shown that bedding on straw in cold weather can reduce feed requirements by 15%.

This weather factor is a serious component. If the heat that is drawn off by snow, wind, and freezing cold isn't made up by additional feed, it will be made up by pulling reserves from the cow's body – depleting fat stores, then muscle. Unless there are copious amounts of available grass, cows need extra feed on those colder days. I've seen where cows have eaten willow shoots as big as a pencil, trying desperately to consume enough roughage to keep them warm.

Only in a feedlot is it effective to feed cattle the same ration day after day. These cattle are given a belly full of a carefully calculated ration designed to achieve a precise rate of gain. They are already receiving all the feed they can consume, so they have both the intake and the reserves to withstand a bout of severe weather. The consequence of maintaining that same ration through cold weather, however, is a drop in their rate of gain.

Another question is <u>where</u> to feed the cows. This again, is subject to weather. On a cold, calm day they can be fed anywhere. When the wind is blowing they need to be fed where there is some shelter from the wind – along the tree-lined river, in a swale or coulee, behind a hill, or next to the brush.

If the ground is wet and muddy they should be fed on a sidehill, on a rocky knoll, in a place where the sod is unbroken, or early in the morning before the sun thaws the ground.

The cows will spend time on the feed-ground, and they will leave plenty of manure as evidence. It is best to move the feed-ground every day, to both provide a clean "table" for the cow's feed, and to distribute the fertilizer more evenly over the field. Wind and snow will limit your access to some parts of the field at times during the winter, so it's best to take advantage

of nicer days to spread the hay – and the manure - further from the haystack whenever possible.

And when do we quit feeding hay? When the cows stop eating the hay we are offering.

The new grass coming up in the spring is like candy for those cows. It is bright green, tender, and juicy. After a winter of dry hay, they are eager to get out and partake of that lush green growth. And the rancher is as tired of feeding that hay as the cow is of eating it.

But that new grass is short, and it's hard to get a belly full. It is mostly water. And it is fragile – the new grass is growing from root reserves that are easily depleted by early grazing. As tempting as it is to just turn the cows out, it is very poor practice.

Nutritive requirements for the cow are at their highest at the time right after calving and just before breeding. For most ranches that peak of nutritive requirements coincides with the first flush of green grass. And that first flush of green grass is the period when it can least withstand the pressure of grazing.

It is for this time that a rancher saves his best hay – second or third cutting alfalfa. Properly baled, this regrowth hay is rich, green, fine-stemmed, and tasty. It can have protein well in excess of 20%, and net energy approaching 90%. Second cutting alfalfa can entice those cows to eat hay for another couple of weeks – long enough for the new grass to grow up tall enough to sustain the cows, and to sustain itself.

Now I hope you can see that feeding cows isn't a simple as dumping hay on the ground. It is an art that is based on science. Anyone *can* do it, but it takes some thought and understanding to do it *well*.