



Editor's Corner

I recently attended the Feed and Fodder Conference in Red Deer and was treated with presentations ranging from feeding/grazing systems, aspects of business and risk management, new technologies, and so on. There were some real gems presented that challenged producers to think about how they're doing business now and what it will take to be successful in the future.

In this issue, I've brought forward notes from Dr. Susan Markus' presentation at the conference ... a checklist of feeding tips for cow/calf and backgrounding operators as they move through the winter feeding season. Susan has compiled her "top 20 tips" based on common questions

she's fielded on this topic as a beef specialist at Alberta Agriculture's Ag-Info Center.

Diane McCann-Hiltz will fill us in on his views on the feeder calf market in the "Market Watch" section.

In the "So What ...?" column, I've summarize the findings of an we've recently completed through the **AgriProfit\$ Business Analysis & Research** program on "Economics of Size in Alberta Cow/Calf Operations". The goal was to provide producers insights into whether or not "bigger is better, and the pro's and con's of going there.

Dale A. Kaniel, Editor

20 Tips to Make the Best Use of Your Winter Feed

Dr. Susan Markus
Beef Specialist

Feeding the breeding herd and, for that matter, backgrounders, is a fine balance between managing for low cost, appropriate nutrition and minimal waste. Over the past number of years at Alberta Agriculture's "Ag-Info Center" I've fielded many calls on beef nutrition and feeding systems. As I thought about these calls, a number of common questions and themes appeared. I thought these would make a handy reference list for Alberta beef producers so I've summarized them into a short list with supporting discussion points.

Quality and quantity of livestock feeds for the winter are equally important. However, all too often producers measure their winter-feeding program by the pounds of feed delivered to the animal. Types of feed ingredients, method of harvest, dry matter intake, and weather conditions all affect how well cattle will perform over the winter. Here are a few tips on cattle nutrition and feeding that can help you build the best ration and feeding system for your herd.

1. Balance Rations and Test Water

- Test feed ingredients, at a minimum, for moisture, protein, energy, Ca and P. Silage

with a pH over 5.2 doesn't keep very long so needs to be tested too. Deficient protein and energy result in low birth weights or weak calves and poor milking cows. Excess protein and energy are expensive and wasted.

- Feed for the requirements of the cattle, not how much they will eat.
- Periodically (every 3-5 years) have a chemical analysis of water sources. Mineral imbalances in water can interact with feed nutrients.

2. Estimate Feed Intake

- Feed intake will be dependent on feed quality and animal size and performance.
- Heavily pregnant animals cannot eat as much as dry or early pregnancy cattle. Older cattle eat more per unit body weight than younger cattle. DMI, as a % of body weight, can vary from 1.5% on straws to 2.75% on quality alfalfa hay.
- Newly weaned calves will have decreased intakes, so they need to be fed accordingly.

- Cold stress on cattle may increase dry matter intake because it increases rate of passage.
3. Estimate and Adjust for Feed Waste
 - Feed type and delivery method affects what and how much is wasted. Although tub grinders and hay shredders may reduce length of feed, fine material may be lost. The finer material may be the higher quality, higher protein portion of the feed.
 - Hay and greenfeed typically have a feeding waste of 15-30%. Grain and pellets have a waste factor of about 5%.
 4. Use Ionophores in Rations
 - Rumensin and Bovatec are approved for beef cattle. Rumensin provides increased feed efficiency (8-12%), increased rate of gain (5-15%), prevents coccidiosis and decreases acidosis and grain bloat.
 - Look for a \$2 to \$3 return for every \$1 spent on an ionophore. Bovatec is more expensive but acts less like an appetite suppressant compared to Rumensin. Cattle must have an adaptation period of about 5 days, after which they can be fed higher recommended rates.
 5. Limit Feed Cattle
 - When mature cows are not under cold stress, limit feeding can extend feed supplies.
 - Rumen capacity will adjust to the amount of roughage offered in a ration.
 - Focus on meeting the nutrient requirements of the animals. Intake levels can be adjusted when limit feeding cattle.
 6. Put Condition on Cattle Before High Demands of Pregnancy
 - The high nutritional demands of late pregnancy make it difficult to put weight on cows which are thin. Feed intake of lactating cows is 30-50% higher than pregnant cows.
 - Feed cows to gain weight when it is cheapest (fall weather) and when they are not heavy in pregnancy.
 7. If Cold Stressed, Feed Cattle Later in the Day
 - Some research suggests late afternoon feeding makes more heat available to them during and after digestion when they need it most.
 8. Be Aware of Mineral Imbalances When Feeding Cereal Crops
 - Heat increment of feeding will then be highest closer to the coldest part of the day.
 - Winter tetany can be a problem if feeding only annual cereal crops (greenfeed, silages or straw). It mimics milk fever in symptoms. Supplemental minerals are cheaper in the long run than treating downer cows or lameness due to mineral imbalances.
 - Supplement extra Calcium and or Magnesium to offset effects of high Potassium in annual cereal roughages.
 9. Don't Change Ration Ingredients Too Abruptly
 - High concentrate rations should be stepped up by no more than ½ pound per head per day.
 - Grain added to high roughage rations should be introduced gradually. Start with no more than 1/3 of the ration as grain. Ex. 600 lb feeder calves on 5.5 lbs grain.
 - Grain needs to be fed daily. Alternate day feeding of grains at high levels can result in acidosis or bloat.
 10. Limit Oilseeds or Fat Sources
 - Maximum fat in a ration for beef animals is 5 to 7% of the ration dry matter (tallow=177% TDN). Oil or fat is an excellent energy source, but price and storage of product has to be evaluated.
 - Oilseeds like canola (25% to 35% oil) or sunflowers, if fed at too high of levels will interfere with fibre digestion, but also lowers methane production. (Ex. 1400 lb cow eating no more than 3-4 lbs whole canola seeds.)
 11. Prepare for Mineral Imbalances When Feeding Canola
 - Canola roughage generally has high sulfur levels (up to 2.5%). Cattle require 0.4% sulfur.
 - Excess sulfur can result in PEM (polioencephalomalacia).

- High S interferes with Copper and Selenium so dilute a canola ration with low S feeds.
12. Test for Nitrates
- If feeds are suspicious (frosted greenfeed, heavily fertilized or manured annual cereal crops or heated greenfeed bales) test for nitrates.
 - Greenfeed bales which are low in nitrates can be dangerously high in nitrites if they heat. Nitrate conversion to nitrite can be deadly.
13. Feed Heated Bales Before They Mold
- If not high in nitrates, feed heated bales early.
 - Heated bales have less available protein and energy (CP requirements increase as the fetus grows in the uterus). Match the quality of the feed to the cattle requirements.
 - With time and changes in weather (chinooks), molds can develop and increase. Mold can be just as harmful if inhaled, as it is if digested.
14. Don't Process All Grains for Cattle
- Don't process oats and corn for mature, healthy cows. Increase in digestibility is at most, 10-15%.
 - Do process barley and wheat for cows if economics make sense. Increase in digestibility is 15-25%.
 - Don't process any cereal grains for calves under 600 lbs. (if intake is acceptable). Younger cattle chew feed more completely.
15. Don't Use Snow as a Water Source for 1st and 2nd Calf Heifers
- If feeding poor quality roughages to breeding females under 3 years of age, provide fresh water. First and second calf heifers are still growing plus maintaining a pregnancy, so protein and energy requirements are higher than mature cattle.
 - Snow is acceptable as a water source for mature cows and young cattle in good condition. Snow needs to be clean and not ice packed to be best utilized.
16. Limit Amounts of Urea in Rations
- Urea or other NPN sources should be limited to 0.5 to 1% of ration DM. Too much results in increased blood ammonia levels. Cattle need to be adapted to urea over a period of 10-14 days.
- Low energy rations (high forage, low grain) result in low urea utilization since ammonia will be lost in the urine. (Read labels on supplements since 32-12 protein supplements are better suited to low grain rations compared to 32-20 which is designed for high grain feedlot rations).
 - Do not feed urea to calves under 400 lbs as their rumens cannot handle the urea.
17. Convenience Feeds May Not Be Convenient for Your Wallet
- Protein is an expensive nutrient to supplement. If additional protein is not needed in the ration, certain products with protein in addition to minerals, and vitamins will be more expensive than supplementing only the needed nutrients.
18. Not All Cattle Have to be Bedded
- Winter bedding is not required if cattle have access to areas protected from the wind and are not wet or muddy/slushy.
 - Bedding is required if cattle are in a dry-lot and space is an issue and/or if no clean snow is available.
19. Choose Salt Sources Carefully
- Have only one source of salt fed free choice.
 - Mineral fed free choice and salt blocks free choice are a waste if put out together. Cattle tend to have either a salt craving or consume a product because it is sweet. If salt and mineral sources are separate, cattle may not eat required amounts of both, rather they will lick the salt and not the mineral.
20. If Using Cowbytes ...
- Don't underestimate cow weight or overestimate bale weights. There is up to 100 lbs difference in a condition score.
 - Default number for calf birth weight can be low for most herds (77 lbs). Typically, you should target for a calf's birth weight to be 7% of the cow's body weight (1350 lb cows having 92 lb calves).
 - Lactation month affects energy requirements. Milk production peaks at 12 weeks post calving.

Home Stretch

Feeding cattle is a fine balance. You want to feed cattle to perform, but to minimize the cost of getting this performance. Although this issue goes deeper than just what's put in front of your stock, feeding effectively within the system you use is a good first step. This checklist should serve as a helpful guideline for producers to get the most of the feeds they have on hand.

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- **Chart a course for future profits based on your business' strengths?**
- **Monitor your cow herd's performance over time, compared to yourself & your peers?**

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The logo for AgriProfit\$ is written in a blue, cursive script font. The dollar sign is stylized with a vertical line through it.

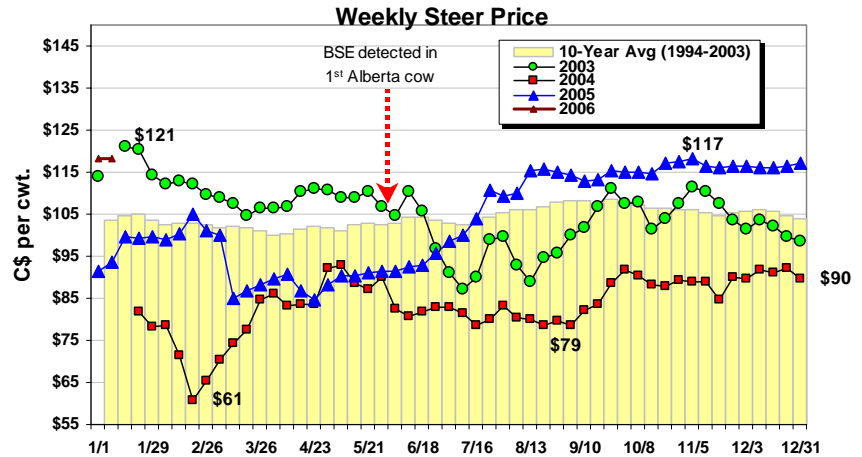
For more information on Alberta Agriculture's *AgriProfit\$* program, contact Dale Kaniel at:

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Market Watch

The Central Alberta pricing chart shows that feeder prices were well above historic prices since July 2005 when the border re-opened to Canadian exports of under thirty month cattle. In 2005, exports of feeder cattle to the US were just over 200,000 head. This pace of exports should continue if Canadian feeders are discounted significantly compared to US feeders. Any narrowing of the spread between US and Canadian feeder cattle should result in less US buyer interest here, and less movement of feeders south.

Central Alberta 8-900 lb. Feeders



Source: Canfax (ave. of midpoint of the range); Economics & Competitiveness Division, AAFRD

In the first week in January, the average price for central Alberta 8-900 lb feeders was about \$1.18/lb. Last week this price was unchanged. Feeder sales volume for the week of January 13 was almost 25,000 head. This is about four times the volume of the previous week.

Feeder volumes should increase for the rest of January and into February as the backgrounded calves come to market, putting some pressure on prices. This pressure will be particularly evident on the heavier types projected to finish in the summer period when prices for fed cattle are at seasonal lows.

On the feed grain pricing front, the provisional duty on corn imports from the US imposed by Canada could pressure feed grain costs. However, with the abundant supply of feed barley and wheat, the impact in Alberta could be minimal. The impact will be further marginalized if the Canadian Border Services Agency follows through on proposed exemptions to the duty for corn importers on the livestock/meat they export to the US.

Another factor to watch is the Canada-US exchange rate. The average exchange rate in 2004 was almost 77 cents and in 2005 it was about 84 cents. An increase in the Canadian dollar results in a decline in cattle prices.

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We'd like your comments and questions about the articles featured in this newsletter. Suggestions for future issues are also welcome. Please contact me:

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If you'd like to learn more about and/or participate in our research and business analysis program, please contact me at the above.

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If you're interested in the CowProfit\$ software, training or seminars, contact Jeff Millang at (403) 556-4326 (jeff.millang@gov.ab.ca)

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So What's ... The "Best" Size of Cow Herd for Me?

Cost of production pressures facing cow/calf operators have contributed to a trend in growing herd sizes. In order to maintain longer term profitability, some producers are pursuing size economies ... spreading their overheads over a larger number of cows. In many instances, this is linked to a change in production systems within their herds and at the farm level as well.

The *AgriProfit\$* team recently completed an economic analysis¹ that addresses a couple of key questions from Alberta cow/calf producers during a time when the pressure to seek out operational efficiencies is mounting ... that is,

- "how large should my cow herd be?" and
- "what are the key factors I should consider in moving to this new target size?"

The context for the analysis was not to prescribe that one "best" herd size. It was intended to show that there is some economic justification for the move to a larger herd size.

The second question drives at the notion that gaining cost efficiencies through larger herd size is based on more than just adding cows. It is presumably a function of the right combination of many operational/systems factors as linked to their related "overhead" costs.

Is Bigger Better?

Likely ... the analysis shows that there definitely are cost efficiencies associated with larger herd sizes.

Economists measure economies of size using an "elasticity" measure, Cost Elasticity of Size (CES), which indicates the percentage change in cost per percentage change in output. Figure 1 shows the analysis results with output (lbs. weaned) converted to a per cow basis. As long as the elasticity is less than 1, economies of size exist ... for every percentage increase in size, relatively speaking average cost decreases.

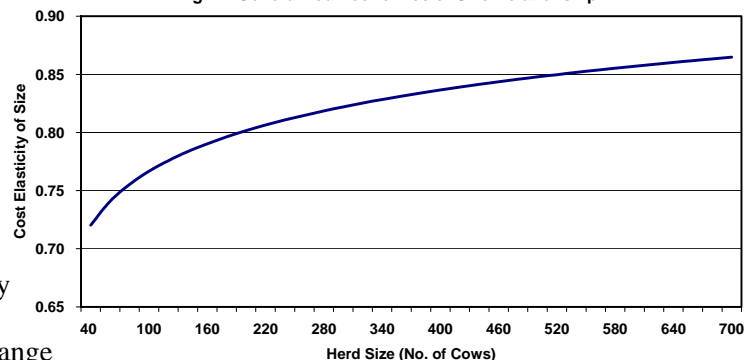
¹ Special thanks and recognition go out to the Agriculture and Food Council for the financial support provided for this project through the Innovation in Agribusiness Management Fund.

So what does the chart tell us?

- general gains from increased herd size are substantial up to about the 200 cow range,
- reasonable gains are available through to the vicinity of 500 cows.
- over the 500 cow mark, CES tends to flatten out. Although cost efficiencies may be available, the rate of improvement from increased size diminishes proportionately.
- CES was not projected to reach "1" over the range of herd sizes observed in the *AgriProfit\$* database, so a "maximum cost effective herd size" has not been defined.

The analysis suggests that the answers to the 2nd question, ie. key factors in defining an "optimal" size, have implications on what that size might be. The results indicate that a multitude of factors, based on individual farm strengths and weaknesses in productivity and economic performance, can drive out size economies. As well, the analysis focused at the enterprise level, so potential profitability and risk management benefits at the farm level, considering strengths and weaknesses of other farm enterprises, are not accounted for.

Fig. 1: Generalized Economies of Size Relationship



A technical bulletin on this analysis is posted on Ropin' the Web under "Economics & Business Management/Production Economics/Livestock". I invite you to take a look through the report, see how the "key factors" relates to your list, and analysis, of "what you do well". The assessment of "how big is best for you" starts out there.

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