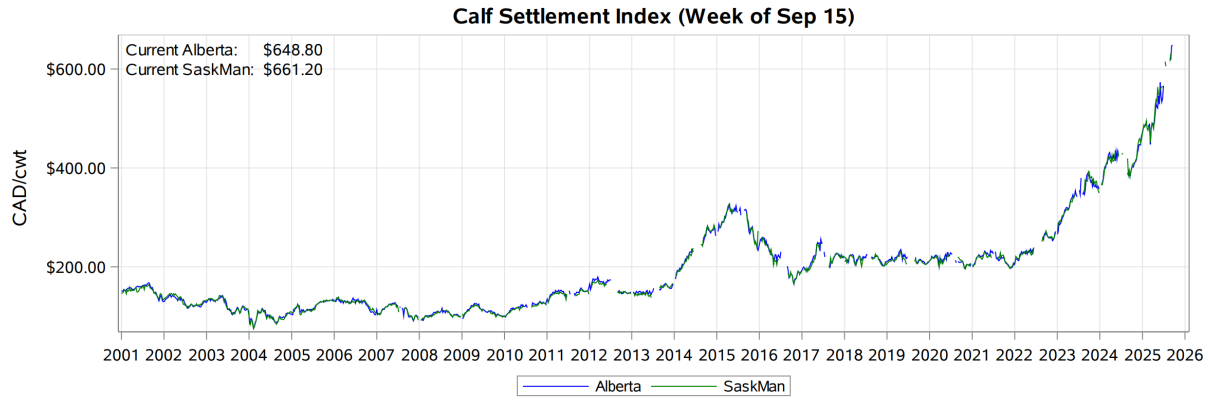
Is This the Year to Invest in Your Future Forage Production?

Most agricultural producers are aware of, or at least have heard of, the cyclical nature of various sectors in agriculture, even our Canadian Economy goes through a cycle of expansion, peak, recession and recovery (repeat). However, very few have been able to use those cycles to their advantage. There are many reasons for this, not the least of which is being too busy to notice and devise a strategy. Fortunately for those in the beef industry, CanFax is keeping an eye on the historical cattle cycle and providing statistics and analysis for beef producers to make informed decisions. The cattle cycle is generally 10 to 12 years long and while there are no guarantees on how and when the next phase of the cattle cycle will play out, this article is meant to be a prompt for producers to consider some options given our current position in the cattle cycle. Livestock producers in other sectors like dairy, sheep, bison, hogs, etc. also have cycles to contend with and must pay attention to and look for the opportunities and pitfalls that they bring.

*One question all producers need to address is, "**How will we prepare for what comes next?**". Planning your response ahead of time can open up opportunities, is generally more cost-effective and less stressful than being surprised and reacting to sudden shifts due to foreseeable cycles.*

Using the cattle cycle as an example, previous events such as BSE, more frequent droughts, and other factors have wreaked havoc on the beef industry over the last couple of decades and caused many producers to limit all sorts of input costs to stay in business. While it may have been necessary for survival in the short term, over the long term it can affect productivity and long-term economic sustainability. One common strategy during these times has been to stop or minimize fertilizer inputs on forage production and extend the time before rejuvenation of hayfields. As a result, there are many fields where productivity has significantly declined over time to the point where they may not be worth cutting. Removing hay from the field without returning an equivalent amount of nutrients either in the form of manure or fertilizer over the long term mines the soil, decreases the forage stand and soil health and is basically the equivalent of draining your ranch's savings account balance by withdrawing more than the interest it generates every year. It may get you through a rough spot in the short-term, but it is not sustainable in the long run, and you must find a way to replenish that savings account balance before it is worthless or starts attracting Non Sufficient Funds (NSF) or dormancy penalties.

During the last few years calf prices have risen significantly as can be seen in this long-term calf price graph from the Livestock Price Insurance Program:



While input costs have also increased (generally to a lesser degree), this substantial rise in prices has helped improve the profitability of cow-calf producers and allowed them to catch up with some high priority bills and possibly freed up some cash for reinvestment in their operations. It may also lead their accountants to suggest spending some money to reduce the producer's taxation burden in April. Consequently, many producers may be considering upgrading equipment to reduce their income tax bills. That may be a quick and easy way to spend that capital, but it can also cause them to incur loan interest costs into the future, as well as buy themselves additional long-term depreciation costs – a.k.a. "overhead costs" and potentially pay extra for tariffs right now. While it is undeniable that replacement of equipment is necessary from time to time, doing it only when necessary, can help reduce the urge to splurge on wants. At this stage of the cattle cycle with the next stage of lower calf prices around the corner many producers would be better off investing in things that reduce future costs or losses and/or improve production.

Instead of increasing annual overhead costs with equipment purchases/loans ahead of the inevitable downturn in the calf market which will reduce future profitability, some well-placed investments that affect future direct costs can help set ranchers up to become lower unit-cost of production producers as well as lower their income taxes as per their accountant's suggestion. In turn, that can help them maintain profitability even during most of lower prices in the next phase of the cattle cycle.

With feed being the largest annual direct cost on livestock operations it is the most likely candidate to provide opportunities for investments that maintain profitability. As always, the challenge is to provide only the necessary level of inputs, at the least cost, to get the best level of production without exceeding the 'marginal rate of return'*. Using some available capital in good years to correct issues that affect your forage productivity and quality can pay future dividends both in the health and resiliency of the forage and soil, as well as the health and productivity of your herd/flock, thereby improving revenues and profitability. Cash or Accrual tax reporting will affect when the purchases of inputs should be completed/claimed so discuss the timing with your accountant.

* **Marginal Rate of Return (MRR)** is defined as '*the ratio of the marginal revenue to the marginal cost*.' Basically, it is a financial indicator where the additional revenue expected from an additional unit of production is divided by the additional costs to produce that unit of production. An MMR of 2 (or 2:1) is profitable and indicates more can be produced at a profit, but an MMR of 0.8 (or 0.8:1) is unprofitable and indicates production should be reduced to preserve capital. Profit can be maximized by producing the number of units (i.e. lbs of calves or tons of hay – whatever you are selling), to the point where the MMR becomes 1:1 (otherwise known as the breakeven point) [*Ed. Note: This is the reason feedlots' Cost of Gain and Breakevens drive how much they are willing to pay for calves*]. From a forage perspective, the financial decision of how much fertilizer (manure or commercial) to purchase & apply is a prime example where this concept is applicable and should be used regularly.

Potential forage-related investments to reduce future costs or losses and/or improve production include things like:

1. **Providing appropriate nutrients to build up the soil's health & "account balance" over time and improve feed quality.**
   Whether in the form of manure, legumes, or a blended fertilizer balanced to address deficiencies identified in soil tests, ensuring that the necessary nutrients are there for optimum plant growth and health helps increase organic matter over time and improve the yields, longevity and resilience of that forage stand.

   CAUTION: Adding excessive nutrients all at once can lead to nutrient leaching/run-off and environmental issues so don't try to fix it all in one growing season. To help with your strategy, and keep costs to a minimum, know which nutrients are in short supply and how mobile they are.

   It all starts with assessing the health of the fields, reviewing their recent yields versus the potential yields given available moisture for that field, and sampling the soil & feed nutrient levels to identify the most limiting nutrient(s) that are affecting forage yield and quality.

   - Legumes fix N from the atmosphere and are way to provide "free" N to grasses in a good grass/legume forage stand that would otherwise require 100lbs N/acre to yield well.
   - Manure recycles the nutrients that were fed to livestock and can contribute greatly to yields and soil health; however, there's no ability to balance with the levels of various nutrients/micro-nutrients needed in the soil. Manures do have the significant benefit of adding organic matter which helps with water holding capacity and cycling of nutrients in the soil. Costs vary by source & proximity to where the manure is needed.
   - Commercial fertilizers generally have a higher cash cost than the other sources, but they are convenient and, most importantly, can be balanced/blended to address imbalances/deficiencies in specific soil nutrients and micro-nutrients that may be holding back crop yields.

2. **Renovation and reseeding of "tired" hay fields and pastures.**
If forage yields have dropped significantly from when the field was last established, either through age of stand, winterkill, droughts, lack of inputs, or legumes having dropped out of the species composition, and there is too much bare soil, it becomes apparent that more aggressive intervention is needed. When manure and/or fertilizer won't fix the issues and weeds are increasing, then renovation and reseeding is necessary to bring back the health and productivity of the forage stand and the soil and re-inject the economic benefits of legumes in the stand. Candid assessment as to the cause(s) and soil testing can set up the field for better health and productivity going forward. [Ed. Note: for more details & options refer to Section 3 of the BC Ministry of Agriculture and Food's *Livestock Drought Management Guide (August 2024)*].

   Costs vary significantly by renovation method and seeding rates, but the inclusion of at least one growing season of a cereal greenfeed crop can help with options for weed control as well as allowing decomposition of dead alfalfa plants to deactivate their auto-toxins which affect new alfalfa seedlings. Other cover crops can also be utilized to help bolster soil health and provide pasture or feed depending on the species seeded.

3. **Investing in your grazing management.**
Whether you want to invest in some new water development and/or electric fencing to help graze under-utilized areas of your private pastures or make the switch to a more intensive rotational grazing system, or switch to virtual fencing instead of building/replacing cross-fencing, it will require spending some capital on that infrastructure that can provide benefits and lower production costs for years to come. Hiring a qualified professional to help develop a formal grazing management plan can help identify opportunities that you may not have considered as well as what will (or won't) work for you on your operation, and the infrastructure needed to implement the plan. In addition, it can also improve your odds of a successful application to recent funding programs that are encouraging producers to adopt beneficial management practices that meet their criteria for reducing greenhouse gases.

4. **Liming your acidic soils to improve yields and/or ability to grow other forage crops.**
In some soils the pH inhibits the availability of nutrients, decreases the economic effectiveness of fertilizer and impairs growth of the forage crop. Of particular note, alfalfa is very sensitive to pH and generally will not grow below about pH 5.6. In one extension bulletin, Michigan State University states, "*Raising the pH from 5.7 to 6.5 in mineral soils may improve corn or soybean yields by 20 percent or more, and alfalfa yields by 35 percent or more*.", claiming that the economic return can be "*$5 to $10 for each dollar invested in lime*." [Note: these figures are from 2015 and no details on type or cost for lime were provided.] Providing cropping information and asking for a liming recommendation when a soil sample is submitted will provide an estimate of the amount of lime needed and possibly the yield expectations. Then finding sources & comparing prices landed at your farm/ranch will give you some solid costs to consider. Depending on your soils and precipitation it may need to be done again in 5 years or so, but in some areas/soils one application may be enough to get the alfalfa roots deep enough to bring up sufficient calcium from lower soil horizons that they begin to buffer the soils for themselves.

5. **Investing in hay/feed storage to minimize feed losses**
   Investing in a hay barn can reduce forage losses for 40+ years vs. a piece of equipment with newer bells & whistles that may last 15-20 years. Do some rough math to help you decide what's better for your operation:
   - Depending on your local climate, weathering losses for hay left outside & uncovered can easily exceed 15-20% especially when you can see 4-6 inches of weathered grey and/or moldy black material on your bales in the spring (the outer 5" of a 6ft diameter bale contains 27% of the bale and that percentage increases with smaller bale diameters). If you think that estimate is too high, prove it to yourself with your own data by marking and weighing 10 bales right after harvest and weigh them again in the following spring after you've peeled away all the spoilage (while you are at it take feed tests on those 10 bales after harvest & again in the spring).
   - Because you are feeding it out and don't store all of your feed for the whole feeding period take ½ of your average annual hay production and multiply it by 15% and 20% to get your range of average losses per year (e.g. 350 T/2 X .15 = 26.25 T and 350/2 X .2 = 35 T of loss/yr) [How many more animals could you feed with 26.25 to 35 T of hay??? And what would that mean for your revenues & cost of production???]
   - Take that range of losses and multiply it by the average price of hay in your area over the last 5 years (e.g. $250/T X 26.25T = $6,562.50/yr $250 X 35T = $8,750/yr) or take the highest & lowest prices to see the widest range of economic losses.
   - Multiply those dollar amounts you come up with for annual losses by the number of years you feel the cost of the barn should be covered by the reduction in losses and that will give you a reasonable amount for what you could spend on a hay barn to reduce weathering losses for future years. (e.g. $6562.50 X 12yr = $78,750 or $8750 X 12 yr = $105,000). After that payback period those savings are going directly to reducing your overall Cost of Production for the remaining economic life of that hay barn.
   - You also have options on what to do with those extra tons of hay – you can sell them for revenue, keep some over to reduce your risk of having to purchase feed in dry years, or carry more animals to utilize the feed and create more revenue when calf prices are on the rise in the expansion phase of the cattle cycle. There's also a risk management benefit if you've chosen to "FireSmart" the hay barn with metal roofing, siding & screening to keep embers from igniting your stored hay during wildfires.

If your accountant has suggested that investing in your operation can save you some money on income tax, don't just default to upgrading machinery, especially if it means committing to a loan and incurring future costs and depreciation. Make sure to have a look around at areas of production that may have been neglected during the tight times in the last cattle cycle and ask yourself if an investment of capital will reduce future costs, improve production or minimize losses. It will help decrease your Cost of Production in the long run.

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One-on-one support access

If you have questions and would like to follow-up with one of the authors for an individual appointment, please contact via one of the following to book a virtual appointment. When calling, please indicate whether you would like to talk about animal nutrition, forage management or economics/business decisions so that the administrator can best direct your request.

Phone: 250-573-3611
Toll-free: 1-877-688-2333
Email: drought@cattlemen.bc.ca

(Please note: these contact options will connect you with the BC Cattlemen's Association; however, appointment options are available to all livestock producers across BC and are not limited to cattle.)

Have any additional questions? Contact AgriServiceBC

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