



Highlights from the Western Canadian Grazing Conference

Volume 8
Issue 95
December 2012

FOR
AGE
MATTERS

The bi-annual Western Canadian Grazing Conference and Trade Show took place November 28th-29th in Red Deer this year. The trade show was well attended with wide representation from the businesses and organizations servicing and partnering with the attending graziers. The theme of this year's conference was "Grassroots of Grazing" with the relationship of soil fertility and life to plant growth, grazing success and the bottom line of the pocket book coming out as major themes. Here are some highlights:

Serving as an investment manager with U.K. based Caple Cure Myers for 15 years, **Logie Cassells** decided to get out of the world of theoretical growth and into the world of real growth: agriculture. In 2004, he made the move to Nova Scotia where he now runs a successful Haskap Berry orchard which is maintained through biodynamic practices and the application of **compost teas** up to three times every year. Mr. Cassells stressed that trace minerals are what make the real difference in soil health and successful plant growth and that a plant's ability to access and uptake these minerals is dependent on the microbial life in a soil. He offered the opinion that we are in the midst of a fourth agricultural revolution that will be based in biology and encouraged farmers and ranchers to capture a greater share of the value chain in this revolution and to invest in their ability to understand and partner with the life in the soil as a cost-saving tactic. To understand life in the soil, Mr. Cassells suggested that farmers require a biological test in addition to a standard mineral test that includes trace minerals. From there, a farmer will know which minerals need to be added and whether the balance of life in the soil needs to be shifted to fungal or bacterial domination. These additions can be made through the application of compost teas that are formulated to supply absent minerals and feed the appropriate microbial community.

Bill and Lorna Gibson run a successful 200 ewe flock on one quarter of land. Mr. Gibson spoke about his pasture rotations stating that paddocks are rested a minimum of 54 days every year and that through the careful management of nutrition and micronutrients, he is able to achieve gains that outperform a majority of feedlots. He uses his sheep to improve rough pasture and can depend on them to eliminate Canada thistle, as this plant, containing up to 18% protein, is a preferred treat for his flock. Mr. Gibson clips his pastures after the sheep have moved on to encourage growth and reduce internal parasitism as many parasites tend to climb to the top of a plant stem after being excreted but will not climb a second time after falling off.

Louise Liebenberg spoke towards how she manages **livestock predators** on her multi-species ranch near High Prairie—the first ranch in Canada to be certified predator friendly. Ms. Liebenberg provided a wealth of information on predator control, stating that killing a specific animal that is predating should be a last resort for ranchers and that an integrated approach to predator control is easily as effective as attempts to control the population through lethal methods. Two keys to controlling predation is to prevent situations that invite predation and to prevent interaction between livestock and predators. Water courses, bush, brush piles and dumps or areas of carcass disposal are all areas that predators are attracted to. Removing these areas from your land or limiting the time your livestock spend in proximity to them are both helpful tactics. Night-corralling, carcass removal and frequent shepherding are three other tactics successfully employed on Ms. Liebenberg's ranch. The most important predation management tool Louise uses are her Šarplaninac guardian dogs which have been shown to reduce predation between 11-100%. This vast range is due to different dog handlers, and she stressed that the right breed for the situation combined with proper training are essential for success. Ms. Liebenberg's final message was that the ecology of Canada requires large predators and that predation will never be completely eliminated. She identified a need for educational materials such as a best practices manual and a predator management plan designed specifically for the Western Canadian situation.

Dr. Christine Jones was a highlight for many of the conferences attendees. She skyped in from her native Australia, where she is a **groundcover and soils ecologist** and provided information that came as a shock to some but was all too believable for others. According to Dr. Jones, the nutritional content of many of our common foods has fallen dramatically over the last twenty years. She cited declines in copper, calcium and iron at 76%, 46% and 27%, respectively. This is surprising data because many of these elements are actually quite plentiful in soils. Dr. Jones said that the problem is that plants cannot acquire trace element which are tightly bound in soils and only become available in the presence of a highly-functioning microbial community. Of all the microbes in the soil, mycorrhizal fungi are perhaps the most important. These microbes have teamed up with plants to connect them underneath the surface of the earth

EVENTS

December

Young Farmer Round Table

December 14th / 15th

Valleyview / High Prairie
Entrance to this network-

ing event is FREE

January

Peace Country Beef Congress

January 4-5th

High Prairie Agri-Plex
Save the date for this annual event!

Young Farmer Round Table

January 11th / 12th

Fairview / Worsley
Entrance to this network-
ing event is FREE

Winter Watering Systems

WARM Bus Tour

January 19th

High Prairie
See what innovations
ranchers in MD Big Lakes
have developed to address
their winter watering
needs!

Winter Grazing Schools

January 29-31st

High Prairie, Valleyview,

Spirit River

Hear from a host of experts in the field on how winter grazing can assist your operation in ways you never imagined!

For more information on any of these upcoming events, contact Karlah @ 780.523.4033

Join us on our
Facebook Group!

<http://www.facebook.com/#!/groups/pcbfa/>

Akim Omokanye
Research Coordinator
Fairview, AB
780-835-6799
780-835-1112

Morgan Hobin
Manager
Fairview, AB
780-835-6799
780-835-8614

Karlah Rudolph
Extension & ASB Project Coordinator
High Prairie, AB
780-523-4033
780-536-7373

through a network of fungal strands that effectively function as extended roots and provide rapid transport of nutrition to plants. In return, plants deliver the product of photosynthesis (carbon) to the fungi. Dr. Jones identified the importance of these fungal partnerships to creating the soil glue called humus. Humus is not just carbon but is the glue (a complex polymer) that holds soils together—maintaining a nutritional bank, storing soil moisture and providing a home to the microbial community. While carbon can be added to soil through the decomposition of plant material, it is only through fungal-plant partnerships that carbon contributes to this polymer of humus and associated soil aggregation. According to Dr. Jones, cultivation, the addition of inorganic nitrogen and water soluble phosphorous and herbicide sprays are all destructive to fungal growth and interrupt humus formation. Dr. Jones suggested that even conventional fertilizers are problematic because the plant can grow on our simplistic additions of nitrogen, phosphorous, potassium and sulfur and will “get lazy” and fail to incorporate essential micronutrients. This process has an ultimately negative impact on human health. From Dr. Jones’ perspective, our entire knowledge system around soil fertility needs to be revolutionized.

Glen Rabenberg, President and CEO of Soil Works LLC, presented on a number of **tools** that can help a grazer understand and improve soil. These are the BRIX meter, a penetrometer, a voltage meter and a carbon dioxide burst meter. A BRIX meter measures the sugar mineral content of a plant which has implications for the feed efficiency of grazing animals. Mr. Rabenberg suggested that at 10% BRIX, plants develop drought resistance and that even non-leguminous plants have the ability to fix nitrogen from the air. At a BRIX between 13-14%, plants develop insecticidal resistance. According to Mr. Rabenberg, calcium and phosphorous are two key minerals that can increase the sugar content of a plant. A penetrometer measures soil compaction, and 300 psi is the limit of what most roots can push through. Mr. Rabenberg stated that compaction results from strong attractive forces in the soil and that erosion results from strong repulsion. Altering the soil chemistry with respect to the ratio of calcium and phosphorous can work to either bind or break up soils. A voltage meter measures the degree of conductivity in the soil, which is what moves “fuel” through the roots and into the plant. This electro-conductivity is maintained by a healthy microbial population. Finally, a CO₂ burst meter measures the carbon release from soil, giving an indication of the respiration rate of the soil microbe population. By using these tools and understanding soil biology, chemistry and physics, Glen believes graziers can create the healthiest food on the planet for plants, grazing animals and humans alike.

John Basarab, a Senior Beef Research Scientist with AARD, spoke on genetic selection for a **feed efficient cow herd**. Maintenance represents between 65-75% of total feed energy requirements in a cow herd and the maintenance requirements and feed efficiency of beef cattle remains largely unchanged from what existed 100 years ago. Residual feed intake (RFI) is feed intake adjusted for body size and production and is a measure of how efficiently an animal uses feed. Low residual feed intake rates (-RFI) indicate highly efficient animals whereas high residual feed intake rates (+RFI) indicate that the animal is eating more feed to maintain the same rate of gain than other more efficient animals. A -RFI bull will pass this trait onto offspring, and studies have shown a reduction of \$16/day over a 150 day finishing period in the first generation. Translated to a cow herd, feeding costs could be reduced by \$26/cow/yr. Dr. Basarab emphasized that genetics are permanent and accumulative and that savings will compound over time. There is some uncertainty as to how low RFI will affect cow fertility, as studies have shown that -RFI cows calved 5 days later. Dr. Basarab believes the low RFI selection process inadvertently selects for later maturing heifers, however, and that -RFI and early maturity can be selected for at the same time without impacts on herd fertility. Moreover, low RFI cows are calmer, their progeny experience a higher early life survival rate due to a high nutrition uterine environment and their lower maintenance requirements result in a reduced loss of body fat and weight under stressful conditions. GrowSafe Systems is an Albian company that measures RFI.

David Irvine is an inspirational speaker who focuses on building trusting and high performance in businesses and families. David focused on **succession planning** and the role that values, decision-making styles and trust play in succession. Values can be determined through group brainstorming and choosing a top five. David made the insightful comment that when there is a gap between what you value and how you behave, a reduced level of self-respect is the result. Decision-making styles range from command to consensus. Command approaches are only acceptable in time of emergency. Consensus is when most individuals agree with a decision and all accept it. It builds trust and satisfaction, but takes time and requires maturity. While it is ideal for succession planning, a consultation process can also achieve satisfactory results. David identified building trust as a number one leadership priority and stated that trust is built through making ‘deposits’ in the emotional bank account. He encouraged farm families to develop a team Code of Conduct that outlines expectations and develops an agreement to honour the top five requests. David brought the human side of agriculture to light and provided a thoughtful reminder that whatever else we do in agriculture, our symbolic ‘grassroots’ deplete when we lose sight of our community and family commitments.