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# MARCH 2019

## Treasurer's Note - Ben Campbell

Howdy Folks;

Well it's been a busy winter for some of us! Spring is right around the corner and I always think of the advice Jim Bauer gave me. Probably one of the most profitable things I can remember. "We always think about stockpiled forage for the fall and winter and then when we run out we start feeding hay until the grass starts growing again. March and April are often the easiest times to graze stockpiled forage." To me, if I am feeding cattle, it's great having a day I can stop feeding that's well before green-up. A lot of guys will say that they get too much snow or ice, but April and early May are the months we see no grass growth with generally little snow cover.

It's also coincidentally a pretty clean way to calve your herd and avoid scours. "Scours is a management disease, not a weather disease". That's a quote from Jim's vet, Elizabeth Homeroski. I like that quote too because yes, it puts the blame on you, but it also puts the ability to avoid scours on you as well and that's darn handy! I can remember the last time I calved cows in March and it was hell. It was last year... haha. What terrible weather and for me, an unnecessary time to calve. I never want to do that again!

That brings me to another quote from a mentor named Jim Gerrish. He said that if you currently calve in March and you want to calve in late April/May, it might be more economical to sell your herd of March calvers and trade them for cheaper Spring calvers. If you do what I did and just put the bull in later, you may be devaluing your herd unnecessarily. That advice came a little too late for me!

I really hope anyone that took the FFGA tour to Texas in February had a good trip. It's always a really good time for our members and I hear a ton of funny stories. Also from February was the Ranching Opportunities conference in Olds. That is always jam packed with forward thinking content.

I strongly encourage anyone who is able to attend the AGM (found on page 8), which includes a tour of the winter watering system that's installed at the a7 Rancho. They have an energy free, gravity and geothermic water system that gives them clean, fresh flowing water all winter! It's not just around the home yard, it's an extensive system all over the ranch. I commented to John Cross that I bet his grandfather would have been blown away to see flowing water in the middle of the winter all over the ranch like that. What a difference in your ability to winter graze all classes of cattle! I have no idea how he does it so I'm excited to find out!

Ben Campbell

Young Henry is showing his dad Ben Campbell how it's done!



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# Clean Surroundings Called Key to Calves Getting a Good Start

Minimizing fecal contamination is one of the best ways to optimize calf health, veterinarians say.

In other words, limit the poop in the group.

“We’re really trying to reduce that exposure of the baby calf to adult feces as much as possible. We can’t eliminate that, but we can reduce the kind of load that they’re exposed to,” said John Campbell of the Western College of Veterinary Medicine at the University of Saskatchewan in Saskatoon.

“We want to get a healthy calf out and get colostrum and all that sort of stuff, but we also want to minimize the amount of adult feces that calf is exposed to because most of the bugs that cause diarrhea in baby calves and scours and things like that, they’re carried normally by healthy cows,” he said.

“They’re walking around with those same bacteria and viruses in their intestinal tract and not causing any problem in the adult, but it can cause significant disease in the baby calf.”

Time of year, size of herd and calving infrastructure all factor into the biosecurity formula.

Campbell said outdoor operations with limited infrastructure can use a Lacombe calving system that uses a separate wintering area followed by a calving area. Cow-calf pairs are then moved to paddocks or pastures as soon as possible. Several paddocks allow different ages of calves to be separated from one another.

Alternatively, the Sandhills system uses a calving field where the cow-calf pair remains and the pregnant cows are moved onto cleaner ground after a week or two. This procedure continues until the last group of cows has calved.

This system is particularly good with larger birthing operations using multiple

calving areas. It is also easier to move pregnant cows to the next calving area instead of moving cow-calf pairs.

“So the ones that haven’t calved yet, maybe you have 500 cows, they’d all go onto that area. Maybe after 100 have calved you move the 400 that haven’t calved off to the next one and let 100 calve on that area. And then you move 100 onto the next one,” he said.

Many purebred producers are in the thick of things right now so they should take expectant mothers to clean, well-bedded calving pens, free of manure from other animals, although Campbell admits that’s easier said than done.

Cleanliness is a top priority for Julie-Anne Howe and husband Kelly, who started calving 350 head of purebred Charolais and Red Angus Jan. 15 near Moose Jaw, Sask.

“We try and keep our environment as clean as possible in terms of fecal contamination to avoid the viral loads that could cause disease,” said Julie-Anne.

“Environment trumps all sorts of disease prevention protocol, so you can’t vaccinate your way out of a bad environment.”

She and Kelly are “militant” in their calving barn by cleaning daily and using an aerosol disinfectant.

“Cleanliness is close to godliness in terms of disease prevention,” she said.

In an effort to maintain calf health, Campbell said the cow-calf pair should be moved to another clean, well-bedded environment shortly after birth and the calf is mothered up.

“It’s nice if there’s a nursery pen or a nursery area where we can turn these cow-calf pairs once the calf is sucking and dried off,” he said.

A basic way to reduce fecal contamination in an outdoor calving pen is to put pregnant cows in just before the calving season.

“We talk about a wintering area, calving area and maybe multiple calving areas if you’ve got a big herd. If your calving (area) gets contaminated over time you might want to stage that if you can, but again it’s always easier said than done,” said Campbell.

The Howes move their calves through a series of pens. Pregnant cows come in one side of the yard and as they calve, they move in a circuit through the yard and onto a half section of land.

“As soon as a calf is about 10 days old and well mothered up, they go out onto a half section again and they don’t come back in,” she said.

“We start the 15th of January and then we calve again on the 15th of August and those calves are well out on pasture and that really decreases any kind of disease load if they’re out on pasture.”

Steve Pylot of Meadow Lake, Sask., shifted his calving from March to May to work with Mother Nature and minimize exposure and contamination.

“We’ve moved to May calving so our calving pens, if you will, are not feedlot pens or cow-calf pens. Our pens are our pastures of 20 to 30 acres,” said the commercial Black Angus producer.

“So by just the square footage, the warm weather, rain and lack of confinement tend to mitigate a lot of that stuff on its own.”

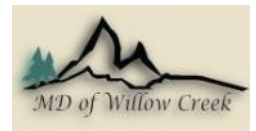
As a result, bacterial contamination has not been a problem and he no longer gives scours vaccines.

While a later calving season comes at the cost of lower-weight animals in fall, calf health has improved with minimal doctoring, he said.

“We don’t check cattle as often and we don’t doctor cattle as often because they are not in confinement as much and they’re not as stressed with the environment.

*(Continued on page 6)*

## Thank you for your support!





# A Climate Change Solution Beneath our Feet

When we think of climate change solutions, what typically comes to mind is the transportation we use, the lights in our home, the buildings we power and the food we eat. Rarely do we think about the ground beneath our feet.

Kate Scow thinks a lot about the ground, or, more precisely, the soil. She's been digging into the science of how healthy soils can not only create productive farmlands, but also store carbon in the ground, where it belongs, rather than in the atmosphere as carbon dioxide.

Looking across the landscape on a spring day at [Russell Ranch Sustainable Agricultural Facility](#), most people would simply see a flat, mostly barren field. But Scow—a microbial ecologist and director of this experimental farm at the [University of California, Davis](#)—sees a living being brimming with potential. The soil beneath this field doesn't just hold living things—it is itself alive.

Scow likens soil to the human body with its own system of “organs” working together for its overall health. And, like us, it needs good food, water and care to live up to its full potential.

## **Solutions beneath our feet**

Farmers and gardeners have long sung the praises of soil. For the rest of us, it's practically invisible. But a greater awareness of soil's ability to sequester carbon and act as a defense against [climate change](#) is earning new attention and admiration for a resource most of us treat like dirt.

Soil can potentially store between 1.5 and 5.5 billion tons of carbon a year globally. That's equivalent to between 5 and 20 billion tons of carbon dioxide. While significant, that's still just a fraction of the 32 billion tons of carbon dioxide emitted every year from burning fossil fuels.

Soil is just one of many solutions needed to confront climate change.

But the nice thing about healthy soils, Scow said, is that creating them not only helps fight climate change—it also brings multiple benefits for agricultural, human and environmental health.

“With soil, there's so much going on that is so close to us, that's so interesting and multifaceted, that affects our lives in so many ways—and it's just lying there beneath our feet,” she said.

## **Subterranean secrets**

Underground, an invisible ecosystem of bugs, or microorganisms, awaits. In fact, there are more microbes in one tea-

spoon of soil than there are humans on Earth. Many of them lie dormant, just waiting to be properly fed and watered.

A well-fed army of microbes can go to work strengthening the soil so it can grow more food, hold more water, break down pollutants, prevent erosion and, yes, sequester carbon.

“I love the word ‘sequestration,’” said Scow, who thinks the word is reminiscent of secrecy, tombs and encryption. “Soil is filled with microbes who are waiting it out. The conditions may not be right for them—it's too dry or too wet, or they don't have the right things to eat. They're sequestered. They're entombed. But if the right conditions come, they will emerge. They will bloom, and they will flourish.”

## **How soil sequesters carbon**

Soil sequesters carbon through a complex process that starts with photosynthesis. A plant draws carbon out of the atmosphere and returns to the soil what isn't harvested in the form of residue and root secretions. This feeds microbes in the soil. The microbes transform the carbon into the building blocks of soil organic matter and help stabilize it, sequestering the carbon.

“You can't sequester carbon without microbes,” Scow said. “They're far more important than we ever imagined.”

## **Healthy soils**

There's too much carbon in the atmosphere and not enough in the ground where it can be used. A new effort in California aims to flip that picture.

The state's [Healthy Soils Incentives Program](#) is considered the first in the nation to provide state funding to help farmers and ranchers enhance their soils to reduce greenhouse gas emissions. The \$7.5 million program, expected to launch this summer, encourages farming practices known to boost microbial communities underground and sequester carbon.

The program may also open the door for farmers and ranchers to participate in the state's carbon market, where they could create and trade carbon offsets under the [California Global Warming Solutions Act](#). In short, they could be paid to store carbon.

An increased demand for compost from farmers and ranchers could also help reduce food waste and landfill emissions.

## **Soil food**

Similar to how people can feed probiotics and prebiotics to the microbes in their guts to improve their health, farmers

can use cover crops and apply compost, yard waste and other organic matter to feed microbes in the soil. Reduced tillage, efficient irrigation and other methods also strengthen the soil's ability to store carbon.

Such techniques have long been used by farmers to enhance soil—particularly on organic and small farms.

“This is ancient knowledge, really,” said Pelayo Alvarez, outreach director for the Petaluma-based Carbon Cycle Institute and a graduate of UC Davis. “When you increase soil organic matter in the soil, good things happen. But climate change is bringing new attention to it. And regardless of climate change, we should be doing this for many reasons—for productivity, erosion control, drought tolerance. It's going back to our roots, no pun intended.”

## **Ranching roots run deep**

The roots run deep for Scott Stone at Yolo Land & Cattle Company outside Winters, California. His late father, Hank Stone, bought the 7,500-acre ranch about 40 years ago, and it's now owned and operated by Scott and his brother Casey. Stone is as much a natural resources manager as a rancher, with a protective eye on the ranch's watersheds, trees, pasture and grass-fed cattle, and a genuine desire to leave the land better than he found it.

He rotates his cattle frequently across the pasture to avoid overgrazing. Most of the ranch—7,000 acres—is in a conservation easement. He avoids fertilizer. And, increasingly, he composts.

Rotting hay bales compost in place. Where they once fed the cows, they now feed microbes—growing greener grass and sequestering more carbon as a result. A large mound of compost rests on his lower fields, awaiting application.

“It's the right thing to do,” Stone said. “As ranchers, we're busy here making a living, and we don't get out to tell our story as much as we should.” He wants people to better understand that land stewardship and ranching can work together to protect the whole ecosystem.

## **Carbon on the range**

Sustainably managed ranches like this one, with their swaths of grasses and trees mixed with cow manure and hay, suck up carbon by their mere existence.

“The first thing to do to store carbon on rangelands is to avoid converting them to other things,” said Kelly Gravuer, who

*(Continued on page 7)*



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# Find the Right Minerals for Your Cow-Calf Operation



Photo: Sonja Bloom

As this column goes to press, the 2019 calving season will be starting for some while for others it will unfold over the next three to four months. In this column we have stressed the importance of proper nutrition during this period, both for the health of the cow and calf and for the success of the subsequent breeding season. While there are many aspects of nutrition to consider when developing a balanced ration, mineral nutrition is often neglected. With this column, I want to remind you of the importance of a mineral feeding program and try to answer some common questions producers have regarding this topic.

Perhaps the question I get most often from producers is which mineral is right for their operations. It's not surprising that there are no simple answers when one looks at the multitude of choices (loose minerals, blocks, tubs, protein supplements) on the market, each with their own unique formulation in terms of macro (i.e. calcium, phosphorus, magnesium) and trace (i.e. copper, zinc, magnesium) minerals.

My approach to addressing this question is to ask the following series of questions. How well do you know your operation in terms of factors that influence forage mineral levels and availability? Have you had your forages tested for macro and trace mineral levels? What about testing your soil — soils deficient in specific minerals will lead to deficient forages. Also certain soil types can lead to either deficient forages or forages with specific minerals that are tied up and

not available to the animal. As an example, grey wooded soils are known for their low selenium content while soils high in molybdenum can lead to induced deficiencies as they tie up copper and render it unavailable to the animal. Similarly, high-sulfate water — both surface and groundwater — can lead to a deficiency, as sulfate acts alone or in combination with

high molybdenum levels in forages to tie up copper and render it unavailable to the animal.

Answers to these questions will go a long way to determining the type of mineral required, as well as the need to feed chelated minerals. For example, if your operation is in an area that is known to be deficient in copper or another trace mineral, then feeding a chelated mineral pre- and post-calving can be a strategy to help ensure adequate trace mineral status. Most inorganic minerals are poorly absorbed in the rumen. In fact, other than newborn calves, cattle poorly absorb copper and some of the other trace minerals. Chelated minerals are manufactured to be more available to the animal and thus can help to prevent deficiencies when feeding situations as discussed above arise. Answers to the above questions can also help your veterinarian diagnose and treat diseases such as white muscle disease in calves or retained placentas with vitamin E or selenium injections.

While one can purchase trace minerals on their own as either blocks or loose mineral, most commercial minerals are combinations of the macro and trace minerals and are often sold based on their calcium and phosphorus content. For example, there are numerous 1:1, 2:1 and 3:1 minerals on the market. These designations refer to the calcium and phosphorus ratio in the mineral. A 1:1 mineral has equal parts calcium and phosphorus, while a 2:1 mineral has twice as much calcium as phosphorus. The exact levels will be indicated on the mineral tag. For example, the tag of a

2:1 mineral might indicate that it contains 18 per cent calcium and nine per cent phosphorus, while a 3:1 tag might indicate 18 per cent calcium and six per cent phosphorus.

The choice of which macro mineral ratio best suits your operation often depends on the type of forage being fed. For example, legume and grass/legume hay will typically be high in calcium and marginal in phosphorus. In such situations a 1:1 mineral is most likely appropriate. For those grazing whole plant corn, calcium intake becomes a concern and a 3:1 mineral is justified.

Another area of confusion is the mineral tag itself. It contains information that points to both its nutritional value and its economic value. For example, the tag will indicate expected consumption such as 90 or 125 grams per head per day. It will also give the level of specific minerals in the mix, either as a percentage, as in the case of macro minerals, or as milligrams per kilogram (mg/kg) for trace minerals. Together, these two pieces of information can be used to evaluate the value of the mineral.

For example, an animal that consumes 90 grams of a mineral that contains 900 mg/kg of copper actually consumes (0.090 kg\*900 mg/kg) 81 mg of copper. If that same animal consumes 125 grams of a mineral that contains 1,500 mg/kg of copper, it consumes (0.125 kg\*1,500 mg/kg) 188 mg of copper.

For a 1,400-pound cow eating two per cent of her body weight on a dry matter basis, the first mineral is deficient in copper while the second will typically meet her needs. It pays to read and understand the tag before selecting a mineral — don't just focus on price!

Author: John McKinnon, Cattle Nutritionist at the University of Saskatchewan. Original Article from <https://www.canadiancattlemen.ca/2019/02/26/finding-the-right-minerals-for-your-cow-calf-operation/>

(Continued from page 2)

“The more you confine cattle, the more they have a higher incidence of exposure.”

Campbell said respiratory disease, as well as inhalation of viruses and bacteria, are big components of biosecurity, which producers can minimize by maximizing the immunity of the newborn calf through vaccinations.

“We often vaccinate the cow with scours vaccines and things like that so that she passes on that immunity to the calf in the colostrum and then sometimes the vaccination of the calf,” he said.

It’s usually not a concern with calving outside, but can be an issue inside barns, particularly with dairy operations since a high number of animals will increase humidity inside the barn.

“The cows are carrying around the bacteria and viruses in their respiratory tract that can cause respiratory disease. The cows have immunity. They don’t seem to have bothered adult cows, but if calves inhale those viruses to any great extent they can get respiratory disease down the road too,” said Campbell.

It tends not to be an issue in the beef industry, but the same concept applies.

“We don’t see a lot of that in the beef industry, but in some purebred guys where they keep their calves in the barn for too long, we can see the same concept,” he said. Sufficient space and ventilation are key.

The Howes vaccinate extensively by giving newborns an intranasal for respiratory disease as part of their animal health protocols, which requires facilities to access the calves.

They use eight individual maternity pens where the cow and calf stay together. While it’s seldom used, a larger area in the back of the barn is reserved for up to 65 animals when temperatures drop to extremes.

Weather is always a factor with biosecurity and like Pylot, many producers have moved their calving later in the year. That’s not always an option for purebred operations.

While intensive monitoring helps during calving, wet calves are prone to hypothermia until they get dried off and fed.

“Even a normal calf can become hypothermic very quickly” said Campbell.

Author: William DeKay—The Western Producer. Original article found at; <https://www.producer.com/2019/02/clean-surroundings-called-key-to-calves-getting-a-good-start/>

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(Continued from page 3)

worked on the Healthy Soils Initiative as an intern for the California Department of Food and Agriculture while she was a graduate student in Scow's lab. "But people are asking if there are additional things we can do to store carbon, like compost."

California loses about 20,000 acres of rangeland each year, much of which become greenhouse-gas-emitting housing developments, shopping centers, roads and parking lots. The remaining 63 million acres of rangeland in the state—part of the 770 million acres nationwide—represent significant opportunities for additional carbon storage, and can help offset some of the emissions for which the meat industry is often criticized.

Scientists estimate that U.S. rangelands could potentially sequester up to 330 million metric tons of carbon dioxide in their soils, and croplands are estimated to lock up more than twice that amount—up to 770 million metric tons. That's the CO<sub>2</sub> emissions equivalent of powering 114 million homes with electricity for a year.

"When you look at the cow, you think of emissions," Stone said. "But the whole system is actually sequestering carbon. There are so many opportunities in agriculture to move the needle on climate change."

### Everywhere and nowhere

Back at Russell Ranch, Scow walks into a field, bending down to pick up a clump of soil. She crumbles it in her hands. She views soil as a metaphor for a world that needs healing.

"It's not a crying baby," she said. "It's easy to ignore. It's everywhere and it's nowhere. That's the challenge. But if soil is alive, it's like someone you can create a relationship with."

Author: Kat Kerlin. Found at <https://www.washingtonpost.com/sf/brand->

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**Mission:** Assisting producers in profitably improving their forages and regenerating their soils through innovation and education.

**Vision:** We envision a global community that respects and values profitable forage production and healthy soils as our legacy for future generations.

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