

Forage Facts

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Wastage or Armour? Feeding Your Above & Below Ground Livestock

By: Katie McLachlan

The leaves are starting to turn and the grass is hardening off, like it or not, fall is in the air. Before winter takes its icy grip, we as producers will be trying to stretch our pastures and cropland as far as we can before having to start a tractor everyday or begin on the winter grazing.



No one wants to waste good grass. But what about our soil? Photo: Katie McLachlan

Wasteage is something that is talked about quite often going into winter. No one wants to waste good grass. With feed supplies tight in areas this year, it is tempting to graze as long as we can.

But what are we losing by not leaving anything on the soil surface? USDA studies have shown that as the rate of residue removal increases, soil organic matter, aggregate stability, soil carbon, and microbial activity all decrease significantly (Osborne, S.L., J.M.F. Johnson, V.L. Jin, A.L. Hammerbeck, G.R. Varvel).

As producers, we have our livestock

we take care of. But as land managers, we also need to be concerned about taking care of our below ground livestock. By feeding our soil microbial population, we can help kickstart the various cycles in the soil that help to build soil health. By building soil health, we can help increase our land's production potential.

If you have been to any of our Grazing and Soil Health events this summer, you have probably heard about the Rule of Thirds: take a third, trample a third and leave a third. This may sound like we are wasting 2/3 of the stand, however, these 2/3 are vital to building soil health. When we take the 1/3, we encourage the plant to go into root growing mode. This means that we are putting more matter into our soil in the form of carbon. By trampling with hoof action and leaving ground cover, we are armouring our soil, helping to kickstart some essential soil biological processes.

Plant residue helps to build soil health by creating a habitat for microbial activity and protecting the surface of our soil. By protecting the soil surface, we are helping to prevent soil erosion. We can think of residue in this way as the soil's winter armour. If we have good soil cover, including stubble and roots,



Rule of Thirds: Take a third, trample a third, leave a third Photo: PCBFA

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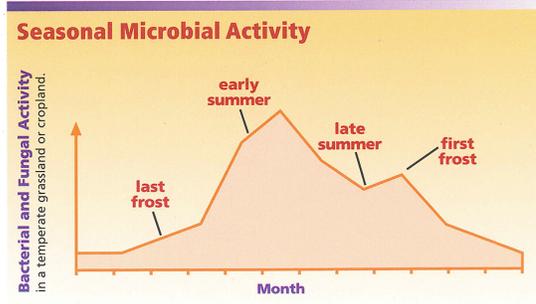
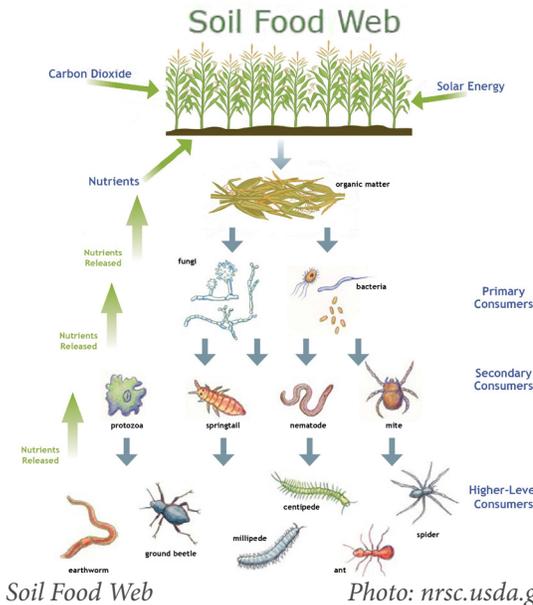


our soil is more apt to stay put during the spring run off. Roots hold the soil together, while the soil cover helps to protect soil aggregates from the weather.

By armouring our soils, we are also helping to create habitat for soil biology. Residues feed our underground livestock. If we feed our underground livestock, they in turn will help to feed our subsequent forages and crops. The soil food web, pictured below, shows how residues are broken down by fungi and bacteria in the soil. These fungi and bacteria live primarily on carbon and cellulose provided by residues and living roots. The fungi and bacteria are then consumed by other soil

organisms, who defecate and perish in the soil, releasing nutrients back to the soil! In fact, at most every level in the soil food web, nutrients are being cycled and made plant available.

As pictured in the graph below, we are currently at a critical time for our underground livestock. Going into winter, we have a small surge of biological activity before going mostly dormant for the winter. If we can ensure good ground cover going into winter, we will have a stockpile of feed for our microbes to wake up to in the spring before they start feeding on carbon and sugars provided by living plants.



Seasonal Microbial Activity Photo: nrsc.usda.gov

So as we start gearing up for winter, be sure to not only take stock of feed for your above ground critters, but also feed for your underground critters. Your soil, grass, and crops will thank you.

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We are always looking for ideas! Give us a call!

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CATTLE MARKETING EVENING WITH ANNE WASKO

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September 14th

Rycroft Ag Society Hall

5pm, Supper Provided

Offered via Live Webinar

\$40/Member In-Person, \$15/Member on Webinar

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Feed Sampling

By: Katie McLachlan



Did you know that with your PCBFA Membership, you get 2 free feed analysis/year? Did you also know that we have forage probes, and a silage probe available for member use? We can even help you with interpreting your results and formulating rations. With all of this at your disposal, why wouldn't you take advantage? All you need to do is collect your sample!

Here in the Peace Country, many of our herds get through the winter on hay and silage. Since these feedstuffs are put up across entire fields with hilltops, low spots, heavy patches and light patches, feed quality can fluctuate from bale-to-bale or load-to-load of silage. So how does one gather a proper, representative sample that properly reflects the general quality of the feed?



We have Forage & Silage Probes available for your use in our Fairview & High Prairie Offices. Give us a call to borrow one!
Photo: PCBFA

For sampling hay, straw, and silage bales, you will need: a forage probe, a mixing bucket, and sample bags (large ZipLock bags work excellent). If you are unable to get a forage probe, samples can be taken by hand - however, shattering and leaf loss are a risk. It is recommended to sample bales as a 'lot' rather than sampling a single bale. A 'lot' in this case means sampling from several bales off of the same field. Factors that will affect feed quality and should therefore determine the size of your sampling lot include: forage species, stage of maturity, soil type, fertility program, and presence of weeds. When sampling large round bales, it is recommended to take samples from 10 different bales at minimum. The sample should be taken from the outside of the bale as pictured above. Place each sample into your collection bucket and mix your samples together. Fill your sam-

ple bag and discard the remainder left in your bucket.

Silage sampling can be done either at the time of chopping or after ensiling as the nutrient quality will not change. In cases where silage



Make sure you label your sample with your name, date the sample was taken & description of the sample. We also welcome office helpers!

Photo: PCBFA

has moulded, heat damaged, or has undergone considerable seepage, it is recommended to test it right before feeding for mycotoxins. If you will be sampling at the time that the silage is chopped, simply take a handful or two of silage from every load brought to the pit and place in a bucket. Be sure to keep this bucket in a cool place out of the sun as the heat will dry out the sample. Once complete, mix your collected samples well and fill your sample bag and discard the remainder. If taking the sample after ensiling, you will need to use a silage probe. Similar to sampling bales, you will need to take several samples from your pit or pile, mix them together, and fill your sample bag with a representative sample.

Once your sample is collected, you will need to label your sample bags with your name, the date the sample was taken, and a short description of the sample.

If it will be a day or two before you can make it to your nearest PCBFA Office, you will need to ensure you store your sample properly to maintain quality. If you are sending out a silage, or fresh forage sample, it is imperative that you keep the sample cool. The best way to ensure this is to keep it in the fridge or freeze it. Exposure to heat will dry out the sample and kick-start microbial activity, potentially changing the quality of the feed. If you are sending out dry hay, straw, or grain - be sure to keep the samples in a cool, dry place. There is no need to refrigerate dry samples.

If you would like to get some feed tests completed, give us a call in Fairview at 780-835-6799 or in High Prairie at 780-523-4033. We'd love to help!



Upcoming Events

Cattle Marketing Evening with Anne Wasko	September 14th	Rycroft Ag Society Hall
Alberta Farm Animal Care Livestock Welfare Focus Group	September 20th	GPRC Fairview Campus
Fall Watering Systems & Grazing Tour	October 2nd	High Prairie
Ration Balancing Workshop	Mid October	TBD
Environmental Farm Plan & CAP Workshop	Late October	Gundy Hall
Beaver Workshop	Late October	Greenview
DIY Land Design	Nov 7-9 & Nov 21-23	Grande Prairie
<p>If you would like more information, or to register for any of these great upcoming events please visit our website, peacecountrybeef.ca, email info@pcbfa.ca or call 780-835-6799 ext. 3</p>		

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