

# Forage Facts

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## The Quick & Dirty on Soil Organic Carbon

By: Katie McLachlan

If you have attended any of our past soil health events, you have probably heard about the importance of soil carbon! But why exactly is soil carbon so important?

Soil organic carbon (SOC) is the basis for soil fertility. It releases nutrients for plant growth, promotes good soil aggregation, and most importantly, promotes healthy soil biology! But what is it? Soil organic carbon is plant and animal material in various stages of decay as well as root exudates from living plants. There are three main soil organic carbon compounds that help build up our soils; polysaccharides, glomalin, and organic acids.

Polysaccharides (sugars) help to feed soil microorganisms and help them thrive. These microorganisms kick start nutrient cycling in our soils. They break down trash and plant matter, turning it into plant-available nutrients. If we have living plants that are sequestering atmospheric carbon in the form of polysaccharides, our chances of having a thriving soil microbiology community below the soil surface is greatly increased.

Another organic carbon substance, glomalin, which accounts for about 20% of soil organic carbon, glues aggregates together and stabilizes soil structure. Glomalin makes soil sticky enough to be resistant to erosion, yet porous enough to allow air, water, and plant roots to move freely through the soil. This means that we will have a strong soil structure, that still allows rainfall to infiltrate to the

plant roots.

Finally, there are various organic acids, which are commonly released from decomposing residues and manure. Organic acids help to prevent nutrient fixation by clay minerals, ensuring nutrients are instead available to our crops.

Poor levels of SOC directly affect soil health. Microbial biomass and activity is lowered due to a shortage of energy sources. Due to the decrease in microbes, we also have less diversity below the soil. Physical soil aspects change as well. Soil becomes hard, and structure becomes blockier and less porous, therefore, the ability of plant roots to move freely through the soil, water infiltration rates and airflow all suffer from a lack of soil organic carbon. The decrease in biological and physical health in our soil can cause plant pests and diseases to move in more easily, and decrease the rate of nutrient recycling.

Soil organic carbon is typically measured in traditional soil tests along with the total soil organic matter. Soil organic matter accounts for all organic compounds in the soil - including decomposed and non-decomposed residues. Typically, carbon accounts for approximately 50% of soil organic matter, but without specifically measuring the carbon content of our soil, it is very hard to determine its health.

The CARA Soil Health Lab, opening this summer in Oyen, will have the ability to test for water-extractable carbon, which has the ability to give us a better picture of our soil organic carbon in our soils. Stay tuned for more information on the lab's opening and when they will be accepting samples.

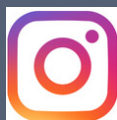
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Dr. Yamily Zavala is heading up the CARA Soil Health Lab, and will be joining us at our Field Day at the Research Farm August 2nd



# Jim Gerrish MiG Book Review

By Marianne Krahn

On August 7th, 2018 PCBFA will have the honor to host the world renowned grazing expert, Jim Gerrish. Jim has gained his expertise in grazing management both while conducting beef and forage systems research for the University of Missouri and on his own family farm in Missouri, a commercial cattle and sheep operation. Jim has coined the phrase Management-intensive Grazing (MiG), which emphasizes that it's the management that needs to be intensive, not the grazing.

In his book Management-intensive Grazing: The Grassroots of Grass Farming, Jim Gerrish explains in detail the theory behind MiG. He begins from the ground up with the soil, and advances through the management of pastures and animals, ending with practical advice regarding needed material and set ups.

While a lot of questions relating to grazing management like "How many paddocks do I need?", "How often do I need to move the cows?", "How much rest is necessary?" get an "it depends" answer, Jim doesn't just leave it at that. He explains in detail

the different parameters affecting pasture situations, giving you the tools you need to apply to your situation. So while all the examples are from the US, it is easy to apply them to your operation, regardless of where you live!



PCBFA is very excited to be hosting Jim Gerrish for his 1-Day Grazing School August 7th near Bay Tree.  
Photo: PCBFA

Because Jim has gained knowledge both from his own farm and his research, his book is thorough yet practical, making it relatable to a large audience. If you continuously graze, this book will probably not convince you to start applying MiG principles. However, if you already apply some form of MiG, I can't recommend this book enough as it will give you many of the tools and understanding you need to bring your

grazing system to the next level, meaning more money in your pocket.

Not the reader type? Too busy to read? Not a problem! Come and join us on August 7th at Spruce Lane Ranch near Bay Tree and learn directly from the expert! Register on our website at [peacecountrybeef.ca/jimgerrishgrazingschool](http://peacecountrybeef.ca/jimgerrishgrazingschool), by emailing [info@pcbfa.ca](mailto:info@pcbfa.ca) or calling 780-835-6799 ext. 3.

Happy grazing!

## Thank You to the PCBFA Board of Directors

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## Do You Have Project or Workshop Ideas?

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

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## FIELD DAY at the RESEARCH FARM

Thursday, August 2nd  
Fairview Research Farm

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# Meet Our Summer Staff!

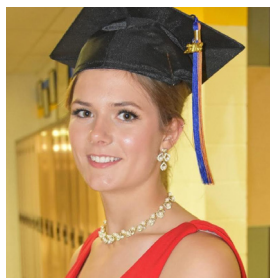


We at PCBFA are very excited to introduce you to our amazing Summer Staff! Alan Lee and Jamee Fitzpatrick have been with us since May 1st, and Carly Shaw and Talese Godberson started with us July 3rd. Lets get to know them!

"Hi there, I'm Alan Lee, a PCBFA Summer Student, and I am excited and ready to work this summer. I like soils. Animals too. And plants. But mostly soils and animals. Coming from White Rock, BC, I knew nothing about farming before going to university, but I decided to study sustainable agricultural systems in the University of Alberta. Am I learning much about agriculture? Well, it's teaching me plenty about plant, soil, and animal health, but I still don't know how a farm operates. I am eager to learn and would love to chat about how your farm works. I may frequently ask questions, and may ask to repeat yourself as I do not know much of farm jargon.



My experience with agricultural research is limited to one summer so far, but might have something to offer if the opportunity presents itself. I will be returning to finish my studies in the fall, and would love to learn more about concerns and directions the agricultural community has, and would love to use this knowledge to supplement my education, perhaps even learning answers and methods to go about these goals."



"I'm Jamee, and it's a pleasure to introduce myself as one of PCBFA's new summer students. I am glad to return to Fairview as it is my hometown and I graduated from Fairview High School. Currently, I am registered in my second year of

biological sciences at GPRC and plan on continuing my education this fall. In many ways, the duties of a research technician fall into my field of study and align with my career goals.

So far, my first 6 weeks have been educational, and interesting, as well as challenging. From the first day, the team and I have been working on counting, weighing and seeding. Now, seeing all the new growth from the ground it is very satisfying and

fulfilling. It's encouraging to know that the work I do now could possibly lead to some long-lasting benefits for the forage association members and everyone it touches. I am excited for what the rest of the summer brings and look forward to seeing the positive results that our hard work will bring."



"Hello Everyone! You may remember me as the 2015 summer student at PCBFA but in case you don't here is a little bit about me. I was born and raised on a farm near Fairview Alberta. I spent my childhood growing up around

animals which mainly consisted of cattle and horses. For the past eight summers I have worked on the farm with my dad which has included everything from chasing cows to driving equipment.

Currently I have just completed my third year of university education as an international exchange student at the University of Western Australia. In the fall I will return to the University of Calgary to finish my Bachelor of Commerce degree. I am very excited to be returning as a summer student to PCBFA and continuing to expand my knowledge of the agriculture industry!"

"Hello, my name is Talese Godberson. I was born and raised outside of Hines Creek. I will graduate at the end of June this year from Hines Creek Composite and I plan to pursue a Bachelor of Science at the University of Lethbridge in the fall. I played high school basketball for many years and this year we won bronze while at Provincials, it was a huge accomplishment! Being involved with basketball and a small school; encourages active community participation. As such, I have always participated in Highway Cleanup and numerous food booth duties. Since I have not worked for PCBFA before; I look forward to increasing my knowledge in the role that they play in my community. In my spare time I enjoy camping and paddleboarding, being outdoors is one of my favourites. I'm excited for the experience that will come with my new job along with what University has to offer."





# Upcoming Events

Morning Coffee Tour of the High Prairie Plots	July 24th	High Prairie Plots near the AgriPlex
Field Day at the Research Farm	August 2nd	Fairview Research Farm
Jim Gerrish Grazing School	August 7th	Bay Tree
Cocktail Cover Crop Farm Tour	August 9th	Fairview - Eureka River
Healthy Soil, Healthy Profits: Making Your Soil Work for You	August 13th	Teepee Creek
Healthy Soil, Healthy Profits: Making Your Soil Work for You	August 14th	High Prairie

If you would like more information, or to register for any of these great upcoming events, please visit our website, [peacecountry-beef.ca](http://peacecountry-beef.ca), email [info@pcbfa.ca](mailto:info@pcbfa.ca) or call 780-835-6799 ext. 3



**TUESDAY  
JULY, 24TH**  
At the PCBFA Plots  
across from the High  
Prairie AgriPlex



***Morning Coffee Tour  
of the High Prairie Plots***

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## Contact Us

Liisa Vihvelin  
Manager  
Fairview, AB  
780-835-6799  
780-523-0443  
[liisa@pcbfa.ca](mailto:liisa@pcbfa.ca)

Akim Omokanye  
Research Coordinator  
Fairview, AB  
780-835-6799  
780-835-1112  
[akim@pcbfa.ca](mailto:akim@pcbfa.ca)

Katie McLachlan  
Environmental &  
Communications Coordinator  
Fairview, AB  
780-835-6799  
780-772-0277  
[katie@pcbfa.ca](mailto:katie@pcbfa.ca)

Monika Benoit  
Extension Program  
Coordinator  
High Prairie, AB  
780-523-4033  
[monika@pcbfa.ca](mailto:monika@pcbfa.ca)

Marianne Krahn  
Admin Assistant  
High Prairie, AB  
780-523-4033  
[marianne@pcbfa.ca](mailto:marianne@pcbfa.ca)