

Aline Remus

Brazilian is nuts about nutrition

With pig farming in her blood, Dr. Aline Remus is pumped about precision feeding. It all began on her parents' mixed farm (cows and pigs) and led to a focus on enhancing feed efficiency for the good of producers and the planet. That excitement must be contagious, as SIP quickly jumped onboard to fund her efforts in this critical area for industry.



Tell us about your background

I loved growing up on the family farm, where I took care of the farrowing room each morning before school.

After completing my Master's in Animal Science in Brazil, which included my first experiments with precision feeding, I earned a PhD in a joint program between Brazil and Université Laval. I went on to complete my post-doc before joining Agriculture & Agri-Food Canada (AAFC) as a temporary researcher. In 2022, I was hired as a full-time researcher to "replace" Dr. Candido Pomar, though he is irreplaceable.

Why did you become involved in the swine cluster program, and what do you see as the value of collaborative research?

While studying for my PhD, I was hired to assist with a Swine Cluster 2 study, so I learned first-hand how well the program works. SIP is our most important funding source, and they facilitate collaboration across the country. I am realizing my dream of working with brilliant researchers from the University of Guelph, Prairie Swine Centre (PSC) and The Centre de développement du porc du Québec inc. (CDPQ). The swine cluster program brings all of these groups together to reproduce their lab results in commercial conditions.

The cherry on top is the chance to team up with industry, assess their needs, and balance scientific curiosity with a desire to drive progress for producers.

Can you give us a brief description of your research with SIP?

Our Swine Cluster 4 study is researching the use of precision feeding — a technique that tailors pig diets to the individual needs of each animal — to decrease CO2 emissions on farm. We also want to test different feed products that could replace corn in pig feed. Our hope is that these products could serve as an energy source that would be grown on lands not used for crop production.

We are currently compiling the results of our precision feeding tests, and the results look promising. We are also creating life cycle assessments that can be used on these alternative feedstuffs to test their performance. At Université Laval, they are examining the excretion of minerals like calcium and phosphorus and how that impacts the environment. Meanwhile, CDPQ is conducting farm trials to get a "real world" perspective on our progress thus far. We also have the University of Guelph (U of G) using cameras to predict the body weight of animals and gauge the accuracy of our estimates for nutrient requirements.

Finally, PSC is working on group precision feeding with commercial equipment and crafting strategies for group phase feeding on farm.

At this point, everyone is focused on one piece of the puzzle, and we hope to have the entire puzzle assembled for producers by the time we're done.

What do you see as the key outcomes and practical applications of your research for producers and industry?

The ultimate goal is to make individual and group precision feeding usable by producers. By doing so, they can reduce their feed costs by about 10% and lower emissions. If we can also provide industry with alternative feed ingredients, we may shrink that feed bill and future emissions even further.

This project offers another benefit for producers in an area that is often problematic: labor. Many farmers struggle to find workers these days, so if we can improve automation and digital management of the barns, it could relieve some stress in that regard. This increased use of technology might also attract more young people to the business, since computers and tablets are second nature to them.

My time on the family farm growing up taught me first-hand how demanding the work can be, with no weekends off or regular vacations. If I can help make producers' lives a bit easier, I will deem it a success.

What are your future research plans?

Once we have results from our Swine Cluster 4 project, we will look to build on that and continue our focus on precision feeding. We know that this type of feeding is different for groups versus individuals, so there is still work to do in tailoring diets as precisely as possible.