

Ruurd Zijlstra

From windmills to feed mills

For producers, feeding their passion means feeding their pigs. It's the biggest chunk of a pig farm's budget, and has long been a focus for Ruurd Zijlstra. With support from Swine Innovation Porc (SIP), he has studied feed from every angle and continues to work on rendering it more effective, efficient and affordable.



Tell us about your background

I was born and raised in The Netherlands, where I completed a master's degree in the equivalent of animal science at Wageningen University. My family background is in dairy, so I came to enjoy dealing with animals from a young age. As I continued my education, I quickly realized that pig studies take less time than dairy research. I can be a bit impatient and working with pigs lets me get more done in a shorter period.

I then worked in the feed industry for a year before moving to the United States and earning a doctoral degree at the University of Illinois. From there, I was with the Prairie Swine Centre (PSC) for about eight years, eventually landing at the University of Alberta, where I've been for the last two decades.

Throughout all that time, feed and nutrition have remained relevant, as pigs must eat properly to grow, survive and reproduce.

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

This is the fourth iteration of the cluster program. Since Swine Cluster 1, I've been able to work with researchers from across the country on a variety of projects. It's a real advantage to team up with swine nutritionists and other scientists, discuss different research aspects and manage large scale studies together.

In Canada, it is critical that we have the means to support each other.

SIP has made that possible through all four clusters. We don't hesitate to pick up the phone or send an email as other opportunities arise, because we know each other so well now and enjoy our collaboration. That makes a tremendous difference to the quality of research and the viability of the outcomes. For me, that is the biggest benefit of the program.

Also, as a researcher, I must be careful in how and where I invest my time. I want to focus my efforts on studies that best benefit the pork industry, and SIP has enabled that.

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

Much of our work has focused on new feedstuffs or better use of existing ones – through processing or feed additives – during the grow-finish period. In the end, these efforts aim to lower the cost of feed per unit of gain.

Through various trials, we have examined aspects like nutrient digestibility and how maximizing that element can make nutrients more accessible to support gain. In western Canada, we tend to look more at locally available ingredients such as small grains, co-products such as canola, and pulse grains unique to western Canada like faba beans (co-products are valuable secondary products generated during the manufacturing process alongside the main product).

Pulse grains have an interesting quality that impacts the carbon footprint of pork production. Their roots bind more in the soil than do other crops. This allows subsequent crops to use less nitrogen fertilizer, which is a leading culprit in raising our carbon footprint.

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

Over the years, we have faced many hiccups as an industry, so it's gratifying when we see the pork sector making money. I've seen tremendous challenges arise for producers over the course of the four clusters, many related to cost of production and, specifically, feed costs. In response, we've had a positive impact on the cost of feed per unit of gain, helping to keep more dollars in producers' pockets.

What are your future research plans?

I plan to do further research on feedstuffs as they are such an important part of the industry. I intend to look more at novel protein feedstuffs and, when it comes to nutrients, focus on fiber, starch and carbohydrates. For much of my career, I've seen little effort in the area of fiber and starch, but it has gained interest of late. The link between fiber and starch and aspects like pig health, welfare and behavior warrants further study.

With my teaching these days, I am concentrating on the companion animal side. There are similar aspects of nutrition between pigs and these animals, so I think much of my previous work will translate nicely to other species.