

Plant Breeding Provides Tremendous Opportunities for Producers, Processors and Consumers



You could call him the billion dollar man. That's the value of grain produced annually from wheat cultivars developed by Agriculture and Agri-Food Canada plant breeder Ron DePauw.

But DePauw is not resting on his laurels. He's excited about the future and believes that today plant breeders have much more "genetic opportunity" than when he started his career 37 years ago. He does, however, believe there are at least two key factors that will make these opportunities become reality – strong partnerships between public breeders and private seed companies is vital, and intellectual property protection will also be required.

At the top of DePauw's list of breeding accomplishments is AC Barrie, a wheat variety that changed wheat growing in Canada. "AC Barrie really put a lot of incremental dollars in the pockets of Canadian farmers," says DePauw. "It had higher grain yield than the check variety at the time of its registration. Plus, incredibly, it had more protein content."

"What we did with AC Barrie was make a better plant – a more efficient factory – one that could extract nutrients and water from the soil more efficiently," says DePauw. In 2000, AC Barrie was grown on 47.5 percent of the Canada Western Red Spring (CWRS) wheat area in the country. "It represented a paradigm shift in the cultivars we had. And other ones that have come along since have followed in that type."

DePauw's accomplishments also include co-developing Lillian wheat, the first solid-stem wheat cultivar to become the most widely-grown CWRS cultivar across the prairies. His work has helped improve the quality, and disease and insect

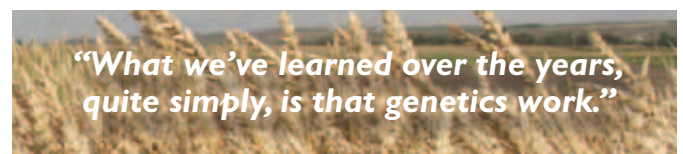
resistance of Canadian wheat; he was the main driver behind Canada's move into developing CPS-Red and CPS-White wheat classes; and the list goes on.

"What we've learned over the years, quite simply, is that genetics work," says DePauw. "And we have incredible opportunities in being able to reduce the business risks for the producers and the processors and to make safe and nutritious food for consumers."

What energizes DePauw is the potential for making plants more nutrient efficient, especially in the areas of nitrogen, phosphorous and water use. "Right now the nitrogen use efficiency of what you put to the ground runs from about 30 to 45 percent. So if you put on 1,000 pounds of nitrogen, which is very expensive, you're only using 350 to 400 pounds. The rest is gone," he explains. "If we could increase the nitrogen use efficiency by 10 to 15 percent we would be making a huge gain and I think we could do better than that."

Phosphorus is also important for plant growth, explains DePauw. "But we only have about 25 years of readily extractable P. And then we have another 25 years of difficult to extract P. After that we have a problem. That's not many years out."

But achieving these goals is going to take some work and the first step is to ensure a strong working relationship between the private sector and public breeders. DePauw would like to see more investment from private seed companies and understands the need to protect intellectual property rights. "We need policies and mechanisms that enable the private sector to invest in public programs," he says.



DePauw is eager to realize the tremendous potential that exists. "We have the genetic materials, and we need to get on and do the job."

This article is brought to you by the Canadian Seed Trade Association.