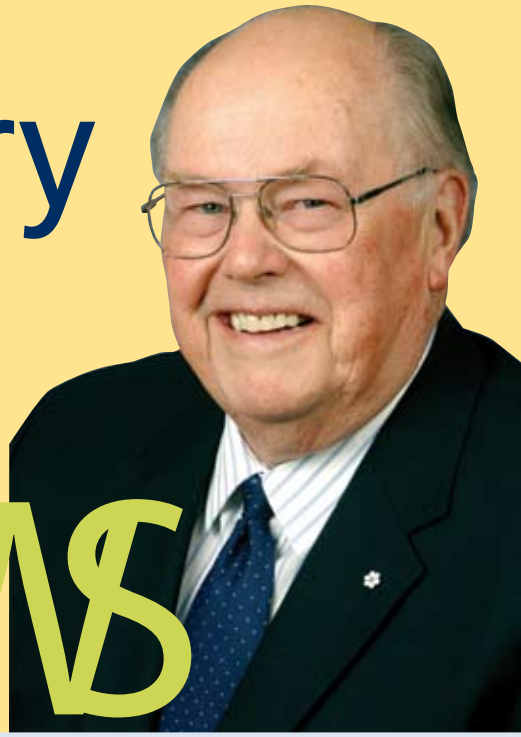
The Voluntary Oat Breeder

A retired research scientist continues his oat breeding work on a volunteer basis at Agriculture and Agri-Food Canada.



VERNON BURROWS

By Stephanie Fehr

VERNON BURROWS, Research Scientist Emeritus, had a long and fruitful career working in the oat breeding section of the Eastern Cereal and Oilseed Research Centre at AAFC, and he's not planning on slowing down any time soon. Burrows decided to volunteer his time after retiring in 1997 to continue the work he enjoys so much. The 75-year old says when he went to a retirement seminar he was given sage advice by the speaker: "They don't tell you this, but when you retire at 65 within 28 months half of (the people in this room) will be dead," recalls Burrows. "The ones that aren't are the ones that keep the computer going between the ears."

To keep that computer running, Burrows has a number of projects underway, including work on hulless oat varieties. These varieties have a thin, papery hull that is left in the field when threshing. The groat, or grain, is high in energy, protein, and antioxidants, which makes it a good choice for animal feed, especially for racehorses. "If horse owners fed hulless oats, they could save a lot of money," says Burrows. "They may say the horse needs fibre from the hull, but then they're paying seed prices for the hull. If they need fibre, they can add hay to the horse diet."

Hulless oats have the same amount of metabolizable energy as corn and enough good quality protein that they can be fed to pigs or poultry. And because it is a cool season crop it could potentially replace imported corn or soybeans for feed in Canada.

Burrows is also working with the Canadian Celiac Association to give celiac patients another food option. People with celiac disease are unable to eat products with gluten because it damages the absorptive surface of the small intestine. As a result, many important nutrients can't be absorbed into the body. This leads to a large number of other conditions, including osteoporosis (since calcium isn't absorbed) and anemia (due to iron deficiency). Patients also suffer from many other problems such as bloating, diarrhea, or constipation.

Gluten is found in many grains including wheat, barley, rye, or triticale. This means patients have a limited number of options when it comes to grains, namely rice, corn, sorghum, and millet. Most celiac patients can digest oats, but because of the handling system, commercial oats may contain small amounts of wheat, barley, rye, or triticale which contaminate oats with gluten.

To ameliorate this problem, Burrows is working on a system for producing pure oats. "In essence we'll be feeding pedigreed seed to celiac patients," says Burrows. In addition to using Select seed growers to grow these oats, Burrows says it is necessary to find processors willing to process only identity-preserved oats. "Processors can't use two different kinds of oats, they must be dedicated to using one form or the other. If they're dedicated to pedigreed seed, the Celiac Association has a trademark that can be put on packages that will tell patients it's a safe product."

Another human food project Burrows is working on is adding oats to rice. He's been working with the Chinese to enhance the nutrition available in this staple food. "We could improve the nutritional quality of rice if we had some oats mixed in," says Burrows.

However, Burrows considers bald seeded oats one of his most significant breeding accomplishments. The oat kernel contains little hairs on its surface called trichomes. Trichomes pose a problem to people who are threshing or handling the grain because once they are released into the air they act as skin, eye, and respiratory irritants and "drive people crazy". Burrows has spent the last 15 to 20 years working on bald seeded oats and while he has not yet released any, he hopes to release one in 2006.

His work has not gone unnoticed. Burrows has received a number of awards including the Order of Canada, an Honorary Life Member of the Canadian Seed Growers' Association, and a Friendship Award from the Chinese premier in recognition of his work there. He has also received the Grindley Medal from the Agricultural Institute of Canada and was made a Fellow of the AIC. All appropriate for a career driven by curiosity and commitment.