

Bringing Research to LIFE

In brief

Jayas elected as 2011 Foreign Fellow

Digvir S. Jayas, vice-president (research) and Distinguished Professor at the University of Manitoba has been elected as the 2011 Foreign Fellow into the National Academy of Agricultural Sciences (NAAS) India, for his outstanding contributions in the area of agricultural engineering and technology.

Jayas, the fifth researcher in Canada and the first Manitoban to receive this honour, is a leader in carrying out interdisciplinary research. He has integrated the work of entomologists, agricultural engineers, and mathematicians into the development of new methods of measuring, analyzing, and modelling (mathematically) the properties of grains, and heat and mass transfer in grain during storage.

Globally about 2 billion tonnes of grains, oilseeds, and pulses are produced annually and stored at different stages of the grain distribution chain between the producer and the consumer. The post-harvest losses for grains range from 1 per cent in some of the developed countries to 50 per cent in some of the less developed countries. Jayas' research and development in grain preservation techniques has had significant impact on reducing grain losses and has garnered him the Foreign Fellowship.

Jayas, was formally inducted on January 1, 2011 in India. The number of elected foreign fellows is limited to two in each successive year.

Upcoming event

Café Scientifique

Men's Health: Separating Fact from Fiction

Monday, Jan. 24, 2011 at 7 p.m.

McNally Robinson Booksellers
1120 Grant Avenue

**FREE ADMISSION
EVERYONE WELCOME**

To assist us in planning seating,
RSVP to: Research_Communications
@umanitoba.ca or (204) 474-9020

For more information:
<http://www.umanitoba.ca/research/cafescientifique.html>

Fighting the Good Fight

Researcher battles contamination in Northern regions

BY MELNI GHATTORA

Could you imagine being told your lifestyle and cultural practices are facing possible extinction? Pretty hard to imagine but for many Northerners living in the Arctic this is becoming a harsh reality.

"Northerners eat various mammal tissues as part of their diet. This is their tradition, their culture, their identity. They eat the liver or blubber of these mammals and the concentration of mercury is so high, we believe that their health can be at risk," explains Feiyue Wang, professor in the Department of Environment and Geography, who also holds a cross-appointment with the Department of Chemistry. Wang has been studying the interactions of trace element contaminants across environmental and biological interfaces.

Wang's research has found that levels of mercury (its organic form can cross the blood-brain barrier resulting in neurological damages) are increasing in Arctic marine mammals. "Extensive data indicate the mercury concentrations in the blood of Aboriginal women and women of child bearing age are overall higher than those who do not eat the traditional diet."

This is a very sensitive topic but also a very important one. "We don't want to say without sufficient evidence not to practice this diet because we know how important this is to their culture and values, but on the other hand, they don't have a lot of other choices," explains Wang. During his visit to Tuktoyaktuk, Wang saw firsthand how expensive it is to adopt a non-traditional diet in this region. A jug of milk runs upwards of \$10 and a dozen eggs averages at \$8.

While Wang and fellow researchers don't want to send the message suggesting Northerners need to alter their diets, they also can't ignore the high levels of contaminants found in mammals. "What we want to know is why the concentration of mercury is higher now than before."

Unfortunately a high level of contamination found in mammals is not the only issue that is affecting the Northerners way of living. November 2010 had the second-lowest sea ice extent in the Arctic Ocean for the month since the beginning of satellite records in 1979. We are living in a time of fast-changing sea ice conditions and this has a vast impact on ice-dependent animals and humans.

"To us, land is what we can set foot on, but for Northerners ice is their land. What we found is that it's either too thin or not forming and, as a result, food sources become scarcer," he explains. According to Wang, climate



Photo by Katie Chalmers-Brooks

Feiyue Wang, professor in the Faculty of Science and in the Clayton H. Riddell Faculty of Environment, Earth, and Resources, will be discussing his research on contamination at an upcoming public presentation.

change and chemical contamination are two very imminent issues that are very much interrelated.

"We have to fight these two together, as they are not two separate battles. You can't deal with chemical contamination without dealing with climate change and vice versa," says Wang. If we delay our response to climate change it will further affect other things such as our ecosystems. In the Arctic, climate change will not only mean you have less sea ice coverage and higher temperatures, it also means ecosystems could be more contaminated.

"We know we need to cut sources of mercury emission but we also need to know what is already in the system, how climate change will affect its uptake by animals, and how long does it take for mercury levels in animals to respond to emission controls?" Wang will be heading back to the Arctic soon to rejoin his research team and to gain a better understanding of the two battles on one front.

Wang will discuss his research on Wednesday, Jan. 19, at 7 p.m. at McNally Robinson Booksellers, 1120 Grant Avenue, as part of the *Bringing Research to Life* Speaker Series.