

New Investment into Feed Enzyme Research in Canada

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CANADA - Concordia researcher Adrian Tsang is awarded Genomic Applications Partnership Program funds to develop and commercialise a next-generation enzyme supplement.

Appeasing the appetites of livestock does not come cheap. In fact, feed eats up some 70 per cent of the cost of producing the pork and poultry consumed in Canada, reports Concordia. Yet as much as one quarter of that feed does not actually do much, because the animals lack the enzymes that would allow them to digest it. Delivering those enzymes is big business, amounting to C\$800 million a year globally — a number that is expected to grow steadily, by up to seven or eight per cent annually.

Elanco Animal Health, a division of the global pharmaceutical firm Eli Lilly and Company, is partnering with Concordia's Centre for Structural and Functional Genomics (CSFG) to develop new enzyme combinations for pork and poultry producers.

The funding — worth C\$6 million over three years — is part of Genome Canada's Genomic Applications Partnership Program (GAPP). The GAPP partners academic researchers with industry to translate innovations that are expected to have a considerable economic and social impact in the near future.

The Concordia-Elanco project will begin by screening proprietary enzymes for the digestibility of common ingredients found in Canadian pork and poultry feed.

Ultimately, the goal is to create commercial products specially suited for the diverse Canadian feed market. These are expected to bring about significant improvements in feed conversion, and thus improve producer profit margins.

Moreover, the project will help the global food chain deliver a safe, affordable food supply — critical in the face of population growth and a looming international food security crisis.

"Globally, 600 million tons of grain are used for swine and poultry feed each year, which take up more than 60 million hectares of valuable farmland," says Adrian Tsang, director of CSFG. "Our goal with this project is to reduce strain on the environment due to decreased animal waste, and to improve overall animal growth and health."

For Concordia, such partnerships with industry are crucial in applying research to marketplace solutions that benefit Canadians and the rest of the world.

"Elanco is globally respected for its innovative work on animal health, and our partnership with them underlines the outstanding contributions that Concordia research is making in addressing the major food and environmental challenges of our time," says Graham Carr, vice-president of Research and Graduate Studies.

"Adrian and his colleagues are truly world leaders, both in advancing fundamental genomics research on enzymes and translating those discoveries into real world applications. We are immensely proud of them and their work."

Dr Tsang is excited to put his research in motion. "My work has always been focused on environmental sustainability," he says. "To feed the growing population at a time of rapid climate change and dwindling fertile land, agricultural practices need to be more efficient and sustainable. This is exactly what I hope we can achieve through this project."

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