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THE BUZZ



News about the Ontario Ministry of Agriculture, Food and Rural Affairs – University of Guelph Partnership

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Welcome Readers!

You've come to the right place to read the latest success stories from Partnership-funded programs in Research, the Agriculture & Food Laboratory, Animal Health Laboratory, and Veterinary Clinical Education. Enjoy!

Fun Partnership Facts: Test Your Knowledge

(Hint: answers are found in the articles below)

1. How many milk samples does the Agriculture and Food Laboratory test each year?

a) 8,000 b) 80,000 c) 800,000

2. What percentage of fruits & veggies are wasted (due to spoilage) in developed countries?

a) 10% b) 25% c) 40%

[Answers below](#)



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Chickens in Your Backyard?

Backyard chickens have



become increasingly common. But as non-commercial flocks, they mostly 'fly under the radar' of disease surveillance. To get a better picture of the prevalence of their infectious diseases (viruses, bacteria, parasites), OMAFRA and U of G, through the Animal Health Laboratory (AHL) and the Ontario Animal Health Network, have started a two year [surveillance study](#) that runs till Sept. 29, 2017.

Owners of small flocks of chickens, turkeys, gamefowl, geese and ducks are encouraged to submit any dead birds in their flock, through their veterinarian, to the AHL for examination and testing at a discounted fee. Results will be used to develop educational tools to improve the health and welfare of backyard flocks.

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Full proposals due Mar. 4
(for invited LOIs)

[Gryphons LAAIR](#)

Applications due Mar.9

Balancing Production and the Environment

\$\$\$ Dept. of Geography's Wanhong Yang and his team are developing a [user-friendly WebGIS interface](#) that will allow farmers to evaluate economic costs, water quality benefits and cost effectiveness of individual and multiple Best Management Practices on their farms. They'll be able to view BMP effects at field, farm, and watershed scales.

Yang's team is developing a prototype version of the interface program for the Gully Creek watershed in shoreline areas of Lake Huron, which will have the potential to be transferred to other agricultural watersheds in Ontario.



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Faster ID of E. coli in Foodborne Illness

The [Agriculture & Food Lab](#) has found an improved method of identifying 'STEC' bacteria, the 'Shiga toxin producing E. coli' strains most often responsible for foodborne illness. Current methods of identifying STEC bacteria have been time-consuming and not always

consistent.

The AFL was awarded an OMAFRA Food Safety Research grant to work with the Public Health Agency of Canada to verify the improved method. If it passes the test, it will be included in the Canadian Compendium of Analytical Methods and greatly improve the speed and accuracy of identification - both important factors in managing outbreaks.



E. coli O157.

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No Easy Answers for Antibiotic Alternatives



Zinc is used as an alternative to antibiotics in human and animal health care. Efforts to reduce antibiotic use and a move to alternative antimicrobial products such as zinc is mainly driven by concern that overuse of antibiotics promotes antimicrobial resistance. However, a research project conducted by Mackenzie Slifierz, under supervision of OVC's Profs. Robert Friendship and Scott Weese, revealed that alternative antimicrobial products such as zinc can be associated with *increased* prevalence of bacteria carrying multiple antibiotic resistance.

This research showed that the increased likelihood of finding methicillin-resistant *Staphylococcus aureus* (MRSA) in pigs was related to the use of high levels of zinc in pig starter rations. It also shows how complicated antimicrobial resistance can be, and that moving to "antibiotic-free" production might produce unexpected consequences.

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Putting the Brakes on Spoilage



Fresh fruits and vegetables require careful handling from the time they are picked, and have a short shelf life in the supermarket. Prof. Gopi Paliyath of the Dept. of Plant Agriculture and many colleagues including Jay Subramanian, Alan Sullivan, and Loong-Tak Lim have researched the biochemical process of spoilage.

They found a plant-produced substance called hexanal that [inhibits the enzyme phospholipase D](#), a key component of the spoilage process. It's safe for humans and orchard organisms, and can be applied to the tree to prevent fruit dropping, or to the fruit after it's picked. Amazingly, it can extend shelf life up to 4-6 weeks, depending on the fruit. Next up for the researchers? The possible incorporation of hexanal into packaging to make its delivery more efficient.

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Answers to Fun Partnership Facts

1. The Agriculture and Food Lab tests more than 800,000 milk samples every year.
2. In developed countries such as Canada, it's estimated that 40-60% of produce is discarded due to spoilage.

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Upcoming Events & Publications

OMAFRA - U of G Research Forum: Product Development Research,

Mar. 21, 2016

http://www.uoguelph.ca/omafra_partnership/ktt/en/calendar/Details.aspx?Id=e323dd52-f1bb-4858-b590-562ac0adc89f

OMAFRA - U of G Research Forum: Food for Health - Where Research & Product Development Meet

April 7, 2016

Website not yet available. For information email: barbara.dillingham@ontario.ca

U of G Animal Health Lab: latest newsletter

<http://www.guelphlabservices.com/files/AHL/AHL%20Newsletters/2016/March%202016/ANwsl20-1-Mar2016-pub2010.pdf>

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For more information on the OMAFRA - U of G Partnership Agreement, go to the website at:

http://www.uoguelph.ca/omafra_partnership/en/index.asp

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