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NEW LAB AVAILABLE FOR ANTIMICROBIAL AND PREBIOTIC RESEARCH

AMES, Iowa — A new lab at Iowa State University that enables quick identification of antimicrobial and prebiotic compounds is available to researchers working on preventing food spoilage, improving food quality, controlling foodborne pathogens, or enhancing growth of probiotic bacteria.

The Discovery Lab allows researchers to test various plant, microbial or animal sources to determine whether they have antimicrobial or prebiotic properties. It is being operated within the university's Center for Crops Utilization Research for on- and off-campus clients.

“The Discovery Lab is unique in that it uses cost-effective approaches to rapidly obtain growth measurements of micro-organisms using a minimum of equipment and space,” said Dr. Aubrey Mendonca, professor-in-charge of the Discovery Lab.

The Lab operates two Bioscreen C Growth Curve units to perform automated growth curve determinations of aerobic or anaerobic microbes under a variety of conditions. Organisms that can be evaluated include a wide variety of foodborne pathogens and bacteria as well as selected yeasts and molds.

“The units are capable of incubating and evaluating up to 200 different microbial cultures and their growth parameters in a single experiment,” said Mendonca. “Data can be generated in a few days compared to several months using conventional techniques.”

Researchers at Iowa State use the Bioscreen units to test anti-microbials against pathogens such as *Escherichia coli*, *Staphylococcus aureus*, *Listeria monocytogenes* and *Salmonella*, sp. He said food companies could benefit from this lab, especially in instances where suitable natural antimicrobials are needed to meet growing consumer expectations.

In addition, the lab includes a Bioscreen unit mounted in an anaerobic chamber that allows scientists to study anaerobes including probiotics and ruminant bacteria.

“This is important from a food safety standpoint, because some anaerobic bacteria are responsible for outbreaks of food poisoning,” said Bill Colonna, assistant scientist in the Discovery Lab. “It also allows for improved detection methods for organisms like *Clostridium perfringens* — an anaerobe that is a common cause of foodborne disease”

Other equipment in the Discovery Lab includes analytical and preparative high-pressure liquid chromatographs, a UV-visible spectrophotometer, an organic spray dryer and laminar-flow hoods. The lab can provide both analytical and preparative services to clients on a fee basis for on- and off-campus users.

For more information about the Discovery Lab, visit <http://www.ccur.iastate.edu/facilities/discovery.html>