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Toronto, Canada**Developing a novel green feed additive as alternative to feed antibiotics in poultry**Gayatri Suresh¹, Satinder Kaur Brar, Antonio Avalos Ramirez², Moussa Diarra and Ismail Fliss⁴¹Université du Québec, Canada²Centre National en Électrochimie et en Technologie Environnementales Inc., Canada³Agriculture and Agri-Food Canada, Canada⁴Université Laval, Canada

Administration of antibiotics in animal feed at sub-therapeutic levels has been associated with growth promotion; however their indiscriminate use has led to a significant increase in the emergence of drug resistant strains. Additionally, antibiotics are also being identified as emerging environmental contaminants. Hence, it has become critical to develop effective green alternatives to feed antibiotics, without affecting livestock productivity. In this work, we propose a novel formulation based on a combinational approach comprising of a pyroligenous liquid, enzyme, organic acid and yeast proteins that can be used in lieu of feed antibiotics in poultry. The enzyme, organic acid and yeast biomass have been produced by solid state and submerged fermentation using agriculture wastes as substrates, thus making the process cost effective. Qualitative tests by well

diffusion method have confirmed the antibacterial activity of the pyroligenous liquid against several Gram positive and gram-negative bacteria, with maximum activity against *Salmonella enterica* and *Listeria monocytogenes* which are two of the most common bacterial pathogens associated with poultry. Antibacterial activity was also observed at very low concentrations of the pyroligenous liquid. The other components are being tested for their antimicrobial activity against common poultry pathogens.

Speaker Biography

Gayatri Suresh is currently pursuing her PhD in Water Science from Institut National de la Recherche Scientifique (Eau, Terre et Environnement) at Québec city in Canada. She has Master's in Microbiology from University of Pune, India, and is currently working on developing an alternative to antibiotics in poultry.

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