

## **Organic Poultry Production: Developing Natural Solutions to Reducing Pathogens and Maintaining Gut Health**

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Organic poultry production is one of the fastest growing segments of organic agriculture (20% increase/yr since the establishment of the National Organic Program). Despite the fact that most management practices in organic production are designed to promote bird health and prevent disease, the lack of consistently effective organic treatments for enteric diseases can adversely influence the bird's health and the wholesomeness of poultry products. Enteric diseases such as necrotic enteritis and food safety hazards caused by the pathogens *Salmonella* and *Campylobacter*, are high priority issues for organic poultry producers. Therefore, there is a critical need to develop strategies to promote gut health and limit disease/pathogens in these birds. Research from our laboratories indicates that natural compounds such as fatty acids and essential plant oils have antimicrobial efficacy against poultry enteric pathogens and could provide solutions to address food safety and disease concerns in organic production systems. These selected compounds are all natural, have been listed as "Generally recognized as safe" (GRAS) by the Food and Drug Administration (FDA), and have demonstrated significant antimicrobial properties. Data have shown that compounds such as essential plant oils and the fatty acid caprylic acid, offer a potential safe and effective strategy for the control of health problems in organic poultry and comply with National Organic Program standards. These organic standards may require more outdoor space in the future. Forages high in protein can provide supplemental nutrients for the birds and woody perennials such as trees and shrubs can be incorporated to provide shade/shelter and crops such as mast, berries. Funded in part by the SSARE LS10-226.