

# Dietary yeast extracts tested as alternative to antibiotics in poultry

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A dietary yeast extract could be an effective alternative to antibiotics for poultry producers, according to a U.S. Department of Agriculture (USDA) study.

Microbiologist Gerry Huff with USDA's Agricultural Research Service (ARS) in Fayetteville, Ark., and her colleagues have been studying the effects of yeast extract as an immune stimulant and alternative to antibiotics in conventional turkeys. Non-pharmaceutical remedies and preventatives are particularly needed for organic poultry production, according to Huff, who works in the ARS Poultry Production and Product Safety Research Unit (PPPSRU) in Fayetteville.

ARS is USDA's principal intramural scientific research agency, and this research supports the USDA goals of ensuring food safety and promoting international food security.

Initial studies suggest that dietary yeast extract has good potential as a non-antibiotic alternative for decreasing pathogens in organic turkey production. A larger study was needed to confirm its efficacy.

But it is expensive to work with turkeys because they eat more than other birds, according to Huff. So the researchers are testing yeast extract in Japanese quail to test the extract's efficacy against Salmonella and Campylobacter. The quail serve as a model system to evaluate natural treatments that will be beneficial for chicken and turkey production. Huff's current study, in collaboration with Irene Wesley at

the ARS National Animal Disease Center in Ames, Iowa, involves 800 Japanese quail.

Yeast extracts help boost the immune system's ability to kill bacteria, but there is also a downside. According to Huff, yeast ramps up certain aspects of the immune response, but body weight may be decreased in some birds. That's because the energy normally used for growth is redirected toward the immune system. The researchers are looking for a balance between enhancing immune response and maintaining growth.

Organic [poultry farms](#) can only use compounds on the National List of allowed substances for organic production. Yeast extract is on that list.

Alternatives to antibiotics are also needed for conventional poultry production, since regulations for the usage of antibiotics are being tightened in response to the prevalence of antibiotic resistance in pathogens.

**More information:** This research was published in Poultry Science and British Poultry Science.

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