

2023 FEBRUARY ISSUE

In this issue, you will read research summaries from

- 🐔 4 Broilers studies
- 🥚 6 Layer/Breeder studies
- 📖 1 Literature review

from 9 research institutes in 4 countries



NUTRITION NEWSLETTER

THE POULTRY NUTRITION NEWSLETTER IS BROUGHT TO YOU BY



Department of Poultry Science
College of Agricultural & Environmental Sciences
UNIVERSITY OF GEORGIA

NUTRIBINS

LATEST NUTRITION RESEARCH AT A GLANCE

POULTRY

During early embryonic development of chickens, **H2O2-induced oxidative stress** (via microinjection) led to changes in bone formation gene markers, with chronic effects on embryonic development (decreased embryo length).

University of Georgia/Link

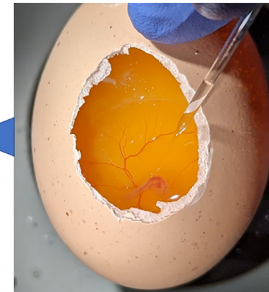
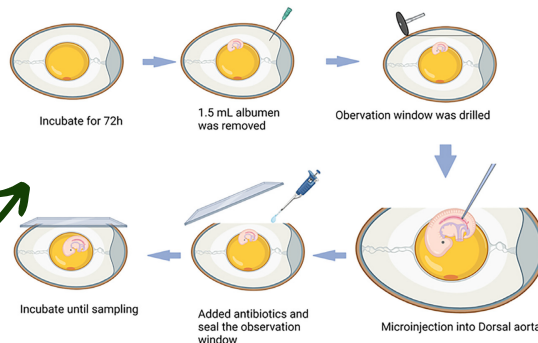


Fig. Illustration of the microinjection of chicken embryos at ED 3.

In chicken breeders from 57 to 67 weeks of age, feeding a **complex of protected biofactors and antioxidants** (vitamins + fermentation extracts) provided transgenerational protection to the progeny against *Salmonella enteritidis* infection.

North Carolina State University/Link

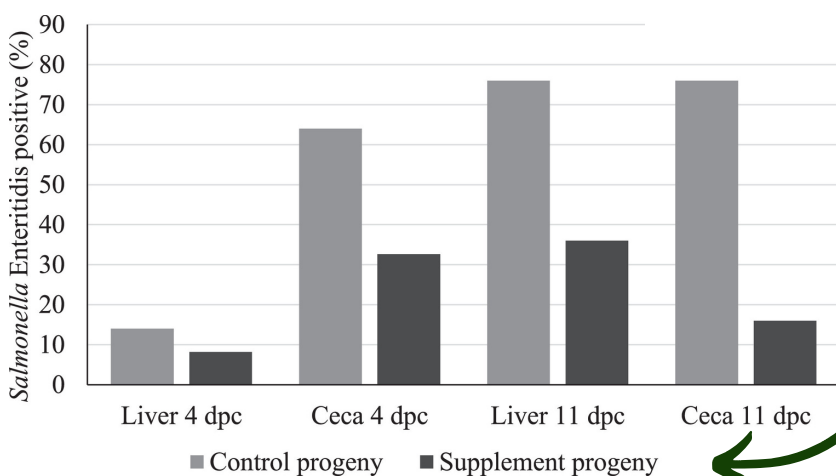


Fig. Percentage of Salmonella Enteritidis positive liver and ceca samples 4- and 11-days-post-challenge in progeny.

In laying hens (Lohmann LSL lite hens, 30-wk-old), feeding graded levels of **enzymatically treated yeast** showed that 0.1% or 0.2% inclusion rates reduced egg production rate, but with increasing inclusion rate, a linear improvement in egg weight and shell quality were observed.

University of Guelph/Link

In laying hens after coccidia and *Clostridium perfringens* challenge, supplementing a **blend of benzoic acid, enterococcus faecium, and essential oils** at 2 g/kg restored production performance and reduced gut damage scores.

Sichuan Agricultural University/Link

Egg laying rate of layers after challenge

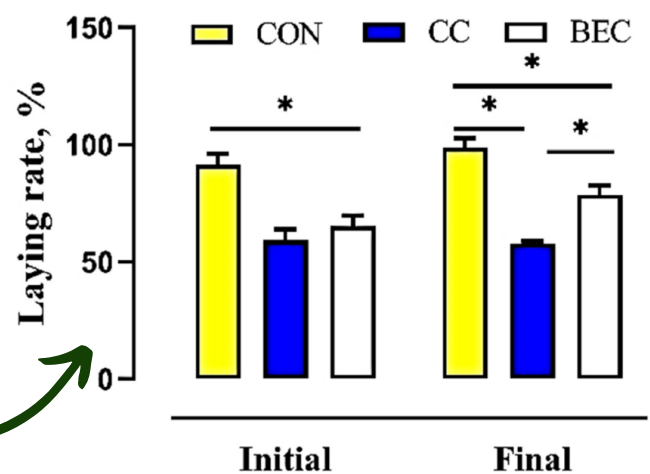


Fig. Egg-laying rate and average daily feed intake after challenge.

In brown-egg laying hens, an increase in **Ca content of the pre-lay diet** from 2.5 to 3.8% improved shell quality for the entire egg cycle without showing any negative effect on hen production.

Universidad Politécnica de Madrid/Link

POULTRY

LATEST NUTRITION RESEARCH AT A GLANCE

In white laying hens, eggs and tissue of layer hens fed the **full-fat high-oleic acid soybean meal diet** were higher in oleic acid while the CF and CP digestibility remained similar to the digestibility of the other diets.

North Carolina State University/ [Link](#)

In broilers, replacing soybean meal by **black soldier fly larvae meal** at 12.5 and 25% in the starter phase may be used as an alternative to antibiotics (bacitracin methylene disalicylate).

University of Western Ontario | [Link](#)

In broilers, feeding 200 mg/kg **coated cysteamine** improved performance, total tract nutrient retention, and gut morphology, while feeding uncoated cysteamine did not have such effect.

Chinese Academy of Agricultural Sciences/ [Link](#)

In the new Cobb MV broiler strain, increasing dietary **lysine level** from 0.94% to 1.18% improved performance and carcass yields; 1.10% lysine was determined to be the most profitable level in both sexes.

Mississippi State University/ [Link](#)

In broiler finishers (25-35 days of age), the recommended SID Ca requirements (at 3.5 g/kg SID P) for weight gain (3.5 g/kg or 6.4 g/kg total Ca) and tibia ash (3.0-3.5 g/kg or 5.5-6.4 g/kg total Ca) are lower than the current Ca recommendations (7.8 g/kg total Ca equivalent to 4.25 g/kg SID Ca; Ross, 2019) for broiler finishers, **suggesting possible excess of Ca in diets formulated based on the current recommendation.**

Massey University/ [Link](#)

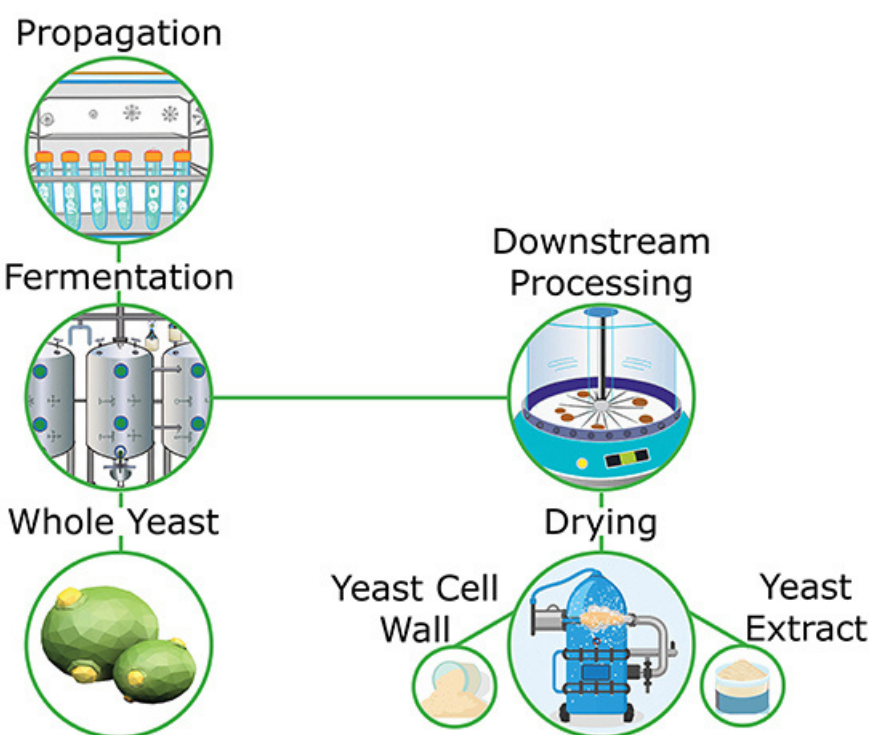


Fig. Overview of whole yeast and yeast derivative production

Review

Yeast derivatives as a source of bioactive components in animal nutrition

From improving feed efficiency, to serving as alternatives to antibiotic growth promoters and supporting intestinal health and immunity while mitigating pathogen shedding, new use cases are driven by a recognition that **yeast derivatives** contain specific bioactive compounds that possess functional properties. This review will attempt to highlight key bioactive categories within industrially applicable yeast derivatives and provide context regarding identification and characterization and mechanisms of action related to efficacy within a range of experimental models.

University of Guelph | [Link](#)