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9 Broilers studies
3 Layer/Breeder studies
1 Duck study
4 Literature review
from 16 research institutes in 10 countries

NUTRITION NEWSLETTER

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THE POULTRY NUTRITION NEWSLETTER IS BROUGHT TO YOU BY



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LATEST NUTRITION RESEARCH AT A GLANCE

POULTRY

In laying hens, **dephenolized cottonseed protein** (DCP) was added to replace 10, 12, and 16% of the gross energy. The DCP did not have a negative impact on daily feed intake or egg production. The AME value of DCP may not reflect the nutritional value of the feed, where the NE value of DCP with a high ME value was not necessarily high.

China Agriculture University/[Link](#)



In laying hens, decreasing dietary dAA/CP level to 85% leads to a reduction in egg production, egg mass, feed conversion ratio, and egg income. When dAA/CP ratio was 90% or 95%, supplementing **protease** maintained performance and improved the digestibility of Lys, Thr, Trp, and Val.

Mississippi State University/[Link](#)

In Hyline brown laying hens (53-63 weeks), supplementing 0.05% **quercetin** improved laying rate and FCR likely through enhancing antioxidant status, modulating hormone levels and cecal microflora; supplementing 0.03% daidzein did not affect performance.

Northeast Agricultural University/[Link](#)

In young broilers, different **corn particle sizes** (CPS, 832, 1432, and 2036 μm) in crumble starter diets did not significantly affect the performance, organ weights, and digestibility at age 21 d; However, increasing CPS worsened FCR and decreased proventriculus weight.

Auburn University/[Link](#)

In broilers, supplementing higher concentrations of **biochar** (2.0%, derived from the pyrolysis of pistachio shells) may negatively affect the apparent ileal digestibility of young broilers, but has no effects on the overall growth performance.

USDA-ARS/[Link](#)

In broilers, supplementing **spray-dried porcine plasma** in the starter phase enhanced feed efficiency and gut integrity in Necrotic-Enteritis challenged broilers, possibly through manipulating the immune response,

University of New England/[Link](#)

In broilers, supplementation of **Guanidinoacetic acid** (GAA) at 0.12% reduced the breast muscle myopathies (woody breast, white striping, and woody-like tenders) without adversely affecting growth performance.

University of Arkansas/[Link](#)

In broilers, supplementing 100 mg/kg **Refined functional carbohydrates** improved ADG and inhibited E. Coli and Salmonella proliferation, while modulated antibody titer against avian influenza virus H9.

China Agricultural University/[Link](#)

POULTRY

LATEST NUTRITION RESEARCH AT A GLANCE

In finisher Ross 308 broilers under chronic cyclic heat stress model, supplementing 0.6 to 1.2 g/kg **guanidinoacetic acid** enhanced muscle energy metabolism, which may indirectly support tolerance against oxidative stress.

Ghent University/ [Link](#)

In broilers, supplementing **fermented feed** (wet or dry, 10-25%) improved growth performance, immune organ development and capacity, and decreased cecal odorous compound production, which may be related to the regulation of microbial composition.

Shenyang Agricultural University | [Link](#)

In broiler breeders (45 weeks of age) fed using **3 feeding strategies**: standard diet fed once a day **vs.** standard diet fed twice a day **vs.** split-feeding twice a day where the morning diet contained more energy, protein, P and less Ca than control and afternoon diets, showed that split-feeding tended to improve egg production, while no effects were observed on eggshell quality and incubation traits.

Wageningen Livestock Research | [Link](#)



In broilers, supplementing **yeast cell wall** at 0.05% didn't affect overall performance, but improved FCR from d 8-21 and modulated intestinal morphology, ileal microbiota, and immune responses.

Chungnam National University | [Link](#)

In turkeys, replace 50% inorganic minerals with **chelate compounds-based trace minerals** did not impact performance, while increased tibia ash and phosphorus content; 100% replacement improved growth performance, bone health, gut morphology, and antioxidant status.

Arak University | [Link](#)

Review#1

Life cycle assessment in the broiler industry

The goal of this systematic review is to investigate the applicability of the results from existing **life cycle analysis** (LCA) and environmental assessments studies in informing nutritional strategies for environmentally sustainable poultry meat production...It is concluded that the broiler industry in UK, EU and North America cannot rely on results of existing LCA and environmental assessments studies to inform their nutritional strategy and poultry meat production due to a shortage of reliable in vivo data assessing interventions in controlled studies.

Nottingham Trent University | [Link](#)

Review#2

Yeasts and yeast-based products in poultry nutrition

Yeast and yeast fermentation products could become alternatives to antibiotics to improve the production and health of chicken. The review introduced and summarized avian gut microbiota, composition of yeast cell, the effects of yeast and yeast-based products and their mode of action.

University of Georgia | [Link](#)

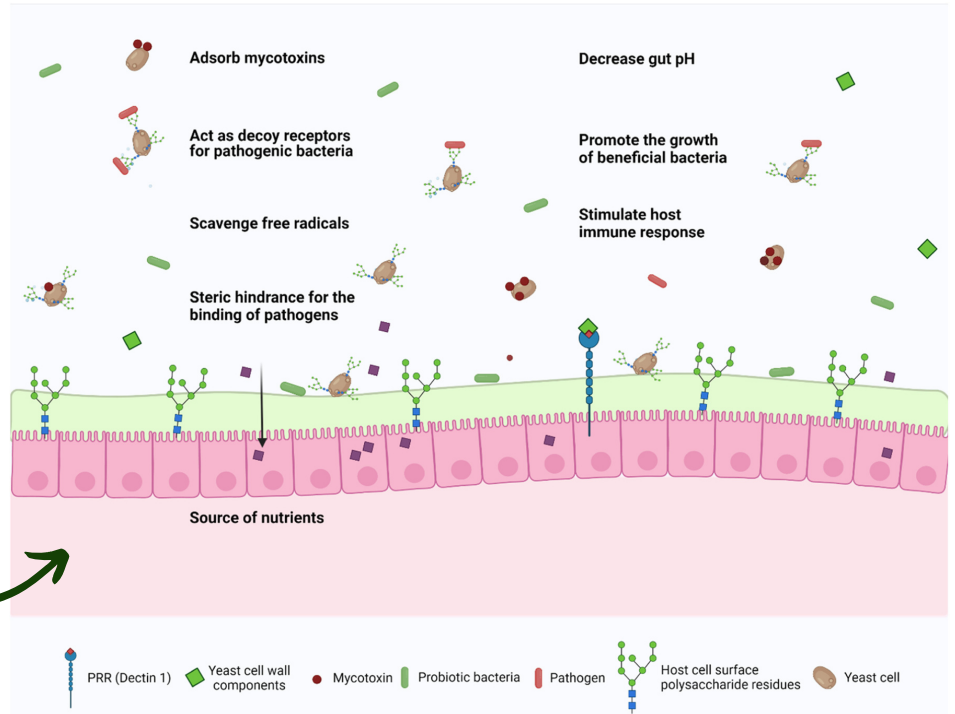


Fig. Mechanism of action of yeast-based probiotics and prebiotics in chicken.

Review#3

Factors affecting starch digestibility rate of maize grain in poultry

Multiple **intrinsic and extrinsic factors of maize affect the overall starch digestibility**. One of the main factors is amylose-to-amylopectin ratio within the native grain, with increased amylose-to-amylopectin ratios having higher apparent ileal digestibility. Non-starch components within the grain can also lead to decreased digestibility, such as higher lipid content. Starch-lipid complexes reduce enzyme contact with the starch and increase hydrophobicity of the starch. Externally, processing, storage and handling of the maize can negatively or positively impact digestibility. More research is needed however on the hydrothermal processes and their impacts on grain digestibility in poultry.

University of Zagreb | [Link](#)

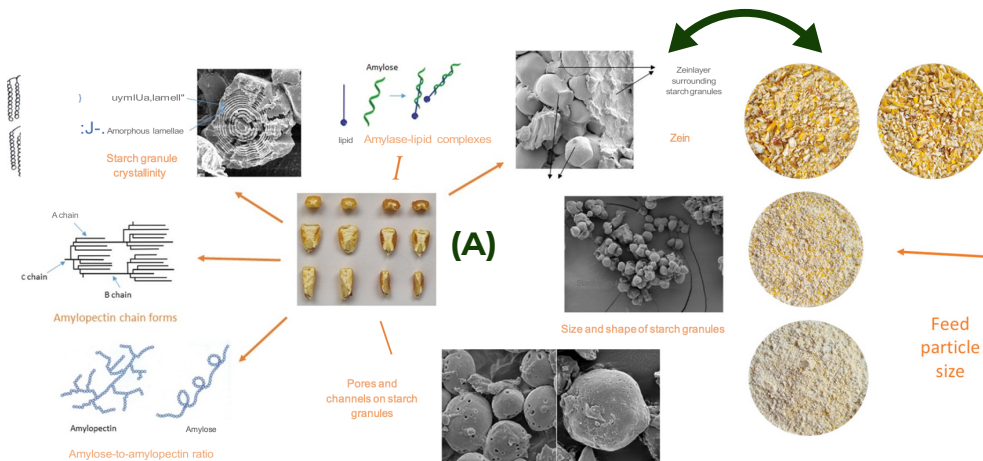


Fig. Intrinsic (A) & Extrinsic (B) characteristics of maize affecting starch digestibility rate.

Review #4

Guinea fowl production in the world

The **guinea fowl's production** occurs in Africa, Asia and Latin America mostly in the free-range system. Guinea fowls are an alternative source of high-quality meat and eggs. The current review introduced guinea fowl origin and characteristics, hatching, nutrition management, egg and meat production, and its global panorama.

Federal University of Minas Gerais | [Link](#)