Erbil Polytechnic University Shaqlawa Technical College Department Of Veterinary

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Non Nutrient Additive On Poultry Diet

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Introduction

Poultry production faces increasing challenges related to efficiency, sustainability, and animal welfare. In this context, attention has shifted towards non-nutrient additives as potential tools for improving poultry health and performance.



Types Of Non Nutrient Additive

1. Flavoring agents

- Sodium thionate (dehydrated silica)
- Derivatives of lignin (lignosol)
- By-products of the grain industy
- Cellulose products (products of the wood pulp industry)

4. Antibiotics

- Virginiamycin
- Tetracycline

7. Hormones

Glucagon

5. Pro/prebiotics

- Garlic
- Lactobacillus

8. Enzymes 9. An

- Lipase
- Cellulase
- protease

2. Antioxidants

- Ethoxyquin
- (BHT)
- (BHA)

3. Growth promoters

- Bacitracin
- Garlic
- Cellulose

6. Antimicrobial-anticoccidial•nitrofurazone

9. Anti mycotoxins

10. Others

Effects of feed additives on poultry physiological processes



01 Gut health

02 Immune function 03 Oxidative stress







04 Growth performance



05 Stress reduction



Gut health

Certain additives, such as probiotics, prebiotics, and organic acids, can modulate the gut microbiota composition and improve gut health. They promote the growth of beneficial bacteria, inhibit the proliferation of harmful pathogens.



Immune function

Non-nutrient additives like immunomodulators and herbal extracts can bolster the poultry immune system, enhancing disease resistance and reducing susceptibility to infections.



Oxidative stress management

Antioxidants such as vitamins E and C, selenium, and plant extracts help mitigate oxidative stress in poultry by neutralizing free radicals and reducing oxidative damage to cells and tissues.



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Growth performance

Growth promoters, such as phytogenic compounds, probiotics, and enzymes, can enhance growth performance in poultry by improving nutrient digestibility, feed conversion efficiency, and nutrient utilization.



Stress reduction

Certain additives, such as adaptogens and stress-relieving herbs, can help alleviate stress in poultry by modulating the hypothalamic-pituitary-adrenal (HPA) axis and reducing stress hormone levels.





Common Types Of Non Nutrient Additive

Antioxidants

Act as protective agents against oxidative damage caused by free radicals. Their presence is essential in the face of challenges such as feed processing, storage, and the susceptibility of certain ingredients to oxidation. vitamin E and selenium.

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02



Growth promoters

01 Antibiotics



02 Pro/pre biotics



03 Enzymes

03

04



04 Organic Acids













Benefits of Antibiotic

The benefits of antibiotics in animal feed include increasing efficiency and growth rate, treating clinically sick animals and preventing or reducing the incidence of infectious disease.



The risks of using antibiotics

The utilization of antibiotics in poultry diets poses significant risks to both animal and public health. Prolonged antibiotic use contributes to the development of antibiotic-resistant bacteria within poultry populations, potentially leading to the transmission of these resistant strains to humans through the food chain.



How to reduce the need for antibiotics

The three main measures to prevent infectious disease on a farm: Good animal husbandry is the basis for robust and healthy animals (e.g. quality of feed and water, good ventilation, efficient inspection of the animals)



Probiotics and Prebiotics

- Prebiotics: are non-living substances which promotes the growth of probiotics
- Probiotics: are the microbial culture which promote gut health through competitive exclusion



Enzymes

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- Enzymes are proteins that are involved in all anabolic and catabolic pathways of digestion and metabolism.
- They contribute to better feed efficiency, nutrient absorption, and overall digestive health.
- Endogenous vs exogenous enzymes





Organic Acid

- The term "organic acid" refers to a broad class of compounds used in fundamental metabolic processes of the body.
- Salmonella,Campylobacter and Escherichia coliwhich can be controlled by supplementation of an organic acid in diet



Antimicrobials and anticoccidials

Antimicrobial agents are essential tools for treating and controlling bacterial infections in poultry production.

• The antimicrobial groups most commonly used in poultry are the: polypeptides, aminoglycosides and, macrolides, tetracyclines, sulphonamides,

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anticoccidials are essential components of poultry diets for the prevention and management of coccidiosis,
Coccidiosis is caused by protozoa of the phylum Apicomplexa, family Eimeriidae.
Anticoccidial drugs include: Amprolium , Nicarbazine, Salinimycin, Monensin

Hormones

1- There are natural and synthetic hormones 2- Hormones are used to improve the rate of meat production on poultry 3- Eestradiol, progesterone, testosterone, zeranol, trenbolone, and melengestrol are the most common anabolic hormones 4- cause increased leg problems and even early death (poultry) 5- breast cancer and polycystic ovary syndrome (humans)



Conclusion and Recommendations

Poultry is an important source of animal protein, as it is considered an essential and effective pillar in filling an important part of the human nutritional needs. All animals need to receive a nutritious diet in order to maintain good health and production. Many additives are usually a part of diets for animals and humans



Thank you For Listening

Any Questions