



EVALUATING OF IRAQ AND POLISH FEED ADDITIVES IN POULTRY FEEDING

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ABSTRACT

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Nowadays, additions in poultry feeding are a must in any product of factories producing feedings due to their importance in enhancing general health of birds. this importance of additions comes from enhancing growth, stop diseases. to enhance physical properties of feedings, their nutritional value as well as enhance features of storing feedings. compositions of feedings, the additions differ according to type of animals, their surrounding environment, and between one country and another. Thus, came idea of this research: to know additions to feedings between Iraq and Poland. Differences come from type of poultry, structure of feeding. researchers depended on literature framework statistics because this research is a case study of two different countries in two different continents. Iraqi poultry industry was and still dependent greatly on importing important production items like hackles, basic feeding ingredients like yellow corn, soybean meals, protein concentrate, medicines and vaccines.

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INTRODUCTION

Feeding additions are all nutritional and non-nutritional materials added to feeding mix in relatively small portions such as (vitamins, mineral salts, aminic acids, anti-fungal, anti-coccidia, anti-oxidants biotics and enzymes, etc.) there are other additions like critics and alics (such as citric acid – formic – sorbic). function of these additions makes up for lack of acidity in stomach, decrease stomach acidity and acidity, and digestive system. raise production of pepsin enzyme to digest protein, increase time of food spent inside stomach, for more suction, to malfunction work of sickening germs, stop their growth and multiplying in stomach. to give animal immunity enhance production of saliva. as a result, increase consumption of feed and growth (Alazawi, 2010).

There are a lot of vegan dyes like (Liotin) found abundantly in clover and (xacsathlin) found in yellow corn. these dyes are known as (carotins) named (zanthovil), the dye found in yolks, skin of chicks and settling fats. antibiotics, unilateral glucose, chemical boosters play important role in decreasing and stop bad germs found in testing of animals and birds, provide protection also from diseases, keep animals healthy boost good germs.

Aims of Research

This research aimed to:

1. know natural feed additives in poultry farms to achieve sustainable development.
2. know, importance of additives to poultry feedings.
3. know conditions to be fulfilled in feeding additives.
4. know additives, of poultry feed.
5. know ingredients in poultry feed.
6. know, secrets of Iraqi poultry industry.
7. suggested solutions to retrieve poultry industry, in Iraq.

Methodology of Research

To achieve this article the researcher depended on the theoretical resources to obtain the information about this article, because this research description the phenomenon between two centuries (Iraq and Poland).

RESULTS & DISCUSSION

Know natural feed additives in poultry farms to achieve sustainable development

Recently with the increase in academic consciousness, biological hazards, scientific natural agricultural products are the new mecca of scientific society. interest is given to pollution-free, safe, and natural additives to feeding. Feedings in turn act like natural alternatives for antibiotics because they have good features: natural, in toxic, chemical residues free, increase appetite, enzymes of digestive system produce antibiotics as well as antigerm, anti-virus and anti-oxidants. main effect of herbal additives comes from good effect on microbial environment of digestive system, to control potential causes of diseases. improvement of digestion in intestines to suck main nutrients allowing poultry to grow faster, lessen harmful microbes inside intestines, decrease intestines' diseases, to achieve most benefit of food for the bird to increase growth speed. Using some plants like coriander and kurkomic helped to enhance microbial environment by decreasing harmful microbes and increase good ones (Fanatico, 2005).

Know importance of additives to poultry feedings

Importance of vegan additives to poultry feeding

Some natural additives have anti-pesticide effect on (Coccidia) that affect negatively on birds' weight and cause huge economic losses. one of these additives is (bitin) a side product of sugar beet. it cleans digestive channel and protects birds to avoid (ismozian exhaustion) that is related to dehydration, increases natural metabolism of cells as an alternative of anti-biotics. the most used alternatives as growth provider for table poultry are (probiotics, prebiotics, enzymes, anti-oxidants and vegan additives).

Vegan additives showed growth growing effects such as: increase amount of consumption for the bird, improve functions of intestines, and enjoying food). this positive effect of vegan additives attributed to improving tasting food due to scent and flavor not to forget to mention the good effect over discharges of digestive system like digestive enzymes and bile gall. Positive effects include: passing time, amount swallowed, digestive discharges promote activity of digestive system. all these effects

will increase and develop digestion. Vegan additives promote efficiency of (tricin, Lipin and amiliz) enzymes in table poultry (hasan 2001). Vegan additives have provoking effect on mucus of intestines in chicken like balance of microbes, some morphological changes like increase amount of velvets in intestines and colon, keep intestines healthy a basic condition to achieve perfect performance and revenue in table and egg poultries in addition to strategies of perfect feeding (Kelleher, et al, 2002). Some vegan additives helped in improving taste of feeding consequently improvement in productivity of poultry. Vegan additives make feeding safety by decreasing diseases in digestive channel thus improve microbic environment of intestines that can decrease in turn pollution of slaughtering.

Natural additives play important rule in egg production in quantity and quality some natural additives were used to produce eggs rich in some important ingredients like omega-3 to lessen harmful cholesterol. all this reflected positively on consumer. Some natural vegan additives like (Buka plant) and some essential oils decrease emission of ammonia and nitrogen thus preserve environment, lessen pollution and achieve goals of sustainable development (Kelleher, et al, 2002).

Importance of adding Stimulative and feeding additives

Growth stimulators play important role in increasing growth rates (poultry and livestock). Until now it's unknown the effects of these stimulators nor how they work. only few of these stimulators are known while others are mere theories about how they work and requires more studies.

Despite the importance of these stimulators, they must be used with caution because they have accumulative effect in body of animal that may be transferred to humans. that is why we have international laws and legislations to control and stop using some. While non-nutritional additives (feeding additives) are materials added to feeding in relatively small proportions that is less than 1% (10-20 g/ ton) they may be added even in micrograms. These elements do not replace food but they work on (Hassan et al, 2017) (Myszograj, 2012).

1. Improve taste and digestion of feed.
2. Protect feed from microbic infections.
3. Be anti-fungal.
4. Add yellow color on products of meet and eggs .
5. Be an anti-oxidant and anti-rancid.
6. Improve egg production.

know conditions to be fulfilled in feeding additives

Food complements: complexes that added to feeding some have nutritional value (aminic acids, mineral elements, vitamins) and some have biological effect (anti-biotics, medicines), or may increase production. there is another additive when used increase efficiency of using feedings by animals consequently improve quality of animal products. conditions to be fulfilled by feeding additives are (Bayrakdar et al, 2017).

1. They must be harmless to humans. amount of residue must be less than amount permitted.
2. They mustn't be harmful for animals (i.e., Toxic), mustn't affect reproduction nor animal productions.

3. They must affect positively on production in quantity and quality and lessen production costs.
4. They must have explicit chemical construction and can be observed by certain and known analysis methods.

Know additives of poultry feed Anti-biotics and hormones

Anti-biotics

Chemical substances produced by microbic organs that can affect growth or even destroy other microbial organs. main aim of producing these materials is to use them medically and vetinarally to control sickening microbes. these additives affect increase in growth rates for poultry if added in small proportions (Bolan, 2010). Growth motivation in poultry differs according to environment. using antibiotics under good healthy conditions made small amount in breeding chicks. but if chicks were raised in unhealthy conditions, adding this anti-biotics made tangible increase in weight by (10%), same increase was obtained in efficiency of metabolism (Augustynska, 2018).

Hormones

Natural hormones are chemical substances produced by living cells transmitted to blood circulation to reach organs and tissues to alter their construction and function. Hormones affect even if they were found in small amounts. there are some synthetic constructions that have features similar to that of natural one of these constructions (Dai athel Stlibsterol). it was noted that some hormones have importance in feeding animals in motivating growth (Bavariani et al, 2019).

Some other motivating materials

Zinc

Improve general health, animal's physique, motivate growth as in anti-biotics when added into poultry feeding. one of the important composites (arsenic acid) (sodium salt) and are not added pre-fortnights of slaughter because zinc has accumulative effect.

Copper sulfates

Hazard of using this material is difficulty of mixing right amount of this substance with poultry feeding because safety level of copper in feeding is really low.

Growth motivating materials and scientific additives

Growth motivators

1. Increase metabolism thus increase poultry weight .
2. When adding growth motivators into feeding as part of raising production quality, they play as an anti-biotic kills harmful bacteria found in digestive channel of bird by decreasing metabolism in bacteria cells thus maintain digestive quality and absorption Growth motivators are characterized by.
 1. Not fully absorbed in intestines so don't residue in muscles or eggs so don't reach consumer.
 2. Bacteria can't have immunity or resistance against them.

3. Don't contradict with any feeding additives or vegetarian medicines used in animal production.
4. Very stable and don't change any kind of feeding nor taste.
5. Don't have any toxic nor cancerous side effect or birth deformation.
6. Don't have retrieve date from feeding before slaughter because they can't be absorbed by intensities.

Anti-coccidia

Using anti-coccidia play big role in control and prevent coxidia disease specially if anti-coccidia was chosen carefully, skillfully and added to feeding in a good way. this substance is added from day one until marketing. water solvable medicines can be used like (Ambrol darvesol) with a rate of (0,1-0,3 g/ l). cure and prevention preferred to begin from day 21.

Anti-fungus toxins

poultry feeding consist of (nutritional constitutions) that face all weather factors like cold or hot winds, high or low humidity. constitutes of feeding (yellow corn, soya, concentrates, meat and fish powder and other ingredients) that take long time in manufacturing (farm feeding) during these circumstances are suitable for growing fungal consequently producing fungal toxins resulting in fungal poisoning. thus, anti-fungus toxins are a must to feeding ingredients to preserve and eventually reach bird fungus-toxins free.

Table (1) Quantity and value of live broiler chickens for the year 2020 in Iraq.

Details	Total	Private	Government sold & rented
Quantity (Ton)	156,549	156,549	0
Value (1000) ID	351,565,324	351,565,324	0

Know ingredients in poultry feed

Poultry feeding represents highest cost in producing poultry process. constitute about (60-75%) of total cost from hatchlings till marketing. Thus, principle in producing is to build feeding in lowest prices to get lowest cost of feeding used to realize revenue in production process.

Aim of nutrition is to provide poultry body with food used to get energy, build body tissues, renew them preserve body cells and fluids in coordinated stillness. carbohydrates represent basic source of energy in poultry feeding. body uses aminic acids in feeding protein after digesting in building protein tissues. To release energy from food and build body proteins vitamins and minerals must exist (Myszograj, 2012).

Balanced poultry feeding

Balanced feeding is the one that contain nutrition elements in right quantities and proportions that meet the need of poultry, thus before preparing poultry feeding, we must know bird's need of energy, protein, vitamins and minerals. economic factor

must be taken into consideration when taking feeding. prepare balanced feeding with lowest cost. grains (yellow corn, wheat, barely etc.) are main carbohydrate sources in poultry feeding because they contain high percentage of starch that poultry can digest efficiently. yellow corn and wheat are mostly used in poultry feed because they have high levels of energy .

There are two natural protein sources (herbal and organic). grains are low in protein quantity and quality. they lack some aminic acids. soybeans meals represent best herbal protein source in poultry feeding because they contain necessary aminic acids abundantly due to low nutritional value of herbal protein in grains, it's necessary to get protein from other sources. usually using concentrated protein substances of organic origin like wastes of meat of livestock, poultry and fish, blood and feather powder, milk powder.

We can also add a mix of salts and vitamins, table salt a source of calcium and phosphorus) calcium stone and table salt (Kougias et al, 2013). As explain in Table (1).

Iraqi poultry industry

Early stages to establish and develop Iraqi poultry industry began as an individual activity by breeders who nurture small flocks of chicken, then developed on big scale to be huge projects patronized by state. Iraqi poultry industry was and still dependent greatly on importing important production items like hatchets, basic feeding ingredients like yellow corn, soybean meals, protein concentrate, medicines and vaccines. all this made feeding industry under the mercy of ups and downs of global market, a means of economic pressure on country as it was in blockade during 90s of last century. 70s of 20s century witnessed building important poultry projects in all Iraqi governorates lead into integrated base of strategic projects of poultry production like raising ancestors, hatching project for table poultry and producing eggs poultry as well as hatchets, huge feeding and slaughter factories. these projects nurtured by state to meet the needs of breeders from private sector to keep their work running.

During 80s of 20th century there were ideas like create (base tribe) of local poultry adapted to local conditions, resistant to diseases originated in Iraq , improve productivity of flock by following a scientific program to breed and enhance to be base of breeding poultry depends on available local sources to initiate program of enhancing local poultry in fields of council of scientific research and moved to Ibaa enter for agricultural researches by hatching big number of eggs from local chicken gathered from all parts of Iraq to create a basic flock (Bavariani et al 2019). As following in table (2).

Table (2) Number of poultry projects (productive, under construction and stalled) for the year 2020 in Iraq.

Sector	Total	Rate %	Stalled	Rate (%)	Under construction	Rate%	Productive projects
Private	4828	48.7	2354	1.5	71	2403	2403
Total	4828	48.7	2354	1.5	71	2403	2403

Global problems and their impact on Iraqi poultry industry

We can talk about challenges facing Iraqi poultry industry via two perspectives: first considering Iraqi poultry industry part of global poultry industry thus affected by global challenges. second represents challenges and problems about privacy of Iraqi poultry industry and its shortages regarding frame, management style including marketing (hasan 1987).

Suggested solutions to rebuild Iraqi poultry industry

1. Necessary step to rebuild poultry industry as a power source and compete with imported one is to depend on new frame of this industry depends on finding integrated companies work according to contracts with breeders to revive private poultry fields that were put on hold, accept to adopt new techniques in breeding, production and transferring expertise. suggestion is to make agricultural administrates play as mediator between breeders and investing company to negotiate and make contracts.
2. Protect local production from severe competition of imported frozen poultry in local market by taxing imported goods like EU. in this trend, establish associations of protecting consumer that check standards of food product, to reveal and announce cheating in imported and local goods sold in low prices compared to product that fulfill the requirements of quality. thus, protecting consumers who commit to standards.
3. Legislate laws encourage investing in poultry sector, transfer modern technology used in production, use mass production theory instead of small farms.
4. Organize courses of technical training for breeders in collaboration with colleges of agriculture and administrates of agriculture to develop breeders' skills and production methods.
5. Begin a long-term research project to create broadlines of origins of Iraqi poultry depending on superior genetic selection to make use of relations depend basically on local production to decrease production cost and consequent increase of local product efficiency in competing with imported goods.

Poultry production in Poland

Poland, is one of major companies in poultry production in EU with an average of production of (4 million per year), including table chicken, Turkeys, and egg producing chickens. Number of Polish poultry farms increases annually within a decade, this eventually means, more poultry wastes managed correctly whether on site through available technologies or more central method such as fertilizing facilities or bio gas labs, etc. Poultry manure, is one of the major animal by-products generated in production of poultry in country of Poland (Drózdź et al, 2020).

Poland is now the first country in EU considering production of poultry. It is, also the major producer and exporter of pork. Imported soybean meal is mainly used to produce feed of poultry, although pork industry use soybean as well. In 2017, Soybean meal is also used in Polish cattle feed, at a much lower level. Polish annual imports of soybean meal are currently over 2.0 MMT and it accounts for 80 percent of plant protein in Polish animal nutrition. 95 percent of the soybean meal used in feed industry is derived from GE soybeans.

Although the Min-Ag aims to reduce soybean meal imports by (50 percent) over the next five years, there is currently, a shortage in the feed protein in Poland. Domestic production, it includes (oil meals), mainly rapeseed meal, sunflower meal, pulses. Domestic plant proteins are currently, account for only about (20 percent) of livestock feed, and (80 percent) of plant proteins, for feeds are imported, mainly for poultry and pigs. The local stakeholders cite that no alternatives exist which are economically-viable or nutritionally equivalent to imported soybean meal. In (2006) Feed Act states that farmers will receive additional subsidies for legume production as a means to increase domestic protein sources. However, (EU regulations), prohibit increasing production subsidies beyond historical levels. The EU also prohibits the use of meat and bone meal, which further limits available sources of feed of protein.

Table (3) Production of the domestic of high Protein feed, ingredients in Polish country. (Metric Tons).

Product	2017	2018*	2019*	2020*
Rapeseed Meal	1.570	1.650	1.700	1.750
Fish Meal	25	25	25	25
Leguminous Seed	650	720	800	875
Total	2.245	2.395	2.525	2.650

Table (4) Production of the industrial of Animal feeds in Poland country, (M.T).

Qualities	2014	2015	2016	2017
For Poultry	5.370	5.929	6.504	7.000
For pig	1.906	1.940	0.061	2.205
For Cattle	1.032	25	25	25
Other	650	847	847	930
Total	8.869	9.308	9.308	10.850

Polish scientists, are also working on the wider use of rapeseed meal, and dried distillers' grains, with soluble in feed. Poland, is one of the EU's biggest rapeseed producers, and Min-Ag is eager to the increase rapeseed of meal as a feed ingredient.

About the half of (Polish rapeseed meal) now consumed the domestically, with the other of half mostly exported to Germany. Polish of animal nutritional experts, currently note that, the rapeseed meal's viability as a livestock of feed ingredient is limited, as it is less of nutritious, than soybean meal and contains more alkaloids. Rapeseed meal also, requires the use of synthetic amino acids, which increases the costs.

CONCLUSIONS

The authors conclude from the research that Iraq and Poland are two countries characterized by animal husbandry and poultry farming and also characterized by the feed industry because they are mainly agricultural countries.

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CONFLICT OF INTEREST

The authors state that there are no conflicts of interest with the publication of this work.

تقييم الإضافات العلفية في تربية الدواجن بين العراق وبولندا

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الخلاصة

تعتبر إضافات الأعلاف في يومنا هذا من الضروريات في أي منتج من منتجات مصانع الأعلاف لما لها من تأثير مهم في تعزيز الصحة العامة للطيور وذلك لدورها المهم في تشجيع نمو الدواجن ومنع الأمراض وتحسين الخصائص الفيزيائية للأعلاف والقيمة الغذائية وايضا خصائص تخزين العلف. وتختلف تراكيب الاعلاف والمواد المضافة اليها حسب نوع الحيوانات والبيئة التي تعيش فيها وايضا تختلف بين دولة واخرى، وتختلف حسب الظروف البيئية التي يعيش فيها الحيوان. ولهذا تم اجراء هذا البحث للتعرف على الاضافات العلفية التي تضاف الى اعلاف تغذية الدواجن في العراق وبولندا، حيث توجد اختلافات حسب طبيعة الدواجن في كل دولة واختلافات في تركيب علف الدواجن ايضا. وتم الاعتماد على المصادر النظرية والاحصائيات في تنفيذ هذا البحث لكونه بحث وصف لحالة توجد في دولتين مختلفتين ومن قارتين مختلفتين ولهذا فان الاعتماد على المصادر النظرية الحديثة هو اضبط وأدق للوصول الى النتائج النهائية التي تحقق الهدف من اجراء هذا البحث.

الكلمات المفتاحية: دواجن، اعلاف، بولندا، العراق، تقييم.

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