



## COMPARATIVE STUDY OF ORGANIC AGRICULTURE IN IRAQ AND POLAND - RULES AND EFFECTIVENESS OF POULTRY REARING

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### ABSTRACT

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This research is theoretical research, this research aims to compare the reality of agriculture and organic agriculture between Iraq and Poland as well as identifying the reality of organic agriculture between Iraq and Poland, as well as knowing the cultivated agricultural areas and the number of organic fields in the two countries, and knowing the livestock between Iraq and Poland. The results show that the one, of the most significant threats to agricultural development is continued dependence on oil revenues, diverting the attention of policymakers and many Iraqi populations from the need for correct and balanced development, built on many sectors of economic. Also, the Poland is a large producer for plant production and animal production, Poland is renowned producer for wheat, rye and barley, oat, potatoes, sugar beets, rape seed, it occupies leading position in EU in apple and tobacco. As well as products of animal origin meat; cow milk, chicken, eggs, cattle and pigs.

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## INTRODUCTION

Organic farming is defined as the process in which environmentally driven means are used at all stages, from production to handling and processing. It is not a process concerned with the commodity alone but with the entire system used to produce and handle the commodity for the final consumer. This requires stopping adding manufactured products like industrial fertilizers, and pesticides, veterinary drugs, seeds and genetically engineered strains, preservatives, additives and irradiation." They are replaced by management methods that are consistent with the characteristics of each site, maintain and increase soil fertility and prevent pests and diseases. Organic farming is an agricultural procedure, that relies on using of natural biological materials in agriculture, pesticides and, control substances endangering public health. It also prohibits use of strains, genetically modified organisms, and radiation and preservatives in the processes of producing, preparation, or canning, and thus the foodstuffs reach the consumer, in their natural of state.

Organic agriculture is necessary on the following practices: the utilizing natural resources like organic manure in plant nutrition, maintaining fertility of soil by adding organic materials while preserving natural cycles, on the real cycles of nutrients, protecting cultivated crops from insects and diseases by adopting integrated agricultural management, and maintaining the ecosystem without, the need to use

harmful processed things, Protection from natural enemies of pests and following path of natural substances to control operations, management based on the exploitation of plant and animal waste, maintenance of animal health by promoting preventive health instead of medicines and antibiotics, reduction the use of non-renewable sources, preservation of environment and society, establishment of a sustainable farming system and reuse and recycling of plant waste (Al-Haboby, 2014); (Alhayali, 2020).

### **Poultry diets in the organic system**

When feeding birds under the organic production system, the components of the diets must be of 100% organic origin, and if this is not possible, birds can be allowed to eat diets in which dry matter is of organic origin of not less than 50%, and the diets provided to birds must be balanced and of high quality, and the levels of protein, energy and any other food additives are not similar to those used in the case of intensive production, The use of foodstuffs that have been subjected to solvent extraction is prohibited. Deerberg (1989) proposed an organic poultry diet consisting of 44.5% (wheat, corn or barley), 26% (beans or peas), 11.5% corn gelatin, 7.5% oysters, 5% green berries (alfalfa), 2% minerals, 2% edible oil and 1.5% molasses (Al-Haboby, 2014).

### **Good management in organic production**

In all free poultry production systems (free), birds must be allowed throughout the day to obtain fresh air through easy roaming and movement in the pasture, except in the case of bad weather conditions, and the ground must be covered with one of the types of green grass, and it is taken into account that the number of birds in this system does not exceed 250 birds per acre, and it is taken into account that the pasture used enters into a rest period for a year every three years grazing, and the use of fixed bird dwellings is prohibited. The work of groups of birds is desirable under the free grazing system, where it is preferable in the case of egg production herds that the number of birds in one group does not exceed 100 birds, but in the case of meat chickens the number does not exceed 200 birds, and may allow up to 500 birds per group. When breeding laying hens with the use of artificial lighting, the lighting period should not exceed 16 hours per day, and the dwelling should provide sufficient floor space for the freedom and well-being of laying hens.

In the case of breeding laying hens under organic production, some equipment for the dwelling is allowed, such as the use of flat floors with cracks for easy collection of glaucoma, or the use of hard floors (cement) with the use of one of the types of mattresses, and the number of laying birds may increase to (25 kg live weight / m<sup>2</sup>) of the floor, and the number of chickens per nest of eggs increases to 8 chickens, in cases of intensive breeding. In broilers, the amount of recommended live weight is (18 kg live weight / m<sup>2</sup>) from the floor, and that 75% of the floor area is covered with one of the types of mattresses, and that the remaining 25% is a flat floor with cracks, and the number of birds may increase, and it is forbidden to increase the density of birds from those limits mentioned above, and it is forbidden to cut the beak (Schnepf 2004).

### **Poultry health and treatment in the organic system**

Following intensive breeding systems in poultry led to the spread and outbreak of many diseases, which were treated with the intensive use of antibiotics and medicines, while in the organic farming system, the use of medicines and antibiotics should not be allowed except when absolutely necessary and at the very least, but this system depends on other alternative methods to maintain the health of birds, Such as increasing the immune capacity of an animal or bird to resist diseases by therapeutic nutrition and treatment with natural herbs. The bird acquires immunity through vaccination and serums to form immune bodies against various diseases, and following breeding methods that provide health and safety for birds, such as proper nutrition and appropriate living pens, is of great importance to maintain the strength and resistance of the bird to diseases, and it is worth noting that in some cases of infection in birds, which does not work with them Except for traditional treatment with medicines to maintain their health and avoid high mortality rates, in this case these birds or their products cannot be considered organic products, and it should be noted that with the use of the organic poultry production system (free breeding in pasture), attention must be paid to the application of biosecurity standards, the most important of which is avoiding wild birds, one of the most dangerous of which is aquatic wild birds such as wild ducks, Where these birds transmit many diseases to free-range poultry, as these wild birds are attracted to the pasture, as a result of the presence of feeds and food sources in the free pasture, so the net may be placed to act as a cover or roof around the pasture to protect against wild birds when necessary (Abdullah, 2021). The soil, pasture plants, insects and worms in it contain some toxins, the most important of which is Dioxin, which is one of the toxins that form as a result of incomplete natural or industrial combustion processes, and this poison may be transmitted to pasture chickens by picking it up from the soil or feeding on plants, insects or pasture worms, Which may then be transmitted depending on the eggs produced, and the European Union reports that the maximum allowable level of dioxin in poultry meat is (2 pg TEQ), and in chicken eggs is (3 pg TEQ) per gram of fat. Breeding chickens at home is a very exciting and rewarding process. Poultry can be considered a pet or a source of food, and in both cases poultry is a good source, especially if you have children, the process becomes fun to understand entertaining elements. There are a lot of methods that homeowners use in poultry farming. Chickens are an easy and inexpensive way to breed. You can feel the joy when you are able to collect fresh eggs yourself to enjoy a delicious and nutritious taste. Raising chickens at home provides for chemical-free chickens because you can control the foods you serve them yourself. Even backyard poultry farming has become a new trend in cities and suburbs with increased momentum due to increased interest in organic food (Bishay, 2003).

### **The history of agriculture in Iraq**

The history of Iraqi agriculture traces as far back as humankind's transition from hunting and gathering to planting and herding, which originated in Mesopotamia. Given its location "between two rivers," its fertile soil and its advanced agribusiness practices that dated back thousands of years. The first major, transformation, in agricultural sector in Iraq country took place in the late nineteenth century involving the breakup of tribal land holdings and, the creation of large

privately-held estates (Telleria et al. 2013); (Schnepf 2004); (Murad, 2020). Iraq's agricultural sector represents vital component of Iraq's economy, the second largest supplier after oil. This sector represents the second largest provider of national Gross Domestic Product. Agriculture also serves, as a pivotal component of the rural social structure. Iraq is diverse in agriculture and geography. However, population growth with the everlasting need to produce more food from limited and, shrinking portion of land and water resulted in cultivation systems, that tend to maximize short-term refunds over long-term sustainability. Crop production is the major sector of income of majority of farmers in Iraq namely (75%) (Altalb and Filipek 2016). Wheat and barley are by far prominent crops in Iraq, occupying most of area planted, in winter season.

Table (1): The total area and arable area and cultivated (donum/ha.) in the governorates of Iraq for 2013- statistical data for the year 2014.

Details	Barley	Wheat	Year
Total area (1000 donum) (1000 ha)	2818 704.5	5050 1262.5	2009
	4027 1006.8	5544 1386.0	2010
	3651 912.8	6543 1635.8	2011
	2850 712.5	6914 1728.5	2012
	3364 841.0	7376 1844.0	2013
	4632 1158.0	8528 2132.0	2014
Product (1000 ton)	502	1700	2009
	1137	2749	2010
	820	2809	2011
	832	3062	2012
	1003	4178	2013
	1278	5055	2014
Average Yield (kg donum-1) (Mg ha-1) = (t ha-1)	178.0 0.71	336.7 1.35	2009
	282.4 1.13	495.8 1.98	2010
	224.6 0.9	429.3 1.7172	2011
	292.0 1.17	442.9 1.78	2012
	298.3 1.19	566.5 2.27	2013
	275.8 1.10	592.8 2.38	2014

Note (1 ha = 4 donum)

### **Organic agriculture Iraq**

Organic agriculture ranks sixth, after open the ISO office in Baghdad, although the organic option Bishay (2003). One, of the most significant threats to agricultural development is continued dependence on oil revenues, diverting the attention of policymakers and many Iraqi populations from the need for correct and balanced development, built on many sectors of economic. Organic farming is an good option when considering scaling up agriculture so that real and future prospects require theoretical and applied research, good management that will reflect community participation, through targeted investments, agricultural education, appropriate legislation (Al-Haboby, 2014).

Iraq, is the only country, where average of agricultural income appears to be much higher than in other sectors, and in this country, the organic matter of cultivated clay soils ranges between 1.0 – 2.5%, while, in calcareous and sandy desert soils, usually is less than 0.5% under arid and semi-arid conditions. Other activities, as organic farming, are helping to scale up agriculture in Iraq (CRS Report for Congress, 2004).

### **The agricultural in Poland Country**

Poland, is important European and, world producer of agricultural and horticultural products, as well as products of origin of animal. Poland's agricultural land area is 15.4 million hectares, which reach almost 51% of the country's area. The country is inhabited by more than 9 million of people. Agricultural production, conditions in Poland are different compared to agriculture in European Union. The number of private farms exceeds 2 million. Most of them have relatively small measures (9 hectares) on mean. many farmers apply ancestors production methods, where the fruits of land are for the farmer's family only, and the animals are usually raised at a small density, which helps to protect landscape. At the same time, however, there are overgrowing mass market-oriented agricultural properties, including those specializing in production for export (Meredith Waller, 2007); (Łapinski and Arseniuk, 2008).

Despite the great dispersion of agricultural holdings, and the spread of low-interest soils, Poland is major of european and world producer in agricultural and horticultural products, as well as that of animals. The most, important of crops are cereals, the highest yields are came from wheat crop, barley and oats, other main crops are potatoes, sugar beets, fodder, flax, hops, tobacco and fruits. Farms throughout Poland raise dairy cows, beef, pork, poultry and grow fruit (Mikiewicz, 2017).

Poland is a large producer for plant production and animal production, Poland is renowned producer for wheat, rye and barley, oat, potatoes, sugar beets, rape seed, it occupys leading position in EU in apple and tobacco. As well as products of animal origin meat; cow milk, chicken, eggs, cattle and pigs. One of the biggest world producers of meat, milk and hen eggs (Łapinski and Arseniuk, 2008).

Performance of agricultural sector in 2013 increased in nominal terms, more than 2 %, compared with 2011 and 2012. It was 29 % higher than the mean of 2008 – 2010. It was mainly a consequence of a rise value of animal production and, to a lesser extent, of production in Plant, as well as other production, service (Igras et al.

2014). In 2014, the overall revenue of production was 10 percent, lower than in 2013. Simultaneously, there was a 30-percent, increase in production value of plants protein, yet this location of production is plays the relatively inconsequential role in setting of production value in agriculture polish.

Table (2): An area and production of agricultural crops and animal production in Poland to 2011 (global share and position of Poland) (Igras et al. 2014).

Specification	2000	2005	2011	2000	2005	2011
	Poland's % share			Poland's position		
Area	0.2	0.2	0.2	69	69	69
Including cultivated land	0.4	0.4	0.4	51	51	51
Population	0.6	0.6	0.5	30	31	33
Including farming population	0.3	0.2	0.2	45	49	54
Production of selected agricultural Products:						
Wheat	1.5	1.4	1.3	15	16	16
Rye	19.9	22.5	19.8	3	2	2
Barley	2.1	2.6	2.5	12	12	12
Oat	4.1	5.6	6.1	7	5	3
Potatoes	7.4	3.2	2.4	4	7	7
sugar beets	5.3	4.7	4.3	7	8	7
rape seed	2.4	2.9	3.0	8	7	8
Flax (fiber)	1.5	0.2	0.1	12	14	15
Apples	2.5	3.3	3.3	8	7	5
Tobacco	0.4	0.5	0.5	28	27	23
Meat	1.3	1.3	1.3	16	15	15
cow milk	2.4	2.2	2.0	11	11	12
Chicken eggs	0.8	0.9	0.9	20	18	23
Livestock:						
Cattle	0.5	0.4	0.4	38	47	44
Pigs	2.0	2.0	1.4	8	7	10

The 2014 the production of cereal was shrank about, 3 %, sugar beet, product of potato– by 15 %. The decline of production of plant, in 2014 as compared with the year before was primarily result of reduced prices of basic of products of agricultural, as shown in Table (3).

Table (3). Economic performance of agriculture in Polish in 2013, estimates in 2014 as comparative to last years (current of prices in PLN, million).

Polish agriculture	2008 – 2010	2012	2013	2014*
Production in Agricultural	77072	97 078	99 247	95 297
Earning of businessman of agriculture	27 131	36 696	38 636	36 165
Sum the aids	15 402	16 358	16 345	16 043
Share of income of aid	56,8	44,6	42,3	44,4

Plantations and berries fall

### **Organic farming in Poland**

Polish organic farming is undergoing major transformations. In 2014, number of eco-farms and used agricultural area (UAA) halted. It goes against the trend of expected under the Policy of governmental Agricultural, which assumes that by 2030, methods of organic farming will be used in 25% of organic agriculture is an agricultural production system that ensures food production in favorable conditions for the protection of the natural environment. The elimination of synthetic means of production, Care for soil fertility, a high degree of biodiversity, respect for the environment, preservation of the landscape, as well as dependence on plant and animal species found in a particular ecosystem, are conducive to the production of foods with special health benefits (Lokritz, 2017).

In the last time, the improve of organic farming in polish country, can be happen. Regional and traditional food sector is also growing very dramatically more, and high producers, need to give high-type food. The distribution of field and the scarcity of chemical fertilizers, using make agriculture naturally, suitable to product the quality of foods, natural, organic products, which, was highly desirable by European consumers. In organic farms one strives to balance plant and animal production in order to balance feed and fertilizer. Among others.

Organic farms cannot use synthetic materials pesticides, and fertilizers, seed dressings, synthetic concentrates, genetically engineered organisms, synthetically produce feed, or ionizing radiation to produce organic matter for organic matter (Lokritz, 2017).

### **During the period of Poland's accession**

After Poland's connected with European Union, in 2004, number of certified, organic farms in Poland increased and was registered in the whole voivodeship district. These ups of obvious reasons, were not, equal across the country, but the highest levels, were written in the regions with widespread presence Mickiewicz (2017).

### **CONCLUSIONS**

We conclude from this research that Iraq and Poland are two agriculture countries and the both countries are focus on the some cultivated only. According to the results of this research, we conclude that the Iraq and Poland should focus on the organic farming, and growing the different crops.

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### **CONFLICT OF INTEREST**

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

دراسة مقارنة للزراعة العضوية في العراق وبولندا - قواعد وفعالية تربية الدواجن

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الخلاصة

هذا البحث هو بحث نظري، يهدف هذا البحث إلى مقارنة واقع الزراعة والزراعة العضوية بين العراق وبولندا وكذلك التعرف على واقع الزراعة العضوية بين العراق وبولندا، وكذلك معرفة المساحات الزراعية المزروعة وعدد الحقول العضوية في البلدين، ومعرفة الثروة الحيوانية بين العراق وبولندا. وتظهر النتائج أن أحد أهم التهديدات التي تواجه التنمية الزراعية هو استمرار الاعتماد على عائدات النفط، مما يحول انتباه صانعي السياسات والعديد من السكان العراقيين عن الحاجة إلى التنمية الصحية والمتوازنة، المبنية على العديد من القطاعات الاقتصادية. أيضا، بولندا هي منتج كبير للإنتاج النباتي والإنتاج الحيواني، بولندا هي منتج مشهور للقمح والجاودار والشعير والشوفان والبطاطا وبنجر السكر وبذور اللفت، وتحتل مكانة رائدة في الاتحاد الأوروبي في التفاح والتبغ. وكذلك منتجات اللحوم ذات الأصل الحيواني، حليب البقر والدجاج والبيض والماشية والخنازير. الكلمات المفتاحية: الزراعة العضوية، الدواجن، القواعد، التربية.

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