



VISUALIZE PROPOSAL FOR REQUIREMENTS TO DEVELOPMENT OF THE CAPACITIES OF AGRICULTURAL EXTENSION AGENTS TO DEAL WITH BIRD FLU IN THE POULTRY FIELDS OF THE MIDDLE GOVERNORATES OF IRAQ

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Abstract

The aim of the research was to create a proposed scenario for the requirements of developing the abilities of agricultural extension agents to deal with avian flu in the poultry fields of the governorates of the middle region of Iraq. In order to achieve the research objectives, the questionnaire was designed to develop the abilities of agricultural extension workers in light of the relevant literature and experts to form the primary vision of the proposed scenario and then presented it to a group of experts in the field of poultry diseases and agricultural extension to explore their views on the components of the proposed scenario (areas, sections), validation and determine the percentage of agreement of 75% and more of the opinions of experts as a condition for remaining the section within the initial form of the proposed scenario. Hence, the selected scenario for the development of the abilities of the agricultural extension workers was the initial modified form that consisting of 57 sections divided into 4 areas: Diagnosis of disease symptoms, Methods of transmission of disease, Prevention of disease and the ability of agricultural extension workers to contact poultry farmers. The study was conducted on the governorates of the middle region of (8) governorates and a random sample was withdrawn by (50%) from 4 governorates (Baghdad, Babylon, Wasit, Karbala). The research samples were limited to 165 samples and the data were collected in a personal interview to indicate their degree of agreement with the proposed sections. The final form of the proposed scenario was reached by using the following criterion: The section was within the final form of the proposed scenario if it got a mean greater than the proposed mean for approval scale scores used in the research 3 degrees. The result showed that all the sections and areas were in the final form of the proposed scenario due to each one of them have greater mean than the satisfactory mean of 3 degrees. Therefore, the researchers recommended that the competent authorities (Ministry of Agriculture, extension and agricultural training Department) should adopt the proposed scenario for the development of the abilities of agricultural extension agents in order to increase the awareness among the breeders of dangerous of this disease and to preserve domestic birds from economic losses.

Key words: Proposed scenario, bird flu, development of agricultural extension capacity.

Introduction

Poultry is one of the most important sources of livestock in the agricultural sector, it gives a high nutritional value among the meat of different animals and characterized by large animals quickly production cycle and thus the speed of the capital cycle. Poultry products are the basis that cannot be dispensed because it is one of the most important sources of protein needed by the human body which accounts for 21% of its nutritional value as well as it is cheaper, less fat and suitable for fast food when compared to other meat (Hassan and

Mohammed, 2015). The secondary products of poultry such as feather, was used in the manufacture of furniture, hats, clothes and cleaning tools. Additionally, its residues were used as sources of dry animal protein that used in poultry feed in addition, its residues can be used as organic fertilizer in the fertilization of vegetables and fruit trees (Al-Musallmawi, 2012). The importance of the poultry industry represented by the production of high nutritional value materials, which are important food sources for humans, as well as the rapid growth of the poultry, the short cycle of production and the high efficiency of feed conversion.

Although the importance of poultry as one of the main components of the animal production sector and it consider as basic food in human life, but it suffers from several problems, including several diseases such as bird flu. Bird flu is a common disease affecting humans and animals, especially birds, horses and pigs. The disease is manifested in the form of a highly contagious viral epidemic spread through the air rapidly (Shikli, 2003). The avian influenza virus has caused severe disease in the chicken herds and led to increase mortality rate, respiratory symptoms and a decrease in egg production. In recent years, poultry production has increased in several countries, including Saudi Arabia, Iran and Southeast Asian countries, which resulted in significant economic losses in poultry production (Hassan, 2007). In 2015, there were infections in the governorates of Baghdad and Wasit. The number of cases was 593780 and 2047087 chickens, respectively. In 2018, there were cases of bird flu in poultry farms in Dahuk and Sulaymaniyah. The number of infections in the governorates of Diyala, Babel and Baghdad was 370500, 98900 and 42000 chickens, respectively (Ministry of Agriculture, 2018). The resistance to this disease requires a lot of efforts from several aspects, including the agricultural extension system to educate poultry farmers on how to control the spread of the disease. Al Jamal *et al.*, 2010 pointed out that the management of the bird flu disease is one of the functions of agricultural extension system. The success of the agricultural extension system in the performance of this task depends on a great extent on the skill of its employees and their efficiency, especially the agricultural extension agents. Al-Mashhadani pointed out that the effectiveness of the agricultural extension workers is one of the most important factors in the success of agricultural extension in achieving its goals and objectives by making desirable behavioral changes in their knowledge (Mashhadani, 2016).

In order to work successfully in the field of education and guidance of educators to deal with bird flu, the agricultural extension agent must be trained and their capabilities must be developed, as training and the capacity development is a continuous process that adding knowledge, skills and capacities to achieve the requested goals. (Al-Majzoub, 2003). Salman *et al.*, (2012) detected that the improvement of the performance of employees in the job they occupy was through training, as training is the best way to raise the efficiency and capacities of extension workers and refining their skills. The development of capacities is one of the most important axes of business development and it is a planned activity aimed at improving the performance of workers to enable

them to perform their work effectively and efficiently (FAO, 2008).

The aim of the present study is to develop a proposed vision for the requirements of developing the abilities of agricultural extension agents to deal with bird flu in poultry fields of the middle governorates of Iraq through the diagnosis of disease symptoms, transmission methods of disease, prevention of disease, ability of agricultural extension to communicate with poultry breeders. As well, to identify the opinions of the respondents regarding the proposed vision for the requirements of developing the capacities of agricultural extension agents to deal with bird flu in the poultry fields of the middle governorates of Iraq.

Materials and Methods

Research methodology: In order to achieve the study objectives, the descriptive approach, which is one of the forms of systematic scientific analysis and interpretation, is used to describe a specific phenomenon or problem and quantified it by collecting detailed data and information about a phenomenon or problem, classifying, analyzing and subjecting it to accurate study (Abdul Muamen, 2008). Therefore, this approach is suitable for accurate data and facts (the proposed vision for the development of the capacities of agricultural extension agents to deal with bird flu in the poultry fields of the middle governorates of Iraq).

Research Society and samples: The research community included the governorates of the middle region of Iraq (8 governorates: Baghdad, Babel, Diyala, Karbala, Najaf, Anbar, Salah al-Din and Wasit). A random sample was chosen by 50% Thus, the governorates covered by the research became 4 governorates: Baghdad, Wasit, Babel, and Karbala. The research was limited to all agricultural extension agents (57 agents) in the agricultural extension departments within the directorates of agriculture covered by the research sample and the preparation of agricultural extension agents in agricultural extension units within (50%) of the agricultural divisions of the directorates of agriculture covered by the research (30) and all the agricultural extension agents in the training centers and extension farms in the governorates covered in the research sample and 49 respectively.

Data collection tool: In order to achieve the objectives of the research, a questionnaire was prepared to collect data on the proposed vision for the development of agricultural extension agent capacities to respond to avian flu, considering that it was suitable for the research methodology used. The questionnaire is one of the most useful data collection tools in spite of the importance and strength of other tools. (Abbas and others, 2014). The

Table 1: Distribution of the respondents according to the proposed sections for diagnosis of disease symptoms.

Sections	Weighted average	Centric weight	Sequ -ence
10. Ruffling feathers	3.890	77.8	1
9. Low production of eggs	3.878	77.56	
5. Increased tears of the eyes	3.860	77.2	3
13. Waterfall	3.848	76.96	4
1.lack of appetite and therefore decrease in feed consumption	3.793	75.86	5
12. Hemorrhagic spots on legs	3.787	75.74	6
8. Increase in maternal mortality	3.745	74.9	7
4. Cough and sneeze	3.727	74.54	8
11. Slit in the parts that do not contain feathers, such as custom and ear, ear and facial dentures	3.690	73.8	9
2. Emergence of respiratory symptoms (difficulty breathing)	3.636	72.72	10
3. Mucous secretions in the respiratory and nasal passages	3.630	7.6	11
6. Head and face swelling	3.624	72.48	12
14 - the emergence of neurological signs such as paralysis of the legs and wings and neck and sometimes occur in the torsion spindle	3.581	71.62	13
7. Chicken inactivity with high losses	3.369	67.38	14

questionnaire formed the proposed conception of the requirements for the development of the capacity of agricultural extension agents to respond to avian flu. The formation of the proposed conception was through a series of stages:

First: Preparing the preliminary form of the proposed conception: In light of the literature on the subject of research, previous studies and the opinions of experts and specialists in this area, the proposed conception was prepared to meet the requirements for the development of the capacity of agricultural extension agents to address the initial form of bird flu which consists of four areas (diagnosis of disease symptoms, methods of transmission, disease prevention and the ability of agricultural extension agent to communicate with poultry farmers) and the sections comprising these areas were 57 section.

Second: Development of the conception (presentation of areas and sections on experts specialists): The fields and sections were presented in its preliminary form to a group of experts in the field of animal production (poultry diseases) and agricultural extension of 18 experts through a questionnaire method to indicate their approval on the

Table 2: Distribution of respondents according to the proposed sections for the field of transmission methods

Sections	Weighted average	Centric weight	Sequence
9. Residues of domestic birds and fodder	3.927	78.54	1
4. Air polluted by influenza viruses	3.769	75.38	2
1. Wild and migratory birds and water birds, particularly ducks carrying the disease	3.690	73.8	3
2. Clothing and equipment of workers in poultry fields	3.672	73.44	4
3. Markets for sale and purchase the live infected chickens	3.648	72.96	5
6. Pollution of equipment such as bird transport cages and egg bowls	3.618	72.36	6
Chicken feathers	3.612	72.24	7
5. rodents, insects and bulk animals carrying disease near the poultry fields	3.606	72.12	8
7. Bird transportation	3.496	69.92	9

sections of each field at three levels: Agree, Agree with the adjustment, Disagree.

Third: Determination of the criterion of expert approval (cutting threshold) on the areas and sections of the conception: The cutting threshold was commonly used in psychological and educational research, which was the degree to be achieved by the field or section in the average degree of approval of the experts to remain in the questionnaire as final as the threshold was set by 75% and more.

Fourth: Calculation of the averages of the approval of the experts on the fields and the sections of the proposed conception: The estimated weights (numerical values) were given to the levels of the approval level as follows: (Agree= 2), (Agree with the adjustment=1) and (Disagree= 0). The scale of the scale is between 0-2 degrees and the averages were calculated by calculating the total scores obtained by the number of experts.

Fifth: Preparing the conception at its final form (finalization of fields and sections): In light of the comparison of the approval averages of the experts in the fields and sections of the proposed conception, all areas and sections achieved 75% and more where the cutting threshold of the proposed conception for the requirements of developing the capacity of agricultural

Table 3: Distribution of respondents according to the proposed sections for the field of disease prevention.

Sections	Weighted average	Centric weight	Sequence
11. Piling ponds and marshes close to the halls of breeding	3.963	79.26	1
13. Disinfection with hot water or fire using spray pumps with a heater to remove the bacteria	3.781	75.62	2
6. Sterilization of plastic cages for transporting chickens	3.745	74.9	3
17 - Give oil vaccine in the first two doses of one day to (8) days and the second after 10 days of the first dose	3.733	74.66	4
10. Remove all weeds and crops from around the education halls that represent shelter and food to carry the infection	3.715	74.3	5
14. The halogenate disinfectant (chloroallide) is used after good washing of the halls with water and detergents to remove any organic residues	3.709	74.18	6
15. Transfer all tools and equipment that can be moved, such as portable incubators, shovels and feeders to a clean place around the house for washing and cleaning	3.696	73.92	7
4. Not raising or acquiring different birds such as ducks or goats by workers in poultry fields	3.672	73.44	8
5. The drinking water of domestic poultry should not be exposed	3.666	73.32	9
16. Washing all internal surfaces of the building including all fixed and suspended tools and the surrounding area	3.660	73.2	10
9. Bury the dead chickens in a place far from the field at a depth of 2 m and 1 m width and length 50 m	3.636	72.72	11
2. The use of special work clothes for each worker in the field such as allowances, shoes and paws	3.630	72.6	12
1. Control of the poultry halls by preventing the entry of insects and birds such as birds and pigeons	3.612	72.24	13
3. Disinfection of all tools and equipment before and after use in poultry houses	3.581	71.62	14
7. Washing and disinfecting the floor of chicken markets and cleaning of waste and feather after the end of each working day	3.575	71.5	15

extension agents to respond to avian influenza and recorded mean of 86.59% and some addition, reduction and modification were made. The number of sections (57) were divided into four areas, thus achieving the first goal of the research by exiting the final = formula of the proposed conception.

Stability test: The stability of the conception measurement means accuracy and consistency in the measurement of the information about the behavior and directions of the interviewer. The consistency of the measurement can be verified by repeating the application of the same measurement to the same number of respondents. This repeated distribution shows that the respondents answers did not affected by the randomness, which means that the results were stable (Aysure *et al.*, 2016). In order to measure stability, a pre-test was conducted in October 2018 on a sample of the respondents in Diyala governorate, consisting of 10 respondents in the Agricultural Extension Department of Diyala Agriculture Directorate and 10 respondents in the training center in the governorate and 4 respondents in the extension farms in the province, bringing the total initial test sample (24) respondents. The vacronbach coefficient of 0.89 was used to measure the stability of

the proposed conception measurement and was considered scientifically acceptable.

Data collection: The research data were collected using the questionnaire form to obtain the required data and in the manner of personal interview with the respondents during the period (1 of November 2018, 12 of January 2019, 165 respondents).

Data analysis: After data collection, the data were analyzed using manual analysis and statistical processing. Statistical methods for analyzing data were: likely mean, percent weight and Vaccronbach equation.

Results and Discussion

The proposed sections (57 sections) for the requirements of the development of the capacity of the agricultural extension agents to respond to avian influenza were obtained likely means between (3.781-3.890 degree). Therefore, all these sections reflecting the requirements for developing the capacities of the agricultural extension agents remain within the proposed conception but with varying degrees due to each one of them obtained means greater than the accepted mean of the proposed conception used in the research (3 degrees) as shown in tables 1, 2, 3 and 4.

Table 4: Distribution of respondents according to the proposed sections for the field of the ability of agricultural agents to communicate with poultry breeders.

Sections	Weighted average	Centric weight	Sequence
11. The ability to influence the behavior of poultry breeders and persuade them to adopt ideas related to bird flu	3.781	75.62	1
13. Keep calm when contacting poultry breeders and feel comfortable and willing to keep in touch	3.775	75.5	2
7. To be an agricultural guide to be able to talk when the transfer of information and ideas on bird flu to poultry breeders	3.745	74.9	3
15. To be permanent bright and smiling	3.733	74.66	4
14. Have a beautiful and attractive appearance to impose respect and appreciation on poultry breeders	3.715	74.3	5
5. Identify suitable place to meet poultry breeders	3.684	73.68	6
8. Receiving reactions from poultry breeders with respect and acceptance	3.678	73.56	7
9. Provide all poultry breeders with the opportunity to participate in the discussion and exchange of views between them and the agricultural guide	3.672	73.44	8
17. Take into consideration the response of poultry breeders and control the content of the message (relating to avian influenza) in light of them	3.660	73.2	9
12. Write the letter on avian flu in clear language so that it is easy for breeders to understand	3.630	72.6	10
16. Use hand, body and face movements when contact with poultry breeders when it necessary	3.612	72.24	11
4. To be an agricultural guide able to choose the appropriate methods (such as lectures, seminars ... and others to contact poultry breeders	3.581	71.62	12
3. The agricultural guide must be familiar with the communication elements	3.557	71.14	13
10. The Agricultural guide shall have the necessary expertise in the field of avian influenza	3.539	70.78	14
6. Determine the right time to communicate with poultry breeders	3.533	70.66	15
2. The agricultural guide must be aware of the importance of communication	3.484	69.68	16
1. The agricultural guide must be familiar with the concept of communication	3.375	67.5	17

In order to arrange the proposed areas (4 areas) for the development of the capacity of agricultural extension agents to respond to avian influenza, where the field (diagnosis of disease symptoms) in the first order with mean of 3.718 degree and a percentage weight of 74.369. It can be attributed to the importance attached by respondents to the field of diagnosis of disease symptoms as a requirement to develop the ability of agricultural extension agents to address bird flu because it is important to control and eliminate the disease through the provision of treatments and preventive methods to avoid the spread of the disease and the occurrence of economic losses.

The area of communication between the agricultural extension agents with poultry breeders came last at a weighted average of (3.633) and a centric weight (72.652). This may be due to the fact that most of the agricultural extension agents have contact information, so this field came last. The conclusion of the research:

1. The agreement of all respondents on the importance of the proposed areas and sections of the proposed requirements for the development of capacities of agricultural extension agents reflects the appropriateness of using the proposed conception of

the Agricultural Extension Service in the governorates of the central region of Iraq.

2. The interest of the respondents in all areas of the proposed conception for the requirements of the development of the capacities of the agricultural extension agents in the present study which represented (with varying degrees) by: availability of sanitary conditions in poultry houses, diagnosis of disease symptoms, transmission methods, disease prevention, the capacity of the agricultural extension

Table 5: Arrangement of the proposed areas for the development of the ability of agricultural extension agents to respond to avian influenza

Sections	Weighted average	Centric weight	Sequence
1. Diagnosis of disease symptoms	3.718	74.369	1
3. Prevention of disease	3.702	74.031	2
2. Modalities of disease transmission	3.671	73.418	3
4. The capacity of the extension of agricultural extension workers to poultry farmers	3.633	72.652	4

agents to communicate with poultry breeders and coordination with veterinary institutions.

3. The agreement of all respondents to all areas of the proposed conception for the requirements of the development of the capacity of agricultural extension agents in the agricultural extension system has an effective impact on the development of capacities of agricultural extension agents and improved the ways to preserve the wealth of poultry through the dissemination of guidance programs to educate poultry breeders about the risks of this disease and the application of disease prevention measures.
4. There was greater interest and confirmation of the respondents to the field of diagnosis of disease symptoms compared to other areas of the proposed conception for the requirements of development of the capacity of agricultural extension agents to respond to bird flu.

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