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Subject Review

CONTROL OF INFECTIOUS DISEASES IN FARM ANIMALS IN IRAQ

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ABSTRACT

Agricultural production, food security and safety, public health animal welfare, access to markets and alleviation of rural poverty have been achieved by controlling on veterinary services to prevent animal disease. World organization for animal health guidelines focus on controlling of animal disease which depends on good governance and veterinary services quality. The aim of veterinary services is controlling and preventing animal disease some of other aspects; it's responsibility of early detection, rapid response to outbreaks of emerging or re-emerging animal disease, optimizing quality and effectiveness of disease prevention and control systems based on suitably adapted legislation and protect animal health as well as public health. Iraq has been focusing on controlling and preventing animal diseases through several aspects such as implementing laws, resolution on combating communicable disease, reporting communicable disease, setting a national policy for disease preventing and introducing health and vaccination programmers. Human and animal health have been protected from biological risks prevent pathogen spread in case of disease outbreak in a non- endemic area, disinfection of establishments, equipment and vehicles and temporary ban of movements animals.

Keywords: Infectious disease, control, animals.

مقال مراجعة الموضوع

السيطرة على الامراض المعدية في الحيوانات الحقلية في العراق

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الخلاصة

تعد الوقاية من الامراض المعدية والإجراءات البيطرية للقضاء عليها في جميع انحاء العالم منفعة عامة، وان لهذه الانشطة فوائد كثير تعمل على تطوير الانتاج الزراعي والصحة العامة ورعاية الحيوانات لغرض وصول المنتجات الحيوانية الى الاسواق وتحقيق الامن الغذائي للتخفيف من حدة الفقر في المناطق الريفية، وتعتمد اساليب الوقاية ومكافحة الامراض جزء من الادارة الجيدة للخدمات البيطرية بما يتوافق مع معايير وارشادات منظمة الصحة والغذاء العالمية بشان مكافحة الامراض، وتعد الخدمات البيطرية من صميم نظام الوقاية من الامراض ذات المنشاء الحيواني، ويمثل الاكتشاف المبكر والاستجابة السريعة لتفشي الامراض الحيوانية احد الركائز المهمة في جميع انحاء العالم بهدف تحسين انظمة الوقاية البيطرية من الامراض وهذا يحتاج الى تشريعات وقوانين، اذ تحتاج الدول النامية الى تشريعات مناسبة وموارد بشرية لبناء قدرات ادارية وصحية عالية من اجل حماية الحيوانات من الامراض وبالتالي تحسين الصحة العامة وتحقيق الامن الغذائي وسلامة الغذاء، ويعمل العراق على الوقاية من الامراض ومكافحتها من خلال العديد من الاجراءات والتي تشمل القوانين والقرارات المتعلقة بمكافحة الامراض المعدية وكذلك الابلاغ عن الامراض المعدية ووضع سياسه وطنية للوقاية من الامراض ووضع برنامج للقاحات البيطرية، وتعد سياسة الامن الحيوي المتخذة لحماية صحة الانسان والحيوانات من المخاطر الحيوية ضرورة في حاله تفشي المرض في المناطق الخالية منه، اذ ان تطهير المنشأت والمعدات والمركبات بالتزامن مع الحجر البيطري او السيطرة على حركة الحيوانات غالبا ما تكون كافيه لمنع انتشار العامل الممرض، حيث يجب تنفيذ تدابير الامن الحيوي المناسبة في جميع انحاء العالم.

الكلمات المفتاحية: الامراض المعدية، السيطرة، الحيوانات.

INTRODUCTION

In recent years, a number of programs related to the development of the livestock industry have been initiated in Iraq. This was done primarily to enhance the production of milk and meat (and their products) and thus to provide a nutritious diet for humans **(Nguyen *et al.*, 2013)**. It needs to be emphasized that for the development of the livestock industry, prevention and control of disease affecting animals (cattle, buffalo, sheep, goats, etc.) are of vital importance **(Thompson & Brook, 2019)**. Developing programs mostly involves the breeding of exotic germ, so the problems related to health and disease need great and concerted efforts e because of increasing susceptibility of exotic and crossbred animals to some of the infectious diseases prevent prevalent in Iraq **(WHO, 2017).**

Early detection and diagnosis as well as disease reporting is of paramount importance or effective prevention and control of diseases as well as treatment of diseased animals **(Murphy *et al.*, 2016)**. For this, an effective disease reporting system and good facilities for disease diagnosis are needed. Moreover, conducting research, oriented towards need and practicality, on various animal diseases will go a long way in devising appropriate preventive measures **(Sharma *et al.*, 2020)**. At the same time, it is also important to quickly transmit information about the results obtained in this way to those concerned with disease prevention and control.

Animal diseases should be controlled and prevented by getting vaccinated. Vaccine quality must be according to international guidelines prescribed in OIE manual of diagnostic tests and vaccines for terrestrial animals. A vaccination program is a part of an integrated control strategy which is utilizing a combination of control measures, ensuring vaccine quality and defining the condition under any policy must eventually be stopped **(Graham *et al.*, 2018)**. Successful implementation of vaccination campaign should be done by constant temperature control **(Rodaestat *et al.*, 2012)**. OIE has created regional vaccine banks for rabies, foots and mouth disease to provide support for its member countries in case of an emergency situation **(Jain, 2017; Samuel *et al.*, 2019)**.

Zoonotic pathogens could be locally transmission to human through different ways such as; meat which sold in markets could be high risk due to undocumented pathogens in animals (**Tanvir *et al.*, 2020).** Agricultural workers who are in touch with a high use of antibiotics of farm animals **(Anderson, 2016).** People who lives adjacent to wilderness area or in semi-urban areas with high numbers of wild animals such as; rats, foxes or raccoons and urbanization and the destruction of natural habitats increase the contact between human and wild animals **(McArthur, 2019).**

Aims of study

The aim of the study is to determine how control the infectious disease between animal and human by different factors disease reporting system, diagnoses and vaccination and prevent disease transmitting.

First: Disease reporting system

An effective disease reporting system not only helps in the prevention and control of diseases but also provides useful information regarding occurrence and distribution of diseases (**Fofana & Hurford, 2017; Coles, 1999)**.

Disease reporting system provides an effective information about outbreak occurrence could be passed to people who concerned with the disease to the other parts of the country if they are contagious, causing huge losses **(Kardjadj, 2018)**. It can also be emphasized that

veterinarians failure to make a correct diagnosis or to seek help in diagnosing it in case of difficulty will lead to similar problem **(Stepita, *et al*., 2013)**.

Control of infectious diseases refers to actions and programmers directed towards reducing disease incidence (new infections) reducing disease prevalence (infections in the community at any given point in time), or completely eradicating the disease. There are four main types of disease: infectious diseases, deficiency diseases, hereditary diseases (including both genetic diseases and non-genetic hereditary diseases), and physiological diseases **(Michael, 2007)**.

Second: Disease Investigation and diagnosis services

Disease diagnosis service is a good idea to have disease diagnosis facilities very close and easy to access **(Dawson *et al*., 2001)**. Diagnosing infectious diseases delay will obviously take preventive and control measures delay **(Bauman, 2007)**. These facilities will need a long way to providing immediate assistance to veterinarians and livestock owners in diagnosing to prevent disease spread, which would cause huge losses to financial livestock owners/farmers **(Dejonge,2007).**

Third: Disease control

Disease Prevention is the most important factor within disease control, It is the first line of defense against disease as following **(Sommer, 2005)**.

1. Exclusion of infectious agents from the area, i.e. quarantine **(Luke *et al.*, 2021)**.
2. Measures to protect residents from disease already in area **(WHO, 2022)**.Theses include:-

a- Environmental hygiene and sound farming practices (sanitation, housing, water supply, disposal of excreta, vector control, etc.).

b-Immunization (Foot and mouth disease, hemorrhagic septicemia, Black leg. Sheep pox, Enterotoxaemia, Anthrax, Theileriasis, Brucellosis etc.

c- Chemoprophylaxis (Helminthic infections, Coccidiosis, etc).

d- Periodic testing for early detection of subclinical infections. (Tuberculosis, John's disease, Brucellosis, Mastitis, etc.).

3. Education includes:

a- Providing programs for veterinary staff to keep them abreast with the latest knowledge-information on the diseases, particularly with regard to their diagnosis, treatment and control **(Li & Dong, 2019)**.

b- Animal health orientation program for the livestock breeders/farmers with particular emphasis on sound husbandry practices and prophylactic measures against animal diseases **(Todar, 2007)**.

In the face of an outbreak, certain immediate measures need to be taken to control on disease **(Maarof *et al.*, 1987)**, these include:

1. Isolation.
2. Control on movement of animals and attendants.
3. Environmental hygiene.
4. Sound husbandry practices.
5. Vector control.
6. Individual protection (immunization, chemoprophylaxis)
7. Elimination of infection i.e. treatment.

The efficiency and vigilance on the part of the Veterinarians and livestock owners (for early detection and prompt notification of disease) **(Edyniesky *et al.*, 2020)** efficient and prompt disease diagnostic facilities/service (for early correct diagnosis of the disease) and

judicious adoption of preventive measures (quarantine, isolation, vaccination, chemoprophylaxis, etc.) are the essential pre-requisites for controlling diseases in animals **(Peter, 2020)**. National Vaccinations Laws, The country should have laws which regulate veterinary work with regarding veterinary diseases and vaccinations **(WHO, 2020)**.

The policy will act as a coordination framework for all parties involved in the immunization field and enhance the efficiency of services **(Falih, 1990)**. It also aims to legislate Laws and regulations which should be binding on all parties in the field of veterinary health, as well as other health institutions concerned with animal, human and public health **(Falih, 1990)**.

These aims include

1. Cooperation between the government, veterinary and health sectors and animal owners to support the health system in the country in general.
2. The health and veterinary institutions must have a map of the epidemiological diseases in the country in order to know the percentage of infection and fatalities for all diseases and to know the season of emergence of some diseases.
3. Governmental veterinary institutions must provide veterinary vaccines on a continuous basis at subsidized prices and obligate all field owners to vaccinate all animals.
4. The state must develop veterinary institutions and laboratories for the purpose of conducting scientific research and diagnosing diseases.

CONCLUSIONS

Further study how put epidemiological maps to infectious disease in Iraq. Immunization very important each year. Early diagnosis to disease very important to reduce loss economy. Make a survey in all Iraqi provinces on animal disease to know the prevalence diseases.

RECOMMENDATIONS

1. Education owners about the diseases in animals.
2. Hand hygiene farms.
3. Personal protective equipment is used which includes gloves, etc. to protect owners and peoples from zoonotic diseases.
4. All equipment and areas that come in contact with animals should be thoroughly cleaned and then disinfected.
5. Isolation infected animal from other animals to prevent the transmission of the infectious disease to other animals.
6. Eradication of dead animal by burning or buried deeply.
7. Eradication of vectors such as lice, mosquitoes, flies, ticks, fleas, rodents that can transmit certain pathogens.
8. Vaccination importance to animals.
9. Veterinary biomedical waste is a potential source of infectious disease , so should be eradicated in hygienic ways.
10. Footbaths or wheel baths are used to decrease (but do not eliminate) microbiological contamination at the entrance of farms or clinics.
11. In case of prevalence of high risk infectious disease, it should prevent animal transporting from an area to another by applying quarantine.
12. Tell and report the authorities about the notify able disease when appear in such area.

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