

Role of Veterinary Services in Health and Hygiene

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Abstract:

In the control and prevention of diseases which are transmitted from animal to man, veterinarians play an important role. They became involved in public health through the control of diseases born from animal or preventing the food chain from diseases. They work with various other professions like toxicologist, researchers, food inspectors, etc. and maintain proper food chain which is important for health of human, animal as well as for environment. After facing many challenges in the field of food safety and hygiene the more improved techniques and methods were developed. But the challenges never end, the new and modern trend for veterinary services are responsible for the coordinate, sanitary involvement from stable to table. The modern approaches of veterinary services are helpful to improve the food security and hygiene. This paper gives the knowledge about how veterinary services work in improving the health and hygiene of human, animal and environment. Modern food hygiene program and the project like One Health is also discussed which will provide the knowledge of programme under veterinary services.

Keywords: Food Hygiene, Health, Diseases, Food Chain

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Introduction

To practice veterinary in any country license is passed by a relevant Veterinarian stationary body and that licensed person is known as Veterinarian. The authority of veterinary handle and provide all services of veterinary. Veterinary authority gives licenses to private veterinary organizations and then both private and government organizations implements health and welfare methods for animals. (<http://www.oie.int>). The veterinary authority is a government authority which have the responsibility to manage the execution of animal health and hygiene. This authority includes veterinarians and other professionals.

At the farm level, livestock diseases are controlled by veterinary services. It is very important to control and prevent the epizootic diseases of livestock. In the prevention and management of transmissible diseases of animal veterinary services plays a key role. In the production chain, by taking various positions veterinary services especially private veterinaries have expanded their professional actions. (Bellemain, 2013). When veterinarians have a dual charge then the role of the service is also increased from farmhouse to abattoir. The main two responsibilities which are charged to veterinary services included epidemiological observation of animal diseases and conforming the safety of meat products. Food hygiene and animal health both are included in the training and education of veterinarians which make them suitable for ensuring the safety of food of animal origin.

In the report of World Organization for Animal Health (OIE) it is said that during the primary production, foodborne diseases grow because of contamination of foods with zoonotic agents. Therefore for investigate of such eruptions veterinary services plays an important role. They will calculating and applying beneficial remedies for the identification of cause of disease and problem. This work is done with the help of other organizations or with human health professionals, food producers, traders, etc. (Bousfield and Brown, 2011)

The most important worldwide issue is food safety. To consider the risks and management the trend in food safety is increasing which is good for the world. In the prevention of foodborne diseases the major role are played by the veterinarians. For the proper management and control on foodborne diseases modern technologies and approaches are need to

adopt. For major countries food is the major source of import and export trade. Therefore, it is an important need for the management and control on foodborne disease. (McKenzie and Hathaway, 2006)

Roles of Veterinarians and Veterinary Services:

Food Security and Safety

The role played by the veterinarians in the stages of food chain is quite important. The food security is defined in which both economic as well as physical asses is included to food which also meets with the nutritional need and preferences of food to people. The main limitation in the field of food security is the low number of veterinarians in both private and government sectors.

Health of animal and security of food are closely linked with each other. To detect the early signs of diseases in the population of food animal an official veterinarian is positioned. They ensured the production of food by confirming the health of animal which produce food they also looks for the enhancement in the productivity by using various modern techniques. For cold markets and super markets chain official veterinarians provides certification and controls on the production of animal origin. The control and preventions are provide by the veterinarians which will help in reducing or eliminating the virus and then it will further exported.

In the activity of food safety involvement of veterinary is important throughout the food chain. Safety of food, health of animal and zoonosis all are comes under the food chain. To reduce various foodborne diseases the contribution of risk management activities is increases they will eliminate, prevent or control the diseases transmitted by food. Currently veterinary focus mainly on the hygiene of meat. On the other side the common area of veterinary also includes

- Evaluation of foodborne diseases and risk assessment by modern and scientifically methods
- The proper management and control on overall food chain in which designing and verification of food control must be at appropriate point.

- All the hazards chemical or biological is monitored during food chain process.
- development of capable authority's public health policy
- communication of risk

The food processor and producer of food have general responsibility for the security of food at primary level but the veterinarians will also play a major role in ensuring the safety of food.

Food Suitability

In all measures and condition starting from primary to end the safety and appropriateness of food is considered under the food hygiene. Appropriateness is considered on the basis of its intended use the food is acceptable for consumption of human. In case of hygiene in meat the major component is to detect and all those abnormalities is removed which are not good for the public health.

Animal Health

Transmission of unusual diseases by feeding of meat scraps and other factors like uncooked pet food to animals can seriously affect the health of animal, which can give a result into a significant loss in economy of animal population. So during ante and post-mortem meat the inspection is important by veterinary services to control or prevent the hazard of animal health. Particularly for exotic diseases the inspection of slaughter animal is important because they gave a significant contribution.

According to OIE Terrestrial Animal Health Code, 2004, for health importance the investigation of slaughter animal is very important for the outlook on the diseases like zoonosis. In the case of suspected animals many scientific test and techniques can be applied for further diagnosis.

In a suitable territory or in country the surveillance of animal health allow the veterinary service to prevent and identify both endemic as well as exotic diseases. Which provides important inputs toward the risk analysis of animal health import. In any activity, it is included that Veterinary Services are always be able to determine economic support for the food production and processing industries and there

is no conflict of interest between animal health and/or public health.

To prevent duplication and unnecessary costs, it is understandable that veterinary services should integrate the activities to maximum as possible. To achieve both public and animal health the opportunities for veterinary services are rises as:

- Sharing of facilities of diagnosis, collecting and integrated the monitored data
- Combining of technical experts
- In an integrated manner, inspection requirements are enforced and verified.

Animal Welfare

Veterinary Services recognized the standard of welfare for the animals who is producing food. During the time of slaughter the area of concern is increased by the consumers in terms of the acceptability of food from animal origin, because it will greatly impact on the safety of food. Under the TBT and SPS agreements, the international trade measures which are generally based on the welfare objectives are not permitted. In some WTO countries science based controlling requirements have been executed. (McKenzie and Hathaway, 2006)

Animal and Zoonotic Disease

To recognize the diseases vets are trained. The main diseases which affect both human and animals is zoonosis. For the inspection or confirming the diseases vet take some steps

- The first two steps taken by the vets are for confirming the diagnosis and control the outbreak of diseases.
- The next step is to ensuring that it will not enter to the whole food chain.

Now if the bird or animal are found to be free from the diseases they are allowed to market. But it is remembered that only the animals or birds which are passed the test go for further marketing.

Veterinary Professionals in “One Health”

One health is defined as a branch of knowledge in which the cooperation of interdisciplinary methods linked with the veterinarian and physician which will give result in improved health of people and animal with safety of environment. In the ecosystem health, a unique and important opportunity is provide by One Health concept for veterinary medicine to be a leadership role for the better good of humanity.

75% of increasing infection diseases in last 30 years are linked directly or indirectly with the origin of animal. The concept of One Health is becoming more serious the connection of human, animal and environment is linked with the emerging infection diseases. For success in preventing and eliminating disease veterinarians provide their bond and deep understanding of biological system, epidemiology, experience, and in the knowledge of disease processes. For zoonotic diseases veterinarians are frequently in the first line of defense as well as for various toxicants which or naturally or intentionally. For food safety, animal safety and public health they are always in contact with large variety of domestic and free- ranging animals. Except from the zoonotic diseases the other integrated approach is identified which promote the diseases which is noninfectious like obesity, cancer, etc. For human medical replacements of joins like hips and knees the development was primarily done by veterinarians in animals as a significant model. Collaboration of veterinarian with other physician, environmental and health officer is an opportunity given by the concept of One Health for understanding and control the diseases affects human. (Pal, 2014)

Critical Control Point and Livestock

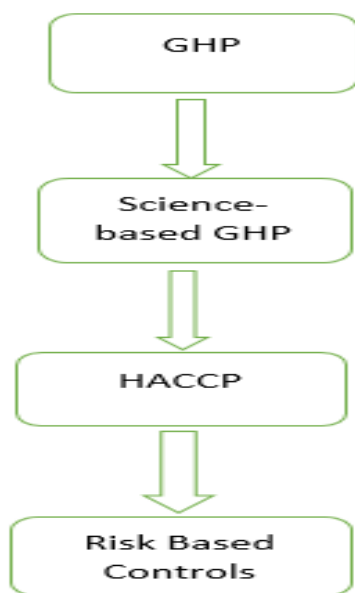
The hazard analysis critical control point (HACCP) system is suggested when the production and processing of food comes with safety. The duty of HACCP is to analysis the hazards and make decision to limit or reduce the hazard by determining various factors. In the production of livestock the points where control can be functional is used.

By aiming the fit and healthy born animal with good level of immunity many steps should be taken with the birth of the animal, or at shading in the case of poultry. The proper management is done in all stages of animal production which also include the stuff of food. Appropriate vaccine is used time to time like vaccine neonate which is given to the pregnant dam

i.e. K99 E and bovine combined rotavirus. In the first 2-3 weeks of life colt vaccine is provided for calf scrubs to protect the young. Normally birds and animals are reserved in a group and it is volunteered and controlled according to the nature and farming system of that place. The main condition of using the system for animals and birds is that they were in best condition and prevent from diseases from an individual or flock of animal. It is the most certain way in which food security, animal security and human health security all are done properly and the risk of diseases is minimum.

Bio secure housing is also one of the most positive way to decrease the risk of diseases which will directly impacts husbandry. In the system where bio secure housing is used the policy of all in or out is not followed, which is contrary towards the extensive system. In this system before restocking the disinfection and cleaning must be used. The practice of cleaning has been extended to involve all lodging of animal on the site which is emptied of livestock. Before restocking the site disinfected and cleaners is used. It is the most important factor that the husbandry is clean to make animal healthy and clean. Reduction in contamination of food for animal is also a major steps toward maintaining hygiene. As the material used for housing of animal also have more influence on the property of cleanliness, the various housing material used are cubicles of cow with straws, rubber mats , sand as bedding, straw little yards etc. and combinations. One of the most desired is straw bedding but if the bedding is regularly replaced or cleaned and in some parts straw may be not available so here it comes with its disadvantage.

From the animal and human health perspective stockman also plays a very vital role. Food which are provided to animal must be free from any contamination and pathogens. Because the food they ate gives direct impact on the condition of their health. The food of animals are produced from commercial feed mills and from home grow and the food which animals takes may carry pathogens. Here the role of farm comes because the need to store food in a manner where food cannot be contaminate from the external influence. (Johnston, 2000)



GHP: good hygienic practice
 HACCP: hazard analysis critical control point

Figure 1: Changing approach to food safety in the last two decades

Scope of Modern Food Hygiene Programme

All necessary measures which assures the safety, freshness and soundness of food from its production growth to its final consumption comes under food hygiene. This definition is adopted by the food standard programme of WHO/FAO.

The concept of food hygiene is broader in many countries and in some countries it is same they do not change the perspective toward the service, it remain restricted to some examinations. At the last stage of food chain there is no any practical, scientific or economical method to solve the problem of hygiene in food production and this old concept is not ideal or even comparable with new modern technologies of preventing medicines. To change the scope of food controls from negative to positive measures food hygienists must adopt an active and progressive policy and working toward the quality and avoidable losses from production to distribution.

In many countries elegant food hygiene control system is already existed and the policeman attitude in food hygiene programme is old fashioned. By the right type of producer and manufacture advices which are helpful is readily accepted. The elegant

food hygiene control system enables the hygiene services to manage many more tasks. They contribute to the prevention, surveillance and controls of diseases like zoonosis and other animal diseases. It also have the contribution towards the reduction in malnutrition and protection of environmental health. (Matya)

Review of Literature

Pal, Gabrezabiher and Rehman (2014): With the involvement of numerous disciplines which collaboratively work regionally, locally, nationally and globally for dealing with concept of One Health depending upon multi-dimensional integrated combined efforts. This is helpful in generating optimal health for human, animals and above all the environment. It is not possible to ensure the best performance without any integrated approach which mainly involve wildlife, humans, pets, and livestock. To ensure safe health and a better world more collaborations are needed to despite the achievement of control of Avian Influenza HPAI H5N1 in One health program.

(Elvbakken, 2017) valuable knowledge are provide by the food control veterinarians. They cooperate and work with other physician and organizations. For the inspection of food the research of bacteriology and microbiology provide very important knowledge. In the field of public health veterinarians get respect.

(Noordhuize and Silva, 2009) health of public and safety of food is the main issue which is leading on the other side health of animal and welfare are secondary issue. On diary and pig farms the safety of food and animal healthcare is important so the implementation of the programs like HACCP becomes compulsory. To maintain and improve their crowd status the farmers needs to validate their status in three areas and would also help in to market their product and recall their license.

(Bellemain, 2013) in the field of animal food safety and health, veterinary services plays an important part. During last few decades, the development of a combined method to food safety is strengthened by the veterinary services in which whole food chain is included i.e. from farm to fork. The veterinary services need to take the responsibility for whole food chain but they ensure their self in a prime position which is principal coordinator or leader.

There is no doubt that they are essential part in this modern approach to provide health guarantee and the training within which they operate gives them full suitability.

(Bousfield and brown, 2011) to overcome the challenges of food safety and animal health new technologies are required for both government as well as private companies. But the only profession who is fully involved in facing these challenges is veterinarian. In this global world the import and export of food and animals is increasing which make the profession of veterinary more crucial. Vets are trained in a high degree level which includes bacteriology, virology and many risk assessments.

Conclusion

In the field of animal food safety and health, veterinary services plays an important role. The main aim of veterinary services is to strengthen the

approach of food safety throughout the whole food chain, by integrating the development.

From last few years many researches and approaches comes to modernize the service of veterinary. Role of veterinary services is not limited to a single place or field. security of food, health of human and animal, control and prevention of various diseases which are transmitted from animal to human all are comes under in the service of veterinary. As they work with many other profession which gives them an opportunities to understand the new challenges and concept. For food safety and hygiene which is the important factor for the health of human, environment as well as for the environment veterinary uses various services and modern application to control and prevent the transfer of infectious diseases. Many programme are started in the world to strengthen the health of both human and animal by aiming the mission One Health.



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