

## **BIOSAFETY MEASURES IN PHEASANT FARM**

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*Summary:* A key factor of success in breeding and farm production of Pheasant game is a continuous implementation of bio security measures throughout the entire technological process. Therefore it is necessary for each individual farm, taking into account all of its construction and technical characteristics, to make a plan of implementation of bio security measures-Bio safety Protocol, following all technological norms, in order to produce animals of good vitality and optimal health status.

*Keywords:* Bio safety measures, Bio safety Protocol, the technology of breeding, pheasants, pheasant.

### **Introduction**

Pheasants are today the largest and most productive species of game birds in our and foreign hunting, thanks to its high adaptability to different habitats and all changes that occur in nature [3, 8]. In addition to these facts, the increased number of the Pheasant game in the hunting grounds has a great influence and increased interest of hunters for attractive pheasant hunting, and the increased market demand for quality game animals meat [2,15]. Great rise in hunting tourism due to increased interest of hunters to hunt Pheasant game in the hunting grounds and need to maintain optimum population density in nature, caused a need for increased intake of pheasants in the open hunting ground, specimens produced under controlled conditions by special technological process. In order to achieve greater success of the pheasants farm production conditions, increasing the percentage of upbringing and the adaptation of animals produced under controlled conditions, to natural environmental conditions in open hunting grounds it is necessary during their breeding on the pheasant farm to comply with all technological norms and Bio safety measures in order to reared individuals would be in peak physical condition and good health status [12]. Technology of pheasants breeding farm is a complex process that takes place through a cyclic sequence, starting with the production of eggs in the process of selection flocks home, storing them in separate rooms, their hatching in incubators and rolling mills, newly hatched individuals upbringing in special areas for growing up pheasant chickens from the earliest days to age when they are most suitable for adaptation to life in nature, depending on the direction of production, diet and preventive health care.

A key factor of success of the Pheasant game farm production is properly defined and implemented a security measure, which permeate through all stages of production [3]. Bio security of the pheasant farm in itself implies the implementation of specific measures aimed at prevention or reduction of potential contact of specific disease pathogens with individuals that are in the pheasant farm. In order to define the proper Bio safety Protocol and implement bio measures it is necessary to know the technological process and biology of pheasants, including diseases that most frequently occur in this population.

Farm pheasant hatchery includes holding of various age groups of pheasants in large numbers on a small area, which in practice, in contrast to pheasants in nature, where there is a balance between the body with good immune systems and the relatively small number of pathogenic pathogens, represents a major health risk. The concentration of a large number of individuals in a relatively small area and the enclosed space as a stressor affecting the decrease in immunity, leading to an increased risk for the disease within the population, resulting in mass mortality and significant economic damage.

As risk pathways for bringing of pathogens, generally speaking, pheasant farm workers or visitors are defined, vehicles and transport, the activity of wild animals especially wild birds and rodents, as well as the bringing a flock or a certain number of animals of unknown health status in economic or in the pheasant farm buildings yards. Therefore as the most important bio measures are defined Bio safety, traffic control measures, bio measures of isolation of poultry from infected equipment and infected animals, a measure of control insects and rodents, disinfection and good governance, ie. maintenance of facilities pheasant farms and holding yards. Pathogenic germs are transferred from place to place by garbage, dust, feathers, by air or through people, through equipment, vehicles transport, animals and other birds.

Having in mind that we have defined the people, ie. owners and workers as biological risk factors order to implement the best manufacturing practices, it is essential that family members who are engaged in jobs the pheasant farms, as well as all employees, daily wear freshly washed clothes and if they possess a personal holdings, do is not grown poultry in their farms. All visitors must register their pheasant farms and record the receipt ie. to the headquarters before entering the objects. Not one visitor, including representatives of authority services, inspections and other authorities is not allow to enter the production unit building, the buildings and other facilities if you do not have clean clothes, coveralls disinfected, washed and disinfected boots and a hat. It is important to define the duty of

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cleaning and disinfection of boots before entering and after leaving the production unit building. Fecal waste from the pheasant farm is a large epidemiological-epizootiological risk and as such is one of the most responsible for spreading diseases between production units in the pheasant farms. If in the holding yards there are numerous production capacity, is necessary to ensure the prepared special boots for everyone, and in the absence of the same it is required before entering any facility to change the boot swab. For workers and other involved persons it is required bathing before leaving the pheasant farms, in order to prevent the potential spread of pathogens to other farm buildings yards and food. Within the pheasant farms, it is forbidden to visit the different age groups, especially the young after the older category. If is not possible to avoid the visit of young ones, be sure to change clothes and bathe. In the modern facilities for the breathing of pheasants is practiced that workers wear clothes of different colors in order to control movement within the of the same production unit of the pheasant farm. Equipment inside the production unit and other equipment used in the of the pheasant farm is a very important biological risk factor, and therefore it is required, during the work with the same, to undertake set of principles in order to meet the standards of best manufacturing practices. One of the most important principles is to avoid borrowing of equipment between the production units within the pheasant farms, as well as between different the pheasant farms. If it is necessary and cannot be avoided it is necessary, before entering the equipment to thoroughly cleaned and disinfected it. An organization can limit entry and exit of all vehicles on the farm and the farm, with the possession of the parking lot outside holding yards where it is possible. For all vehicles, that entering farmyard in the economic is necessary to be disinfected before entering.

Boxes and cartons for eggs, which are brought in an economic yard, must also be disinfected. To all pheasant farm owners is recommended the business with companies that are also implemented bio safety measures. In addition to the previously defined biological risk factors, it is important to note that the animals themselves are very important in preserving bio security segment. Therefore, in order to increase the pheasant farm bio security it is necessary to prevent any potential contact of pheasants in the artificial rearing with wild animals.

In the process of immigration of new stem flocks are of, immigrate exclusively in previously prepared buildings yards, taking into account that the new immigrated flocks are of known health status and they are accompanied by health documents issued by an authorized veterinary services from areas where they come from. During the course of preparation and in the production of the number of continuous control is necessary of insects and rodents in the interior and in the immediate vicinity. It is also it is necessary regularly to remove dead specimens, with all measures of detection of causes of death. For raising the level of security in closed pheasant farm production an optimal functionality of ventilation system is necessary, particularly in the summer.

Finally, keeping in mind that the fecal waste is medium that can carry pathogens and it is necessary its daily removal depending on the technological process of production and proper packaging on a sufficient distance, respecting all the storage standards and handling.

For proper and successful implementation of bio security measures, it is necessary to determine the person responsible for monitoring and implementation of bio security measures in manufacturing facilities. The basis of success is well-defined Bio safety program and proper record keeping of all the implemented bio security measures. Once a month, it is necessary, to document the entire procedure, noting that all documentation is kept for at least three years as part of security program.

In addition to defined general measures for the purpose of preventing or reducing the risk of presence of the pathogens must specifically defined all Bio safety measures related to construction and technical characteristics of the object and technological process itself. In the first place it is proper location selection for construction of pheasant farm, construction and compliance with technical standards in building construction, adjustment of the number of parent flocks and breeding pheasant chickens in real production capacity of facilities, implementation of good farming and good manufacturing practices, with a particular aspect of continuous implementation of the standard procedures and pest control programs as well as preventive health care measures that are used in this production [3, 7, 11].

#### *Pheasant Farm*

Pheasant farms are objects that are used for breeding, reproduction and keeping up pheasant to the moment of release into the hunting ground. There are two basic ways of production, direction to the circle-production, which includes the formation of the parent flocks, incubation and breeding birds to 6 weeks of age and pheasant farms in which the breeding is carried out of pheasant chicks up to 12 weeks of age [4, 5, 6].

No matter which product direction is used in breeding Pheasant game it is the most important to provide the necessary construction and technical requirements, comply with technical standards and implement all constantly Bio safety measures.

#### *Location of pheasant farm*

When choosing the location for the pheasant farms, it must be taken care that pheasant farmyard with its economic and related facilities is located on the drain field, with enough sunlight and protected from direct air currents. That

the economic yard with aviaries is placed in their natural environment and that the procedure of "getting wild" takes place in the environment similar to one where the pheasant will be released [2, 3]. Pheasant Farm should be away from populated areas (in order to avoid contact of domestic poultry and pheasants), landfills and farms, and in choosing the location should avoid busy roads and near high voltage transmission lines [12].

Before the construction of pheasant farms, is necessary to conduct the control of the surrounding land and avoid the construction of pheasant farm in districts of certain diseases that are characteristic of the Pheasant game, with special reference that the pheasant farm is not built near the farm buildings for poultry breeding and pay attention to not build on the pheasant farms on migration routes of wild birds. Pheasant farm environment it must be maintained and regularly maintained to prevent potential colonization and activity of wild animals, especially wild birds and rodents in the immediate nearby of production facilities. Also, the pheasant farm should have water sources in sufficient quantities and of good quality, city water mains is recommended for the use and in using own water source, water must be checked regularly and take care of the installations [6, 8].

#### *Disinfection, fumigation and eradication (DDD-measures)*

As a continuous Bio safety measures that are implemented through the regular process technology on a daily basis or Bio safety measures are implemented in case of illness, disinfecting, fumigation and eradication are defined.

Disinfection is the basic bio security measures, which pervades in all segments of the technological process of production, which specially trained personnel daily conduct, according to defined bio safety protocol. This is primarily to current disinfection, while in case of outbreak of diseases in pheasant farm; disinfection must be conducted by specialized organizations, in collaboration with veterinary services and with taking special records. Cleaning and disinfection of facilities between the two production cycles, as a critical control point has an exceptional significance, because organic matter ie. fecal waste is the ideal medium for bacteria such as Salmonella Enteritidis (SE). Therefore, the goal of cleaning and disinfection of facilities on the one hand is the removal of visible and invisible dirt and on the other hand the destruction of potentially pathogenic present bacteria which reduces the risk of infection in new immigrants registered flocks with Salmonella and its uncontrolled expansion in the next phase of production. During the dry ie. mechanical cleaning of visible dirt must be removed from the facility all the specimens, including the dead, and other animals that can potentially be found in the house (cats, wild birds, rodents). For cleaning area besides the the standard equipment is recommended and the use of compressed air which is used for cleaning of exterior and interior ventilation holes and channels, which are often contaminated with pathogenic agents. All mobile equipment to move all production from the unit starting from room to hold the flock to the cages, if possible, takes down is cleaned of visible and invisible dirt and disinfect. After mechanical cleaning, it is necessary to wash all surfaces and equipment in pheasant farm. This washing procedure starts by soaking all the dirty areas, in order to achieve the same effect of wetting. For cleaning surfaces use water under pressure, with the possibility of using devices that produce hot water. During the process of cleaning the cage, firstly wash the upper parts within the production unit, and then wash floor area and drainage channels. After washing all the water that may be retain in feeders and drainage canals should be eliminated. Repeat washing procedure until a complete remove of dirt. Disinfection of facilities within the pheasant farm is carried out by using the aqueous solutions in the form of disinfectant spray, spraying or fogging. Means that are used are mostly phenol and quaternary ammonium compounds, with the most commonly used phenol compounds that the best respond in the presence of organic matter. Chlorinated products can be used but a large problem is their reducing the activity by organic matter. It is important to note that the effect of disinfection depends on the presence of organic matter, which reduces the effect of disinfection as well as the compatibility of devices used for disinfection and cleaning. After finishing of disinfection and the estimated time of exposure, it is necessary to control completed disinfection.

Disinfestations as bio security measures is daily conduct in the facilities for storage and incubation of eggs, as well as in facilities for the breeding of pheasant chickens indoors, by using the permitted funds under special precautions, taking into account the residual effect of applied preparation and sensitivity on game birds to specific groups of chemical biocides.

The following indispensable bio security measure is fumigation. Fumigation in the pheasant farm implement particular registered organization for performing tasks-DDD, where pest control measures must be implemented by specially defined plan and for all treatments must be kept separate records. Control of population density of rodents as a method in the implementation of bio security measures, taking into consideration the epidemiological-epizootiological and economic importance of regulation of their populations, presents the basis for good planning and implementation of pest control. Rodents are a great source of pheasant farm infections (SE). For one day a mouse produces about 100 pieces of faeces and each can contain up to 230 000 SE. In case rodents throw faeces in a feeder, places the pouch, and elsewhere, via faeces the infection can spread within the production facilities and contaminate eggs. Rodents are most often contaminated with SE through the garbage, thus SE, through some wild rodents or birds can, reach within individual production units, depending on the construction status of the individual production units. Improperly stored garbage, with characteristic unplanned heaps, which are usually in the immediate vicinity of the facilities, is a continual source of infection for the parent flock and other production

units. Rodents reproduce rapidly in the pheasant farm area. Easily reachable food, water, quite favorable places for the formation of the shelter enable that the number of rodents can be progressively increased, even at 10,000 while the annual production cycle. Rodents consume food, make insulation damage, dig and under dig the foundations of the structure and destroying buildings. Each mouse consumed about 5.5 grams, the rat as much as 25.0 grams of food per day and about ten times more disperse and contaminate food, as with the aforementioned potential number and number of days during the production cycle of one year, represents a tremendous amount and great economic damage. Therefore, the regulation of the rodent population in the pheasant farm pays very much attention. One of the measures key prevention, which is conducted in order to control the rodent population in pheasant farm, is continuously maintain the holding yards, in order to create unfavorable conditions for the formation of habitat and food for rodents, which involves the the removal of wild vegetation, grass mowing, the removal of a complete waste. As one of the very important preventive measure is defined the measure of the closure of the economic yard with foundations that are 50 cm depth, digging trenches and the formation of protective road area around the facility that are 1 to 1.5 meters wide and 0.15meters thick. In addition, as a preventative measure to prevent the entry of rodents into the facilities, technical measures are defined. The most important measures are setting the protective nets on the windows and air vents, the protection of rodents entering through doors and other openings for manipulation. In the case of voids and openings where rodents hide, it is necessary to close them by using the various solid materials. The interior of the facilities should be maintained at a high level of hygiene, which involves the removal of all dirt. i Rubbish Dumps in vicinity of the facility are often the environments in which rodents formed their habitat, so it is necessary, in case of noticing such events to completely remove rubbish. One of the most important and complex methods in the implementation of bio security measures control the rodent population is the use of chemical in various forms of baits. Baits can be in the form of powders, balls, pellets, blocks, tablets and liquids. In the population density control programs of mouse like rodents, by using chemical rodenticides, is practiced the use of the protective boxes that are filled with baits of different formulations. Boxes keeps the baits clean and presents the safe place for rodents' diet where they like to enter. Boxes are designed that baits cannot approach the other species, particularly non-target animals. As the simplest solution for this type of boxes, the ordinary plastic tubes diameter of 4cm/8cm and length of 30-45cm can be used. In addition you can find a commercial boxes, with holes of different diameters, depending to which population are designed for. Boxes with chemical rodenticides are placed inside the rooms where there is no a possibility that the individual pheasants come in contact with it, which means that in the production units, where the individual hold in the floor system with boxes with rodenticides do not place. If a pheasant farm area has an attic units, it is recommended setting of the boxes with poisoned baits in attics and in parts where food is stored, graded and stored eggs with respect to the special safety measures to prevent potential contamination of food and other raw materials used in pheasants 'diet. After placing, the bait boxes are checked every 2-4 days, with adding new e amount of baits depending on the consumption. If rats are a problem, set the boxes up in areas of their activity with larger entrance, with a recommendation that the boxes are placed near the potential litters and manifestation of their increased activity. During the installation and renewal of baits, be sure to use gloves, with a special container (spoon) to add the bait. In facilities where food and eggs are stored, it is not recommended to have a powder formulation of baits. Powder can be very functional in the regulation of the rodent population because it usually sets on the direction of movement of rodents, where it catches on their feet and hair, but it is problematic in terms of potential contamination of equipment and supplies that can be found in the immediate vicinity. During the process of control of the rodent population, it must be used high-quality fresh baits with the proper nutrients whit anti coagulation rodenticides as carriers. During the cleaning process of facilities, it is practice to set up baits, because due to the lack of garbage where they like hiding, rodents like to visit the boxes and eat poisoned baits in them, with the use of anticoagulants but also fast acting rodenticides may be used.

In the process of regulation, the mouse like rodent population on pheasant farm an important place occupies the monitoring of the number of rodents by the method of rodent indexing. Indexing rodents as a method is used to track population density of rodents on many farms. As the methods, it is used the number verifies by the method of visual ratings as well as the human method of catching rodents in particular mousetrap-cages. This method estimates the relative number of rodents, the current quality of protection as well as the average risk that by rodents if they are infected it can affect specimens in pheasant farm. The method of indexing is done by marking a number from 1 to 3 The complete program of indexing is kept through written records in separate forms. At the start of indexing, the form of visual density ratings of rodents is filled, by using special technological process. Based on data obtained by visual marking, the mousetrap t-cages are placed in places where rodents will probably be caught. Depending on the size and number of cages in the facility about 12 mousetraps with 30 grams of food are set, where they stay for a week. Twice a week, mousetraps are checked. Each mousetrap in which is not caught anything after the first checking, are being moved to another place. Program of the number control provides humane euthanasia of captured rodents. A critical limit of the population number control is the minimum number of  $RI = 1$  If the  $RI$  higher than 1. It is necessary to repeat the control program. Indexing is done once a month in each production unit. Always, all the obtained data are entered in specially prepared forms. In the process of the rodent population control on the pheasant farms, a person must be charged who will monitor, by using

the methods of indexing, population size in the continuity and based on that, the specialized organization will undertake the regulation methods of the rodent population.

#### *Safe disposal of corpses of dead animal*

Remains of not hatched eggs and corpses of dead animals are potential source of infection and the environmental problem on the pheasant farm. They are the potential danger for the human and animals' health because they can spread infectious and parasitic diseases, many of which are zoonotic diseases. In order to solve the potential healthy and environmental problems it is necessary that on a specific place, far enough from on pheasant farm to build pit graves. Building pit graves and their use requires compliance with all technical standards, with the implementation of security and functionality. One way for the safe disposal of corpses and remains of not hatched eggs from the pheasant farms is transportation of them by the specialized agencies, according to the Veterinary Act if there are appropriate conditions for that [3].

#### *Production units within the pheasant farm*

Pheasant farms are usually rounded up with a cycle of production, and they possess the parent flock aviaries, a room for storing eggs, hatchery, and facilities for the breeding of young pheasants and aviaries with outlets where breeding of young pheasant is done to the moment of releasing to the hunting grounds.

#### *Aviaries for the parent flocks of the pheasants breeding*

Aviaries are enclosed units where the parent flocks are held for the purpose of the egg production, with a sex ratio in the range of 1:5 up to 1:20, according to the practice, with a floor area per bird of the 5-10m<sup>2</sup>. They are fenced with a knitted wire sides and from above can be open or covered with wire, with all the bio safety aspect taking into account of all the risks brought by wild birds and game birds from the wild and the covering of wire cages is recommended. The average height of cages ranges from 2.2 to 3.0 m. The modern practice in selecting nets require the use of the net size of 2x2cm or 3x3cm, with obligatory of wire digging into the ground at least 50cm. Inside the volier there are feeders, drinkers and shelters. In most of the pheasant farm aviaries 'floor are made of land that is planted with clover, sunflower, or amaranth [2, 4]. After the completion of the production cycle in the aviary, a break is needed for it for at least 6 months before settling a new flocks. This is achieved by the existence of a number of aviaries in the pheasant farms and by holding parent flocks just in one of them while others are kept for the reception of pheasant chickens [12].

For the purpose of disinfection it is necessary to plow the entire surface of the aviaries every year the entire surface t aviaries here, treat with lime powder, and 5-7 days after treatment of surface to plow again and prepare land for seeding of clover, sunflower, or amaranth [3, 5, 13].

Wire parts of the aviaries and shelters after the deportation of the old flocks and before the reception of new parent flocks are mechanically cleaned and disinfected by some chemical disinfectants that do not have a corrosive effect. Feeders and drinkers are cared out from the, aviaries mechanically cleaned and then disinfected similarly as in keeping of poultry, noting that the area around the feeders and drinkers is disinfected continuously during the manufacturing process [1, 3, 4].

#### *Incubator stations*

Pheasants begin with laying eggs in late April and early May and a period of carrying lasts about a month. Eggs are collected from the aviaries several times a day and before storing small, large and irregularly shaped are discarded [3, 10, 13]. Collected and selected eggs are placed in a separate room with a temperature of 10-14 ° C relative humidity of 60%. An air exchange in the room for storage of eggs is usually based on the principle of natural ventilation. All collected eggs for incubation are being disinfected with formaldehyde steam, by a special procedure for 30 minutes [3, 5]. The eggs remain in storage for 5-10 days and then placed in cardboard boxes used to transport eggs in poultry [7]. Incubator station itself consists of rooms for the accommodation of incubators pheasant chickens hatching. Before inserting the first plantation, disinfection of tray and incubators is carried out with formaldehyde steam for 30 minutes, and then the incubator evaporates well.

After 21 days spent in pre-rolling mill, eggs are transferred to rolling mill, located in a separate room [2, 3]. Remains of not hatched eggs from the rolling mill are collected and safely eliminate to the pit or by the elimination of zoo hygienic service.

#### *Production units for the breeding of pheasant chickens up to 6 weeks of age*

The standard way of keeping the pheasant chicks up to 6 weeks of age in the facilities for breeding is based on the floor or cage system of keeping [9]. In the floor system, the interior of facilities is divided into segments and separate with wire. The floor of the facilities is of a thickness of 3-4cm and strewn with sawdust, or with a mixture of sawdust and sand. If there is no sand on the floor it is specifically puts around the feeders, as it is required for normal regulation of pheasant chickens digestion. Artificial hen (identical technologies with breeding birds in that age) heats the interior of each segment [3, 12, 13]. Rooms with artificial hen were built in two

rows, and communication between the rooms is performed by using halls, which if necessary can be closed. In each room, heaters are set, whose number depends on the size of the room, feeders and drinkers. At the time of settlement of the pheasant chickens, room temperature must be at 26 °C. Drains with shelters are closely bound up on the rooms, fenced with woven wire [3, 5].

In the battery, system of the breeding, battery-farming cages is constructed placed in several-floor (usually 3-5). Area of a floor is usually about 2.60 m<sup>2</sup>, capacity of 150 of the pheasant chickens. Cage construction is made of stainless metal. On the first day of settlement, the optimal temperature is 27 °C, and 35 °C in the batteries, but the temperature in the battery decreases by one degree every day. Regime of light is constantly for 24 hours [3, 9, 14].

When the pheasant chickens about two weeks old, then outputs between rooms with artificial hen and discharge are opened. Before immigration, both types of facilities for the breeding of the pheasant chickens, must be mechanically cleaned, washed, disinfected and paint. Wire parts of buildings - drains and roofs are mechanically cleaned and are being disinfected by some chemical disinfectants that have no corrosive properties. Feeders and drinkers are carried out, mechanically cleaned and then disinfected similarly as in keeping of poultry [4, 9].

The mat, which is brought into the facilities, is disinfected and must be dry. In the process of disinfecting mats a high efficiency showed the sodium bicarbonate which is sprayed on the mat and then left to dry, thus avoiding the appearance of fungi [3]. In the recent times for disinfectant of mats and soil surfaces formalin is used by a special technological process [3].

#### *Aviaries for breeding of the pheasant chickens, 6 weeks of age*

When pheasant chickens turn 6 weeks the door leading from the outlet in the aviaries opened, construction characteristics of aviaries for the the keeping of parent flocks, where they stay until the moment of discharge into hunting grounds. Soil of outlets is prepared identically as in voiles for keeping the flock [3,7]. Each side of the aviaries is fenced with knitted wire, and closed above with wire net of the same technical characteristics as well as voiles for the breeding of parent flock. Height of the central pillars of the aviaries is 3-5m, and the other is 2.0 to 2.5 m. Surface of soil floor of aviaries is 1-3m<sup>2</sup>, per bird, depending on age and it is sown with corn, sunflower or high grass. During the breeding of the pheasant chickens, in the aviaries principle of spreading the area is applied, depending on the age of of the pheasant chickens, taking into account the optimal area per bird [3, 13].

#### *Health care of pheasants*

Health care of pheasants in pheasant farm includes the control of all product categories and age of birds. Regular medical control of mortality is needed, which occurred in the each phase of technological production through the implementation of autopsy of corpses of dead animals, microbiological and parasitological examination. Particularly is important the controls that are performed in the parent flocks before winter and dissemination and with offspring of pheasants at the age of 2, 8 and 12 weeks. Breeding eggs are also controlled as well as clots who are examined microbiologically [3, 8].

In the preventive health care measures, it is required to implement a regular blood test for antibodies to NCD, TIF, AI (if necessary).

From required measures of medical care vaccinated against NCD shall be done.

Giving anthelmintic and coccidiostats to specimens through food is conditioned by epizootiological situation on the pheasant farm [11, 14]. Both groups of preparations should give for therapeutic purposes only when the infection is detected by the competent veterinary services and treatments are undertaken obtained by expert opinion and instructions [1, 2, 3, 4, 6, 7, 8, 15].

### **Conclusion**

Farm hatchery of the pheasant requires the respect of all necessary technical standards and continuous implementation of bio security measures at all stages of production, in particular defined bio security program. Pheasant farm owners in the order to increase efficiency of production and breeding of individuals of good fitness and optimal health status must be in cooperation with authorized organizations do bio safety programs for pheasant and the same bio safety measures implemented continuously.

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