

RESEARCH ON THE APPLICATION OF MANAGEMENT AND TECHNIQUE PACKAGES FOR COLOUR FEATHER CHICKENS DEVELOPMENT TO ENSURE BIOSECURITY IN FARM/HOUSEHOLD CONDITIONS IN SOME LARGE SCALE POULTRY RAISING AREAS IN VIETNAM.

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INTRODUCTION

Currently raising chickens in Vietnam not only faces with the old diseases, such as: cholera, gumobro, mycoplasma, but also deals with new disease namely avian influenza H5N1. After the occurrence of H5N1 in 2003, although the government had encouraged advocates towards the livestock farm development, but by 2010, the chickens raised in the scale farms accounted only 30% of the total flocks with 40% of the product shares. Meanwhile number of chickens raised in household farms accounted for 70% of the total flocks with 60% of the product shares (GSO, 2010). In the fact, the H5N1 usually starts to occur in household farms and then quickly spreads out widely.

Therefore, research on the application of management and technique packages of livestock bio-security condition for livestock farmers is needed for poultry development sector in Vietnam.

RESULTS

Survey to assess the status of chicken breeding method, bio-safety issues, environmental hygiene conditions in household farms in some key chicken raising areas.

Status of management facilities at the district and hamlet levels

Currently, lacks of the management system at the commune level, therefore the villages/hamlets could not manage the chicken farmers. The information about disease occurrence provided from administrative villages is 32.5% - 42.5% and from other sources. Checking up chickens before selling is 5% for small and 45% for medium-sized farms in the North; 0% for small scale and 20% for medium scale farms in the Central; 20% for small scale and 75% for medium scale farms in the South.

Using vaccines to prevent H5N1 has not been considered as an important factor. The protective antibody levels of blood samples were found 0% in the Northern and Central regions, and 25% in the Southern one.

The situation of chicken raising in households

Small scale (<500 chickens) and medium scale farms (500-2,000 chickens) are very high occupancy rate (78%-100%) in the household farms. Semi method is mainly grazing.

The national standards was issued the conditions for chicken raising in household to satisfy three following areas of water, food and veterinary, vaccines and antiseptic supplies, but in the fact the supply of H5N1 vaccine is currently managed by state farms, so the access of H5N1 is difficult.

Most of the household farms don't meet the biosafety condition. Hundred percent of household farms keep chickens in the residential areas. The distance between the housing and family activities under 30m occupied high proportion (85%); only 15-30% household farm keeps appropriate chicken density; and 22.5% meets the environmental isolation condition.

Other conditions such as breeding chicken sources has been controlled by the central region, with 39% - 57% in the North and 79% in the South. The rate of trained farmers was highest in the South (70%), 55% in the North and lowest in the Central (40%). Registering chicken raising households was only 5% in the Central, 25% in the North and 45% in the South. The access management of stranger people and other animals in the farm areas is low attention pay. This consideration is highest in the southern region, but the figure is just no more than 25%.

Percentage of households used disinfectant spray on barn air environment for hygiene standards of veterinary is only 31% in the North, 14% in the Central and 43% in the South. Awareness of the vaccination for Newcastle disease prevention is highly recommended that is reflected a highly protective antibody rate (90%-95%) in the blood samples in all three regions, but for the H5N1 bird flu prevention has not been rightly considered.

Research on the application of management solutions to ensure biosafety in the regional and farm levels in raising color feather chickens

Research on the application of management solutions for biosecurity in the villages

For villages/hamlets should have the animal health management guide at the easy vision and get weekly data on the overall management and disease situations of the poultry farms.

The vaccination for H5N1 prevention held in the evening time gives 40-45% higher rate than that held in the office hours.

Research on the application of management solutions in parentstocks households to ensure biosafety

The parentstock farms in household condition of less than 1,000 hens is only affected by surrounding environment of the target microorganisms no beyond than 40m from the barn edge.

To spray antiseptics every 3 days and reduce the litter use time (1.5 months) in breeding pens for air standards in accordance with the sanitary health.

Research on the application of management solutions in broiler farms to ensure biosafety

To apply antiseptic spray of 7-3 days/time and replace new litter after 2 months raising broilers in terms of households in accordance with the veterinary protection standards.

Commercial color feather poultry production of households with farm sizes <2,000 chickens is only affected by the surrounding environment of the target microorganism no beyond than 30m from the barn edge

Studies on the effects of season and farming methods to the productivity of broiler

For the imported breeds:

The average production index (PI) of the flocks was 95.3 in the Summer and 81.3 in the Spring of all three regions. It means the PI in Summer is 22% higher than that of Spring, of which 16% in the North, 22% in the Central and 32% in the South. All differences were statistically significant at $P < 0.05$. The average production index (PI) was 91.3 for captive raising method and 81.3 for semi-grazing method, it means the PI of the first is 12% higher than that of the second.

Respecting to the raising methods/seasons, the survey results gave the data which complied by the rule that the PI of captive raising method is higher than that of semi-grazing one in all three regions. the difference is statistically significant at $P < 0.05$.

Applying captive raising method for Luong Phuong chicken is a good way to obtain high production index.

For local breeds:

The average production index (PI) of the flocks was 39.58 in the Summer and 36.07 in the Spring of all three regions. It means the PI in Summer is 10% higher than that of Spring, of which 6% in the North, 10% in the Central and 14% in the South. The difference is statistically significant at $P < 0.05$. The average production index (PI) was 37.96 for captive raising method and 39.06 for semi-grazing method, it means the PI of the second is 3% higher than that of the first, the result was complied by this rule for all three regions, but the difference is not significant.

Respecting to the raising methods/seasons, the survey results gave the data which complied by the rule that the PI of semi-grazing method is higher than that of captive raising one in all three regions excepting the Spring in the North, the PI of captive raising method was 40.02 compared to 34.62 of the semi-grazing one. The difference is statistically significant at $P < 0.05$.

Research on the application of some biological products for litter treatment in chicken raising

- Mixing Mistral and Globadry with litter 1 time/week at the rate of 200g/square meter had reduced the litter moisture content 2-4% and decreased 10 times of total aerobic bacteria.
- Concentration of NH_3 in the air: The plots using treated litter reduced NH_3 concentration 0.62-1.33 times compared to that of non-treated litter plots in two raising methods and in all seasons.
- Concentration of H_2S : The H_2S was not found in all plots at the concentration rate of 0.05 mg/m^3 of the air.
- Dust: Dust density in treated plots was $1-2 \text{ mg/m}^3$ of air lower than that of control plots.
- Foul smell: Actually we have not device for determining the foul smell in the housing, but by the practical perceptions, the foul smell in treated plots was dramatically deceased in comparison with non-treated one.
- Bacterial criteria: Chemicals using for litter treatment have not effect to reduce total aerobic or other bacteria in the house in both seasons



Taking bacteria sample



Taking blood sample



Taking litter sample



Taking air sample



Backyard chicken raising in Binh Thuan province

