

Research and Development of Pheasant and Bresse Chickens on Highland Area

Abstract

The research and development of pheasant and Bresse chicken in highland area aimed to promote an alternative economic livestock for highland farmers. Four experiments (Exp) were conducted. In Exp 1, a total of 72 heads of Ring necked pheasant of F_2 breeding stock were divided into 4 breed lines, each containing 3 male and 15 female birds. In addition, a total of 144 heads of Bresse chicken of F_2 breeding stock were divided into 4 breed lines of 3 replicates, each containing 2 male and 10 female birds. Their egg production and reproductive performances were recorded. The average result from 4 breed lines of F_2 pheasant were as follows; body weight in male and female at 39 weeks was 1.25 ± 0.07 vs. 1.05 ± 0.10 kg. and at 53 weeks was 1.36 ± 0.03 vs. 1.18 ± 0.04 kg. Shank length at 53 weeks was 8.80 ± 0.01 vs. 7.92 ± 0.06 cm, while breast width was 6.87 ± 0.04 vs. 6.37 ± 0.03 cm. These values were similar to F_1 being studied in 2015. Egg production performance of F_2 pheasant were as follows. The age at the onset of laying was higher, thus led to higher weight of first egg while egg production was lower than F_1 generation, even though similar weight of first eggs were found. Reproductive performance during 10 weeks of data collection revealed that there was $97.43 \pm 2.57\%$ of hatching eggs, while the average hatchability rate was $49.75 \pm 3.80\%$ of the fertile eggs. These values were slightly lower than F_1 generation. When the F_3 pheasant chicks were sent to Royal Project Farm, it was found that their body weight and FCR at 16 weeks of age was better than F_2 but slightly lower than F_1 generation. The result of male vs. female F_2 Bresse chicken averaged from 4 breed lines at 26 weeks of age were as follows; body weight was 3.22 ± 0.03 vs. 2.16 ± 0.12 kg, breast width was 10.81 ± 0.03 vs. 8.27 ± 0.25 cm, and shank length was 13.14 ± 0.10 vs. 10.20 ± 0.10 cm. These values were higher than F_1 being studies in 2015, especially body weight which was remarkably higher. The result on reproductive performance was $97.85 \pm 0.44\%$ of hatching eggs, in which $92.15 \pm 2.46\%$ was fertile eggs. The average hatchability rate was $72.84 \pm 0.53\%$ of the fertile eggs, which was slightly lower than F_1 generation.

In Exp 2, the F_3 generation chicks were sent to 6 highland farmers who lived at 3 different elevations (700 vs. 700-1,000 and over 1,000 m above sea level). They were raised according to GAPs : Highland pheasant for 16 weeks. The results show that the performance

of the birth weight, body weight, feed intake as well as a long career And a wide chest aged 1-13 weeks with no difference in level height from the sea level. While the weight gain and FCR aged 6-13 weeks at pheasant rearing area height 700-1000 m above sea level and has a better second area (0.74 vs. 0.66, 0.55 and 2.96 vs. 2.87, 3.07, respectively).

Exp. 3 aimed to investigate the optimum dietary protein (CP) and metabolizable energy (ME) levels for Bresse chicken during growing period (1-13 weeks of age). A total of 240 heads of 1-d old mixed sex Bresse chicken were randomly allotted into 4 treatments, each with 3 replicates (20 birds/rep.) according to a 2 x 2 Factorial arrangements in CRD. Two CP levels, i.e. 21, 19 and 17% were compared with 19, 17 and 15% during 1-5, 6-10 and 11-13 weeks of bird age, while 2 ME levels (3.2 vs. 2.9 kcal ME/g) were used throughout the whole experimental period. The result showed no significant interaction ($P > 0.05$) between CP and ME levels. When each factor was taken into consideration, no significant different was found on CP level. Contradictory, the result of ME level showed that the chickens fed low ME (2.9 kcal/g) had higher body weight gain ($P < 0.05$; 1.23 vs. 1.17 kg.) but consumed significantly less feed ($P < 0.05$; 2.55 vs. 2.89 kg.), thus trend to have lower FCR (2.08 vs. 2.48) than the high ME diet. Average daily weight gain (ADG) was not significant different between treatments. When each treatment was taken into consideration, it can be suggested that the optimum diet for Bresse chicken during 1-5 weeks of birds age should contain 19% CP, 2.9 kcal ME/g, while during 6-10 weeks of age should be 17% CP, 2.9 kcal ME/g and the age of 11-13 weeks should be 15% CP, 2.9 kcal ME/g. The carcasses of Bresse chickens at the age of 13 weeks, the proportion of abdominal fat from chickens that were fed a high ME and CP levels is greater than the second group received significantly lower ME ($P < 0.05$; 2.23 and 1.92 vs. 1.62 and 1.07% LW). It also found that the proportion of the tenderloin. The chickens were fed a high-ME is less than the ME was significantly lower ($P < 0.05$; 3.92 and 3.72 vs. 3.58 and 3.52% LW). For sex Chicken Brest Males weigh before resection (1.38 vs. 1.06 kg) carcass percentage (77.45 vs. 75.16% LW) and liver ratio (1.95 vs. 1.87% LW) higher. While the proportion of female chicken tenderloin lower significantly ($P < 0.05$; 3.83 vs. 3.53% LW).

In Exp 4, the rate of satisfaction from raising pheasants of Upland Farmers 6 cases. The agriculture is satisfied that the inputs are at the highest level. The satisfaction of the characteristics of the variety that meet the breed. And in the most strength. While the number

of chickens to be satisfied in the medium. For the satisfaction of the services and advice of the staff are very pleasant. The satisfaction rate and economic return on Bresse raising by highland farmers were evaluated. The result indicated that the level of satisfaction on breed true characteristic was at the highest rate. It was coincide with the phenotype of parent stock in Exp.1 which found no deviation from typical breed characteristics. The satisfaction on farm gate price offered by Royal Project (120 B/kg.) as well as the number of chicks being provided and the revenue from raising each lot were at medium rate. The satisfaction on chick price, feed price, performance of selected breed (growth and viability), the economic return and the service of Livestock officer were at the high rate.

Keyword: Pheasant, Bresse chicken, Royal Project Foundation, Proper diet, Protein, Metabolizable energy, Production performance, Reproductive performance, Highland.

