

## **Performance evaluation of different broiler strains under environmental controlled broiler house in Sri Lanka**

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### **Introduction**

Broilers are bred and rose specifically for meat production. Hubbard breed is mainly used to produce meat in large scale farms. They are imported from Europe. CIC farm is one of the large scale farms in Sri Lanka and they are rearing two different strains; Hubbard Flex and F 15 under environmental controlled broiler house system. The aim of this study is to compare and find the best strain in assessment of body weight, growth rate, mortality and feed conversion ratio between Hubbard Flex and F 15.

### **Methodology**

The experiment was conducted in closed house at C.I.C. poultry farms (Pvt.) during 2<sup>nd</sup> May to 14<sup>th</sup> June 2014. Five hundred day old broiler chicks (Hubbard Flex and F 15) from hatchery were used in the total experiment. Each (250 Flex + 250 F 15) were considered as two treatments. Each treatment was divided into 5 subgroups as replicates as fifty birds per each. Separation was made without including automated feeder line by using plastic boxes.

Before placing, initial weight of the premium category birds were recorded and then adequate amount of feed was given separately. According to the space requirement feeders and waters were used to each separation. Unlimited feeding was done throughout the study period (42 days). All the birds were vaccinated through drinking water against Newcastle disease and Gumboro disease. Same conditions and feed were maintained for each group.

Group feed intake, Average body weight were measured daily until slaughtered at 42<sup>nd</sup> day. Average weight gain and Feed Conversion Ratio (FCR) of bird was calculated during period of growing birds. Mortality, if any, during the rearing period was recorded. Feed intake was calculated as the difference between the amount of feed supplied and the amount of feed that remained at the end of each feeding period. Feed conversion (feed: gain ratio) was calculated as the ratio between feed intake and body weight gain every day. The experimental data were processed and analyzed using Microsoft Office Excel (2007) and Minitab16 software. Performances of two groups were compared using two sample t tests. Mean comparison was used to find the best strain in performance.

### **Result and Discussion**

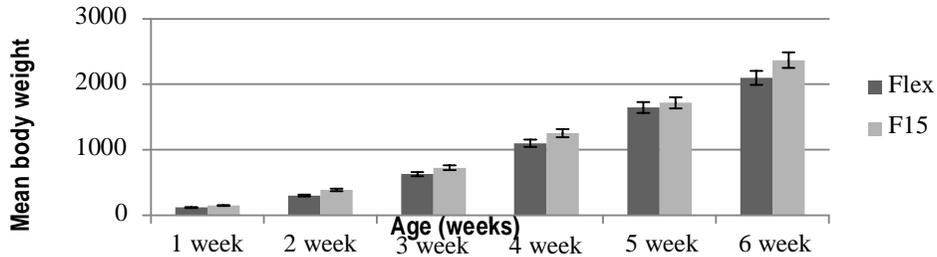


Figure 01: Body weight of Hubbard Flex and F15

When consider the body weight of the broilers there was significant ( $P < 0.05$ ) difference among the treatments in first week, second week, third week, fourth week and sixth week. However, there was no significant ( $P > 0.05$ ) difference among the treatments in fifth week (Figure 01). Average body weight of Flex and F 15 was increased throughout the rearing period. However, F 15 was shown the highest mean body weight than Flex broiler chicken throughout the rearing period.

When consider the feed intake of the broilers in weekly basis, there was no significant ( $P > 0.05$ ) difference among the treatments in third week, fourth week, fifth week and sixth week. However, there was significant ( $P < 0.05$ ) difference among the treatments in first and second week. Mean value of F 15 was shown the highest mean of feed intake with in 1<sup>st</sup> and 2<sup>nd</sup> week. Mainly the first two weeks were considered as brooding period which was helped to increase the performance throughout the rearing period.

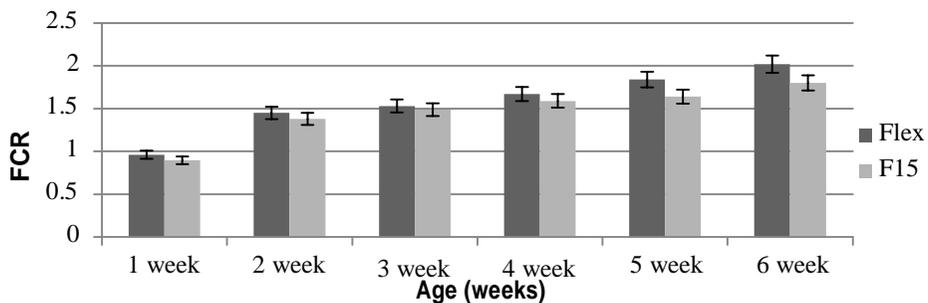


Figure 02: Feed Conversion Ratio of Hubbard Flex and F15

According to the Figure 02, feed conversion ratio was shown significant ( $P < 0.05$ ) difference between two treatments within 2<sup>nd</sup>, 5<sup>th</sup> and 6<sup>th</sup> week with that highest mean of feed conversion ratio was recorded in Flex treatment. F15 broiler chicken was shown higher feed conversion efficiency than flex broiler chicken throughout the rearing period. Feed Conversion Ratio was increased with increasing age of birds in both treatments.

According to the analyzed data weight gain was shown significant ( $P < 0.05$ ) difference between the Hubbard flex and F15 commercial broiler chicken with in first, second and sixth weeks. (Figure 03) Weight gain did not show significant ( $P > 0.05$ ) difference among the

treatments with in third ,fourth and fifth week throughout the production period, The highest mean values in weight gain was shown in F 15 in last week of the production which is the most important traits because that will give high profit to the farm.

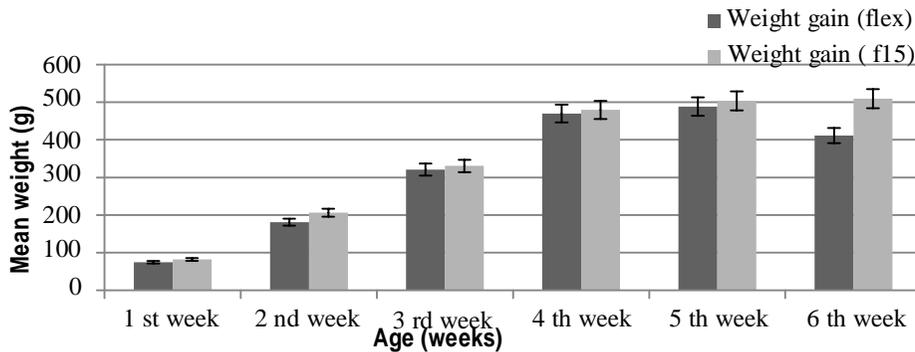


Figure 03: Weight gain of Hubbard Flex and F15

Flex group was shown the highest mortality percentage than F15 group. Mortality during the whole rearing period was higher in Hubbard Flex. The number of deaths in Hubbard F15 chickens was lower, which may indicate that these birds had better immunity. Mikulski *et al.* (2011) observed a similar tendency and have found mortality to be higher in fast-growing Hubbard F15 compared to slow-growing Hubbard JA 957 chickens (6.03 vs. 2.50%).

### Conclusions

It can be concluded that F15 commercial broiler strain was superior in body weight and weight gain during the study. The feed efficiency and FCR were related negatively. Strain F15 was adjusted good and profitable because the strain had the highest mean values in body weight and feed efficiency coupled with the lowest FCR at maturity. Strain F15 could be recommended to poultry farmers in study zone for high productivity and maximum profit.

### Acknowledgement

Management staff of CIC poultry farm (PVT) Ltd is gratefully acknowledged.

### References

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