PRELIMINARY RESULTS OF TURKEY REARING AT A COMMERCIAL FARM IN BÉKÉS COUNTY

VARGA DZSENIFER[1], BODNAR KAROLY*[1]
[1]Szent Istvan University, Szarvas, Hungary
*Corresponding author's e-mail: bodnarkaroly.dr@gmail.com

Abstract: *The aim of this study was to evaluate the rearing results of Hybrid Converter turkey on a commercial farm, and compare it with the standard. Data were collected from results of 3 turkey rearing periods: initial headcount, weekly average individual live weight per sex and stable, mortality per sex and stable, sold number of birds, total feed consumption during the turn. At the time of reception, the female herds were on average almost 13% less in live weight than the value prescribed for the hybrid. The average individual live weight at the farm was 18.68 kg for males and 7.16 kg for hens. For this, the average feed conversion was 2.482 kg/kg, which is close to the values reported for the Converter hybrid. The main causes of death were mostly various intestinal and respiratory diseases and overcrowding.*

Key words*:* turkey rearing, Hybrid Converter, growth performance, housing facilities, mortality

INTRODUCTION

Turkeys became introduced in Hungary in the Middle Ages. The ancient Hungarian turkey existed in black and white colour, and spread mainly between the Danube and the Tisza. Later, the white version slowly displaced the black one [2].

Domestic turkey meat production reached 140,000 tons in 2004, when we accessed to the EU, and accounted for more than 30% of the 450,000 tons of poultry meat production. Hungary, after Poland, entered the EU as the second largest turkey meat producer. The sector first time was hit by the avian influenza panic and epidemic in 2006 and 2007 [3, 8].

The difficulty of the turkey production during that long period of rearing is financing as a major burden on the sector actors [1]. The most difficult phase of turkey rearing is pre-rearing period, because the chicks are sensitive for both the environment and feeding [7, 10]. Growth vigor varies with age, peaking in the first month of life and then gradually decreasing. When, for some reason, the balance between the body and the environment becomes unstable, the growth rate falls back to a lower level [5]. The growth vigor of males is better. There is a decrease in growth rate 3 weeks later than in hens, which is why sex-separated rearing is required. The pre-rearing period lasts 6 weeks. Then the fattening period is different for hens and bucks. The hen is fattened for an additional 8 weeks, while the buck is fattened for 14 weeks [11, 13].

The aim of this study was to evaluate the rearing results of turkey on a commercial farm, and compare it with the standard of the hybrid [9].

MATERIALS AND METHODS

The farm was established in 1976. After the reconstruction of the livestock buildings, it is currently raising and fattening a flock of about 20,000 turkeys on 5,300 m^2 in 8 stables. The farm is engaged in fattening of 6-week-old Hybrid Converter birds. The turkeys for fattening are fed according to the technology of Gallicoop Zrt. Growing I-II and finishing type I-II granular feeds are used in the fattening phase. The birds are fed by a closed and automatic system device.

Data were collected from results of 3 recently closed (2019-2020) turkey rearing shifts: initial headcount, weekly average individual live weight per sex and stable,

mortality per sex and stable, final number of birds, total feed consumption by feed type and total during the turn.

The periods of the 3 fattening turns are:

- I. : 2019.01.14. - 2019.05.06.
- II. : 2019.05.30. - 2019.09.12.
- III. : 2019.10.15. - 2020.01.31.

The data were processed using MS Excel. I compared the body weight gain of the turkeys by sex, pen, turn, and hybrid standard [9].

RESEARCH RESULTS

Weekly measurement results by gender, building, and turn were recorded. The average weight per shift and the total average weight on farm level were also calculated. Comparing our results with the standard value, it can be stated that the results of the farm weight gain fell short of the standard values during the whole fattening period. At the time of receiving the six-week pre-reared herd, the weight of the animals did not reach the standard value in any of the shifts (Table 1.).

Table 1.

Comparison of the average weight of received and sold stocks with the standard (kg / individual)

Age	Standard female	Farm average female	Difference female (%)	Standard male	Farm average male	Difference male (%)
Received (6. week)	2.47	2.15	-12.96	2.94	2.46	-16.33
Sold (14. week)	9.97	8.74	-12.34			
Sold (15. week)	10.72	9.31	-13.15			
Sold (19. week)				20.51	18.68	-8.92
Sold (20. week)				21.70	19.33	-10.92
Sold (21. week)				22.80	20.61	-9.61
Sold (22. week)				23.94	21.14	-11.69

Source: authors

At the time of reception, the female herds were on average almost 13% less in live weight than the value prescribed for the hybrid (Fig. 1), and we also experienced this lag in development / growth at the time of the sales. Deviations from the rearing time undertaken and the expected age at the time of sale can be attributed to the adaptation to the needs of the slaughterhouse.

In the case of males, the live weight of the pre-bred herds (Fig. 2) at the time of reception was even less (16.33%) lower than the prescribed or desired weight. On this backlog, thanks to adhered housing and feeding technology by the end of rearing it had been mainly reduced. The good developmental strength of the young animals was exploited on the farm. In the case of females, presumably due to the shorter fattening time and/or the relative earlier decline of the growth rate [6], it was not possible to correct any errors of pre-rearing period. (Anyway, standard values can only be achieved or approached with strict and consistent adherence to the technology prescribed for the hybrid.)

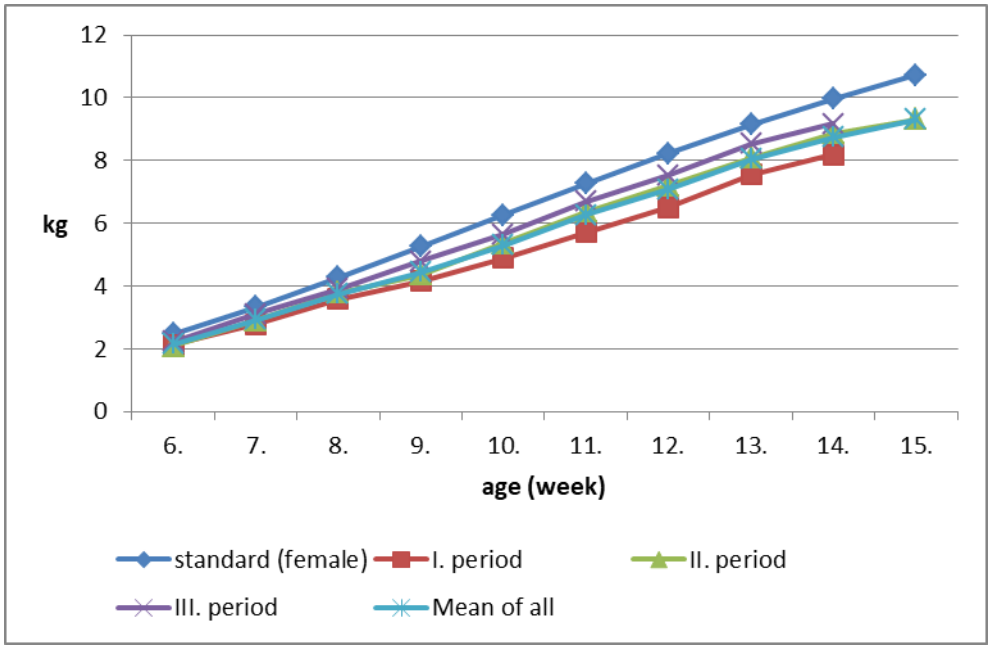

Figure 1. Weekly weight gain of female birds
Source: authors

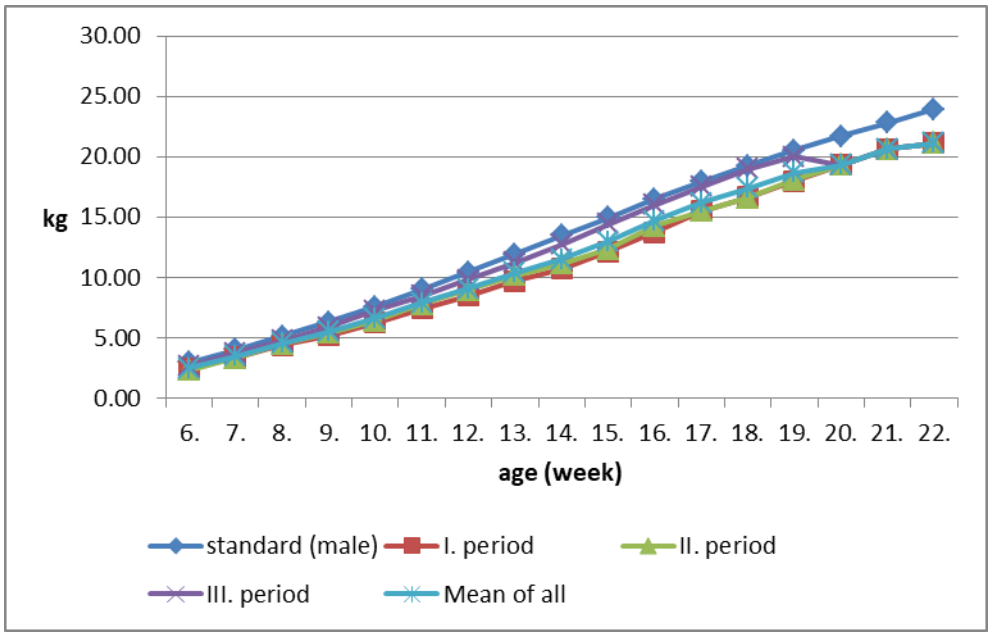

Figure 2: Weekly weight gain of male birds
Source: authors

We examined whether the development of the undesirable live weight could be attributed to some technological deficiency. Therefore, the development of body weight of the two sexes during rearing was plotted as a cage (Fig. 3-4), and the values measured at the stock were compared with the standard values. We found that the averages per stables in both sexes remained below the standard values, but the weight gain among buildings did not differ.

Multi-phase feeding is used during fattening. The average individual live weight at the farm was 18.68 kg for males and 7.16 kg for hens. For this, the average (feed

consumption could not be measured by sex) feed conversion was 2.482 kg/kg, which is close to the values reported by other authors [12, 14] for the Converter hybrid.

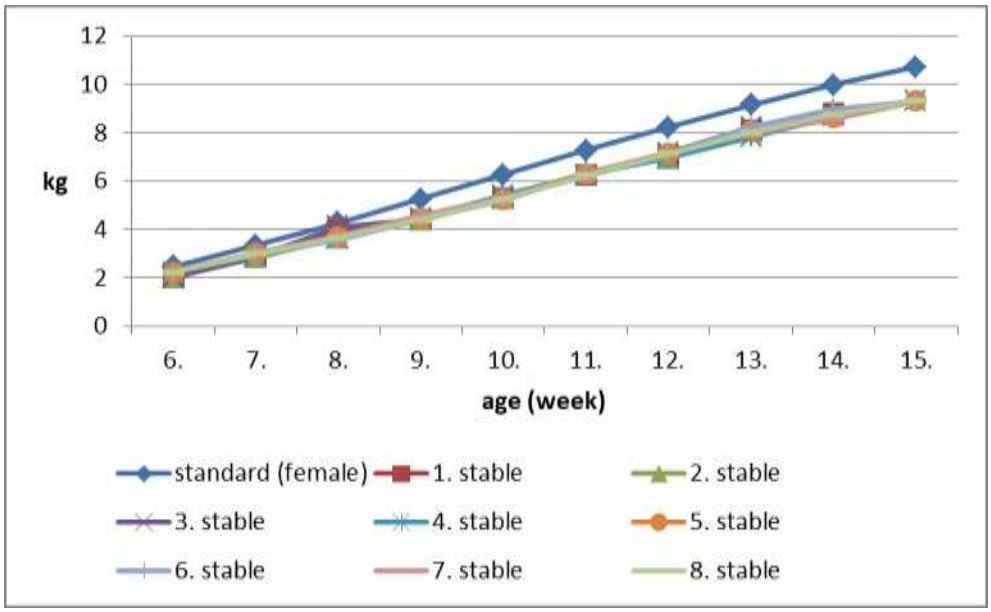

Figure 3. Weight gain of female birds in different stables
Source: authors

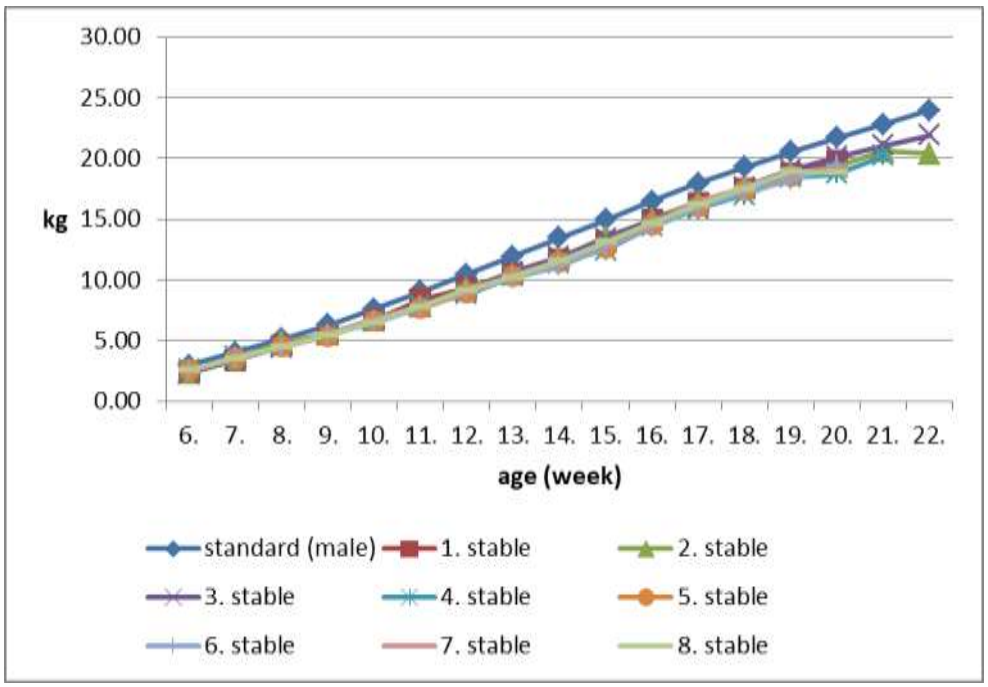

Figure 4. Weight gain of male birds in different stables
Source: authors

Mortality data were collected at the site per shift per week and per sex (Figure 5). Mortality rate during fattening varied widely. In the male birds, the higher mortality rate was presumably due to longer rearing periods and possible aggression. The main causes of death were mostly various diseases (intestinal and respiratory diseases), footpad dermatitis is common foot problem in turkeys, and congestion before transport [4, 15]. Outstanding values in the periods described were due to intestinal problems at week 13 in turn I and congestion due to overkeeping at week 16th. High mortality due to foot problems was

characteristic throughout turn I, and aggression was also observed among the animals. In turn II at week 9th, mortality was also higher due to intestinal inflammation, and at week 15th, due to overcrowding, there was a higher mortality in the time before delivery. In turn III at week 11th due to respiratory disease, by week 15th congestion was again the main problem, and by week 18th aggressions had occurred and leg problems had increased.

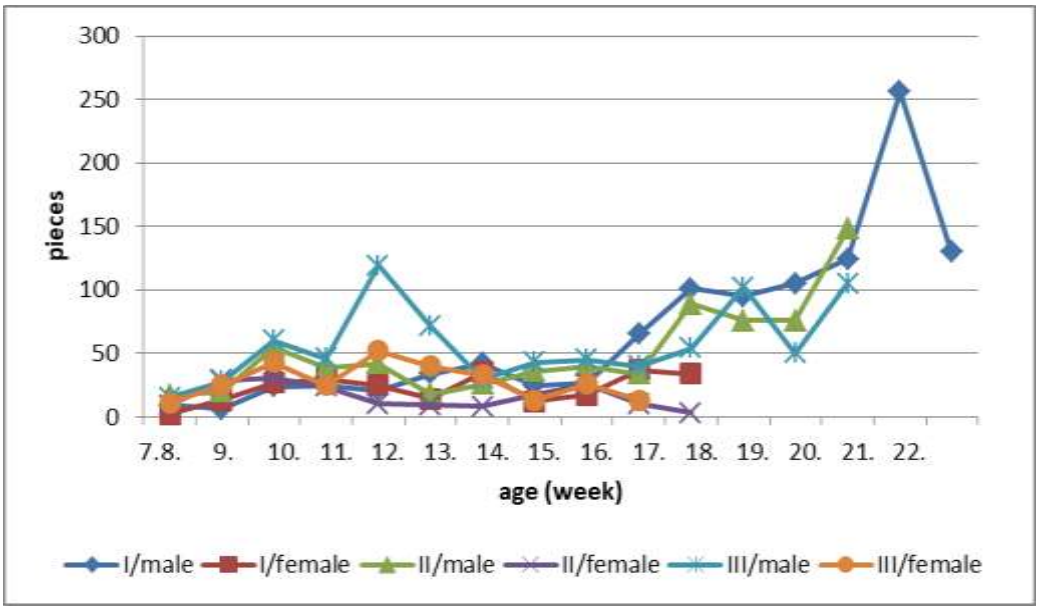

Figure 5. Mortality data during the 3 rearing periods
Source: authors

CONCLUSIONS

Based on the observations at the farm and evaluating the results, the following findings can be made:

- The technological regulations are strictly observed in the examined turkey farm.
- In no case did the three pre-reared mixed-sex turkey flocks presented in the research reach the standard body weight values prescribed for the Converter hybrid at 6 weeks of age. The lack of live weight during pre-rearing may have caused the animals to perform below the standard value throughout the fattening period, although the males approached it more than the hens. Early rearing mistakes could not be fully compensated.
- The ingredients and composition of the fed concentrates complied with the technological specification. During fattening, very similar weight gain was observed in the 8 buildings housing the animals. It is likely that there were no differences in technical conditions, microclimate, feeding and care between the individual buildings during the study period. The lack of body weight of male pre-bred animals was slightly reduced from the prescribed value, taking advantage of the still significant growth performance of the animals.
- The feed conversion capacity of the animals corresponded to the value published by other authors about the hybrid.
- The mortality rate generally remained within acceptable levels during fattening. The most common causes of rejections were intestinal and respiratory diseases, and foot problems. Overcrowding and aggression resulting from occasional overkeeping also caused outstanding values in the final phase of fattening.

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