

IMPROVEMENT ON THE MALAYSIAN VILLAGE CHICKEN BASED ON SELECTIVE BREEDING PROGRAM

A. Kasim¹ and M. Afdal^{1,2}

¹ Faculty of Agriculture, Universiti Putra Malaysia, 43300 UPM Serdang Malaysia

² Faculty of Animal Husbandry, Jambi University, Kampus Mandalo Darat Jambi 36361 Indonesia

Introduction

The free ranging village chickens, although sought as a delicacy, are known for their inferior growth performance when compared with other imported coloured and free ranging strains and their crosses (Azahan and Houte, 1992; Azahan, 1993; Noraziah and Azahan, 1995; Rahman *et al.*, 2000). Petersen *et al* (1991) reported that the village chicken produced an average of 100 eggs per year which is higher than the egg production of the Ethiopian (Tadelle *et al*, 2003) and Indonesian (Rasyaf, 1998) village chicken at 75 and 66 eggs per year respectively.

The Malaysia village chickens (MVC) are descendents of the imported modern chicken strains which are known for their superior bodyweight and egg laying potential. Environmental constraints and sporadic mating involving the wild red jungle fowl eventually lead to the existence of the smaller size village chicken (Kasim, 2007). The red jungle fowl could have played significant role in improving the meat quality of the village chicken. With this very good ancestral background, a breed improvement program was conducted over a collection of adult chickens containing a wide spectrum of village chicken population with the objective to select for sought marketing characteristics. The objective of this breeding program was to produce two distinct lines, the male line with good growth characteristics and the female line with good egg production characteristics. Over a period of nine generations, four male and female lines were established. A study was later conducted on these lines to test their growth performance.

Materials and Method

A ninth generation village chicken consisting of 408 chicks were used in the study. Chicks were randomly grouped into their respective four male and four female lines with three replications for each group. Chicks were reared in stainless steel battery cages for five weeks. They were then sexed and transferred to litter floor pens, thus adjusting the experimental design from a Complete Randomized Design for the battery cages stage to a Factorial Design (two strains x two sexes) for the litter floor pen rearing. A starter diet formulated to contain 230 g/kg crude protein was used for the first phase of rearing and a commercial poultry grower diet was used for the second phase of rearing. Feeds and water were given *ad-libitum*. Birds were vaccinated using approved Newcastle-Infectious Bronchitis and Fowl Pox viral preparations. Bodyweight was measured on a weekly basis. Feed consumption records were not analysed since the design of the feed troughs permits these highly active birds to scratch and spill the feeds.

Results and Discussion

The results of these studies showed that there was no significant ($P>0.05$) difference between the weights of male and female lines of five and ten-week male birds but there was a significant ($P<0.05$) difference between weights of male and female lines of five and ten-week female birds (Table 1).

Table 1. The body weight of Malaysia village chickens based on sex lines, within male and female lines at the ages of 5 and 10 weeks^a (g)

	Week5		Week 10	
	Male	Female	Male	Female
Male line				
T2 (ML1)	525.43	437.70	1346.51	1095.47
T4 (ML2)	496.72	455.80	1410.13	1107.79
T5 (ML3)	537.80	461.22	1446.54	1145.21
T7 (ML4)	515.03	464.33	1402.76	1085.13
	Ns	ns	ns	ns

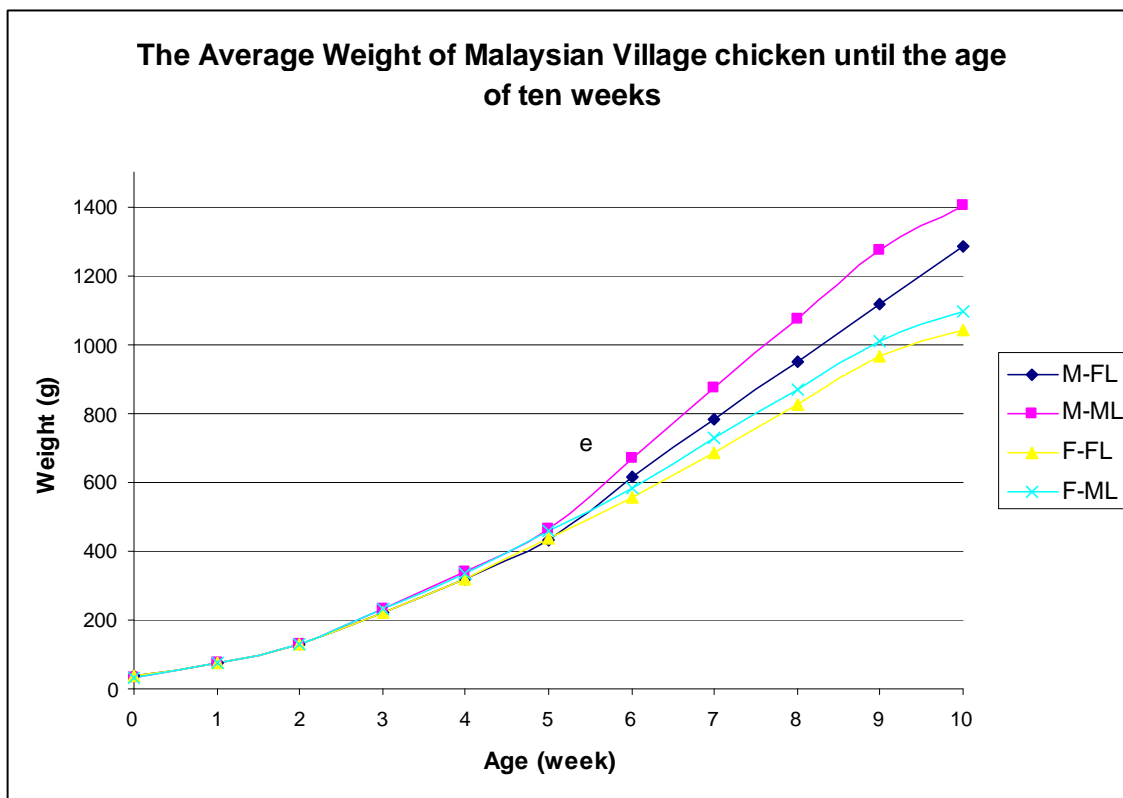
Female line				
T1 (FL1)	526.49	438.40	1383.31 ^a	1060.50
T3 (FL2)	490.06	438.44	1285.11 ^b	1074.59
T6 (FL3)	513.68	431.01	1263.00 ^{bc}	1037.78
T8 (FL4)	426.94	420.52	1212.00 ^c	1057.44
	Ns	ns	*	ns
Male lines	518.75	454.76	1,401.49	1,057.58
Female lines	489.29	432.09	1,285.86	1,285.86
	Ns	*	ns	*

T1... T8 ; strain. ML : Male line FL : Female line

* : significant (P<0.05) ns : not significant (P>0.05)

Different superscript within the same column shows significant different (P<0,05)

The results of this study show the heavier weight of male than female birds (Figure 1). It is normal for the weight of male kampong chicken to be higher than female and it is as described by NRC (1998) that males are always heavier than females.



M-ML : Male (male line) M-FL : Male (female line) F-FL: Female (female line) F-ML: Female (male line)

Figure 1. The average of body weight of Malaysian kampong chicken based on the sex line.

There were no significant differences (P>0.05) between sex lines, among strain within the male and female line of the daily weight gain of MVC (Table. 2). Males grew at a faster rate than females and sex appearance occurred after the age of five weeks as the bird had entered the growing phase. The similar reason might be applied as for the weight of bird while male grew faster than female.

Table 2. The daily weight gain of MVC based on sex lines, within male and female lines at the ages of 5 and 10 weeks ($g\ d^{-1}$)

	Week5		Week 10	
	Male	Female	Male	Female
Male line				
T2 (ML1)	18.15	19.11	19.82	17.45
T4 (ML2)	29.31	18.47	24.38	11.27
T5 (ML3)	17.63	19.05	21.97	10.59
T7 (ML4)	19.74	16.87	20.08	14.23
	ns	ns	Ns	ns
Female line				
T1 (FL1)	21.22	18.57	28.33	19.99
T3 (FL2)	19.81	19.07	18.27	16.02
T6 (FL3)	15.30	14.46	19.87	14.92
T8 (FL4)	18.00	18.09	28.78	10.51
	ns	ns	Ns	ns
Male lines	21.21	18.38	21.56	13.39
Female lines	18.58	17.55	23.81	15.36
	ns	ns	Ns	ns

T1... T8 ; strain. ML : Male line FL : Female line ns : not significant
 ns : non significant

Conclusion

There were no differences in the weight of male MVC between male and female lines but there were differences in the weight of female MVC. There was no effect of strain among the sex line except for 10-week female MVC. There were no differences in the daily weight gain of MVC between sex line, among the strain within male and female lines.

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