INFLUENCE OF MANAGEMENT SYSTEM ON STRESS IN PIGS BY ASSESSING FAECAL CORTISOL*

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The objective of this research is assessing the effect of housing and feeding system on the faecal cortisol level in two different genetic groups under hot-humid climate. Twenty-four crossbred weaned piglets each belonging to two genetic groups i.e. CB_1 (Duroc 50% and Large White Yorkshire 50 %) and CB_2 (Large White Yorkshire 50% and Desi 50%) were randomly selected from Centre for Pig Production and Research, Kerala Agricultural University, Mannuthy as uniformly as possible with respect to age, sex and bodyweight were utilised for the study. The piglets in each crossbred group were randomly divided into four groups of six animals each and allotted to one of the following treatments.

T_1- group housing with wallowing facility, fed with conventional feed (control)

T_2- group housing with wallowing facility, fed with unconventional feed (left over food from hostels and other organic food waste)

T_3- individual housing without wallowing facility, fed with conventional feed

T_4- individual housing without wallowing facility, fed with unconventional feed

Faecal samples were collected once in a month from all the animals in different treatment groups immediately after voidance. They were kept in polythene pouches and stored at -20^{0}C till extracted for RIA (Khan *et al*., 2002).To assess the stress in pigs reared in two different housing and feeding systems faecal cortisol level was estimated using radioimmunoassay (RIA). Results were tested by ANOVA using the model.

The monthly faecal cortisol levels (μg/dl) of animals in all treatments of both the genetic groups had no significant differences (P>0.05) in the faecal cortisol level between the treatments in both the breeds. The mean faecal cortisol concentration at first, second, third, fourth and fifth months were 0.125, 0.114, 0.083, 0.05 and 0.033 μg/dl in CB_1 and 0.113, 0.103, 0.067, 0.055 and 0.032 μg/dl in CB_2 pigs indicating that there was no apparent stress on animals with respect to housing system or feeding regime provided to the animals. This is in conformity with the findings of Bustamate *et al.* (1996).

REFERENCES

Bustamate, M., Jesse, G.W., Becker, B.A. and Krause, G.F.(1996). Effects of individual versus group penning on the performance of weanling pigs. *Journal of Animal Science*. 74: 1457-1461

Khan, M.Z., Altmann, J., Isani, S.S. and Yu, J. (2002). A matter of time: evaluating the storage of fecal samples for steroid analysis. *General Comparative Endocrinology* 128: 57-64

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Table 1. Mean and S.E. of faecal cortisol level, μg/dl of CB_1 and CB_2 pigs

BREED	Treatments	Month					
		1	2	3	4	5	
CB_1	T1	0.133 ± 0.01	0.116 ± 0.01	0.083 ± 0.01	0.05 ± 0.01	0.033 ± 0.01	NS
	T2	0.116 ± 0.01	0.115 ± 0.01	0.083 ± 0.01	0.05 ± 0.01	0.033 ± 0.01	NS
	T3	0.133 ± 0.01	0.110 ± 0.01	0.083 ± 0.01	0.05 ± 0.01	0.033 ± 0.01	NS
	T4	0.116 ± 0.01	0.115 ± 0.01	0.083 ± 0.01	0.05 ± 0.01	0.031 ± 0.01	NS
CB_2	T1	0.116 ± 0.01	0.103 ± 0.01	0.066 ± 0.01	0.05 ± 0.01	0.033 ± 0.01	NS
	T2	0.110 ± 0.01	0.103 ± 0.01	0.070 ± 0.01	0.06 ± 0.01	0.033 ± 0.01	NS
	T3	0.116 ± 0.01	0.103 ± 0.01	0.070 ± 0.01	0.05 ± 0.01	0.031 ± 0.01	NS
	T4	0.110 ± 0.01	0.103 ± 0.01	0.060 ± 0.01	0.05 ± 0.01	0.031 ± 0.01	NS

NS- Non- significant