

Correlation Estimates between Carcass Traits of Nili Ravi and Kundhi Buffalo

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Abstract: Present study was designed to estimate the correlation between carcass traits of Nili Ravi and Kundhi buffalo. The data for carcass traits of Nili Ravi and Kundhi buffalo was collected from Seven Star International Meat Processing Company Dhabeji at Thatta. In current study the data of total 100 animals of Kundhi and Nili Ravi breed were selected and divided into A, B, C and D group. In group A and C there were Kundhi and Nili Ravi male whereas, B and D females of both breeds respectively. The data including live body weight, carcass weight, dressing percentage and boneless weight of both breeds Kundhi and Nili Ravi were collected for the estimation of correlation. The results for correlation estimates of different carcass traits indicated that the correlation estimation were found positive and high among Nili Ravi breed as compared to Kundhi breed, which shows that an increase in one carcass trait would increase the other carcass traits. It was concluded that Nili Ravi carcass traits are better expressed and produces more beef than Kundhi, while Kundhi male is better in beef production than the Nili Ravi female whereas Kundhi female produces low carcass yield.

Keywords: Correlation, Carcass traits, Nili Ravi, Kundhi Buffalo.

INTRODUCTION

The United Nation (FAO) Food and Agriculture Organization has been published a report that Pakistan is 2nd largest buffalo meat and milk producing country in the year 2007. The population of world buffalo reached to 130 million [1]. Pakistan has 33.7 million buffalo heads with approximately 18.01 percent of total world population, it includes Kundhi and Nili Ravi breeds. Both breeds are well known due to higher meat and milk production. Both buffalo breeds of Pakistan are sharing major part in the economy of Pakistan with the production of meat, milk, and also for draft power in many agricultural processes [3]. The home tract of Kundhi buffaloes is Sindh whereas Nili-Ravi buffalo in Punjab but both breeds are also found in Sindh and Punjab (Shah *et al.*, 2013). Kundhi breed male mature in 30 months and female 36 months. The average weight of male and female at maturity is 500-600 and 300-400kg, while Nili Ravi age of maturity rate is 30-36 months and average weight is male 650 and female 450k [4]. Correlation is key genetic parameter for the selection of beef animals breeding plan and policies. The estimation of correlation is highly important to select single and multiple traits selection strategy, [5]. The correlation estimates provides knowledge regarding the particular trait of animal, helps to improve that traits with effective selection methods. If correlation estimation of a trait is positively high the selection for other traits will helpful, [6].

MATERIAL AND METHODS

Present study was performed for the estimation of correlation between carcass traits of Kundhi and Nili Ravi buffalo in the year 2014. The data of total 100 animals carcass traits including live body weight, carcass weight, dressing percentage and boneless weight of both breeds Kundhi and Nili Ravi were collected from Seven Star International Meat Processing Company, Dhabeji Thatta and Faculty of Animal Husbandry & Veterinary Sciences, Department of Animal Breeding and Genetics, Sindh Agriculture University Tando jam. The total 100 animals were grouped into A, B, C and D, having 25 animals in every group. In group A and C, all animals were males of Kundhi and Nili Ravi breed whereas, in group B and D were females of both breeds respectively.

The correlation estimation between carcass traits of both breeds was estimated with the help of formula as recommended by [7].

$$r_{xy} = \frac{1 \sum xy - \frac{(\sum x)(\sum y)}{n}}{\sqrt{\sum x^2 - \frac{(\sum x)^2}{n} \sum y^2 - \frac{(\sum y)^2}{n}}}$$

n= indicates all numbers of observations

Σ = Greek symbol denoting "Sum of"

r_{xy} =Association or (correlation)among independent and dependent traits or variable

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RESULTS

Correlations Estimates among Carcass Traits of Kundhi Male

The results of correlation estimation between carcass traits including live body weight, carcass weight, dressing percentage and boneless weight were observed highly positive between carcass traits of Kundhi buffalo male details are presented in Table 1.

Correlations Estimates between Carcass Traits of Kundhi Female

The results of correlation estimation between carcass traits including live body weight, carcass weight, dressing percentage and boneless weight were observed highly positive between carcass traits of Kundhi buffalo female details given in Table 2.

Correlations Estimates between Carcass Traits of Nili Ravi Male

The results of correlation estimation between carcass traits including live body weight, carcass weight, dressing percentage and boneless weight were

observed highly positive between carcass traits of Nili Ravi buffalo male details given in Table 3.

Correlations Estimates between Carcass Traits of Nili Ravi Female

The results of correlation estimation between carcass traits including live body weight, carcass weight, dressing percentage and boneless weight were observed highly positive between carcass traits of Nili Ravi buffalo female details given in Table 4.

DISCUSSION

Correlation among Different Carcass Traits of Kundhi and Nili Ravi Male and Female

The results shows the results of correlation estimation were found positively high between carcass traits including live body weight, carcass weight, dressing percentage and boneless weight of Kundhi and Nili Ravi buffalo male and female. The results of current study are supported by the results of [8], who, reported carcass weight with hotness was observe significantly and positively correlated with weight of

Table 1: Correlations among Different Carcass Traits of Kundhi Male

Parameter	Live body weight	Carcass weight	Dressing percentage	Boneless weight
Live body weight (kg)	—			
Carcass weight (kg)	0.9991	—		
Dressing %	0.9977	0.9983	—	
Boneless weight (kg)	0.9897	0.9876	0.9915	—

Table 2 Correlations among Different Carcass Traits of Kundhi Female

Parameter	Live body weight	Carcass weight	Dressing percentage	Boneless weight
Live body weight (kg)	—			
Carcass weight (kg)	0.9978	—		
Dressing (%)	0.9944	0.9975	—	
Boneless weight (kg)	0.9938	0.9911	0.9924	—

Table 3: Correlations among Different Carcass Traits Nili Ravi Male

Parameter	Live body weight	Carcass weight	Dressing percentage	Boneless weight
Live body weight (kg)	—			
Carcass weight (kg)	0.9991	—		
Dressing (%)	0.9969	0.9975	—	
Boneless weight (kg)	0.9907	0.9890	0.9932	—

Table 4: Correlations among Different Carcass Traits Nili Ravi Female

Parameter	Live body weight	Carcass weight	Dressing percentage	Boneless weight
Live body weight (kg)	—			
Carcass weight (kg)	0.9970	—		
Dressing (%)	0.9970	0.9985	—	
Boneless weight (kg)	0.9947	0.9880	0.9914	—

dressing percentage. The results of current study are higher than the results of [9], who reported medium values of correlation between carcass traits of African buffalo. The statement repeated by [10, 11], they have also reported medium correlation results of buffalo breeds. The mention difference between the current and present study may because of breed, gender, nutritional factors, climatic conditions and management practices of farms. The results of current research are also in agreement with results of [12, 13], who also reported higher and positive correlation between carcass traits of different buffalo sheep breeds. Results of [14, 15] are in controversial than the results present research they had reported lower correlation estimation values between carcass traits and carcass yield of suckling calves and Australia beef cattle's. Same statement repeated by [16, 17], who have also reported low and positive correlation between carcass traits of beef cattle and buffalo calves. The results of present study are controversial than the findings of [3, 6], who reported lower and positive correlation values among carcass traits of Beef breeds. The above mention difference among the studies may be due to effect of environmental conditions on carcass after slaughtering or feeding management can be involved in this phenomenon.

CONCLUSION

Due to positive values of correlation between carcass traits of Kundhi and Nili Ravi buffalo male and female, it was concluded that carcass traits of Nili Ravi are better expressed and produces more beef in comparison to Kundhi. Kundhi male is better in beef production than the Nili Ravi female and Kundhi female produces low carcass yield.

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