Use of the entry time and exit velocity as tools for the assessment of water buffalo temperament

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ABSTRACT ID # 884261

Introduction

Animal temperament is one of the points that can influence animal performance. There are few studies regarding temperament of water buffaloes and tools which can assist in the detection of the temperament and the classification of animals are indispensable.

Objective

Use the entry time, chute score, and exit velocity as tools for the assessment the temperament of water buffaloes (WB) in growing phase in feedlot.

Material and Methods

- ✓ 3 genetic groups of water buffaloes (n=25 for each GG);
- ✓ Jafarabadi, Mediterranean, and Murrah, respectively;
- ✓ 390±32 days of age;
- ✓ 310±61.27 kg of initial body weight.
- ✓ On day 0:
  - temperament variables collection:

1- entry time into squeeze chute (by chronometer);
2- chute score (5-point scale:1=calm animals; 5=very reactive animals);
3- exit velocity (time recorded by infrared sensors and transformed in velocity).

  - blood samples - serum levels of cortisol (radioimmunoassay technique);
  - rectal temperature.
- ✓ individual temperament score (TSc) was calculated averaging entry time score (5-point scale:1=greater time spent, and 5=less time spent), chute score, and exit velocity score (5-point scale:1=lower speed; 5=higher speed).
- ✓ Statistical analyses
  - Stepwise discriminant analysis (SDA) - STEPDISC procedure in SAS. P-value < 0.01 - consider and include the variable in the model.
  - Selected variables - multivariate analysis of variance - GLM procedure in SAS.
  - Effect of the GG were tested
  - Correlation analysis - CORR procedure in SAS.

Results

Table 1. Results of the selection of the temperament variables by stepwise discriminant analysis and multivariate analysis of variance

Stepwise Discriminant Analysis (SDA)

Step	Variable	Partial R^2	F	Pr > F	Wilks' Lambda	Pr < Lambda	ASCC	Pr > ASCC
1	ETS	0.28	25.51	<.0001	0.72	<.0001	0.28	<.0001
2	EVS	0.24	20.19	<.0001	0.55	<.0001	0.45	<.0001

Multivariate analysis of variance – Wilks' Lambda test

Effect	Wilks' Lambda Value	F	Pr > F
Temperament	0.67	16.91	<.0001
GG	0.99	0.41	0.67
Temperament×GG	0.95	1.78	0.18

Correlation coefficients

Variables		Cortisol	Rectal Temperature
TSc	r	0.37	0.36
	P	0.02	<0.01

ETS = entry time score; EVS = exit velocity score; ASCC = average square canonical correlation; GG = genetic group; TSc = temperament score.

Highlights

- ✓ SDA used three steps;
- ✓ SDA selected only the variables entry time and exit velocity scores;
- ✓ There were no effects of GG or interaction Temperament×GG;
- ✓ Positive correlations were verified between:
  - TSc and cortisol;
  - TSc and rectal temperature.

Conclusions

The entry time and exit velocity may be tools for the assessment of water buffalo temperament and their use should be tested in animals of different categories.

Feedlot facilities of the Center for Tropical Research in Water Buffalo (CPTB), Botucatu, São Paulo, Brazil.

Acknowledgement

Appreciation is expressed to São Paulo Research Foundation – FAPESP (**process #2018/25939-1; #2014/05473-7**) for financial support