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THE USE OF QUALITATIVE BEHAVIOUR ASSESSMENT (QBA) AS AN INDICATOR OF BOVINE TEMPERAMET: PRELIMINAR RESULTS

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INTRODUCTION

The beef cattle temperament affect the welfare of animals and workers, animals with poor temperament are more susceptible to stress during handling and increasing in risks of accidents during the routine handlings (weight, vaccination, reproductive procedures) (Paranhos da Costa, 2000). There is a lot of discussion about a measure that could express the animal temperament. Some objective tests explain aspects of temperament, not this characteristic as a hole. The QBA is a behavioural measure that describes the animal expression as a pre-defined terminology. This is already in use as a welfare indicator (Wemelsfelder and Lawrence, 2008), and results demonstrated that QBA can be correlated to quantitative behavioural data (Napolitano et al., 2008). The expectation with the QBA is explain what aspect of temperament any objective measures are able to describe (fear, reactivity, aggression). So, the aim of this study was to use QBA as a bovine temperament indicator and relate this with traditionally used objective indicators.

METODOLOGY

Seventy one beef cattle heifers from a farm located in São Paulo State, Brazil, were evaluated during a handling of weigh. The group was composed of Zebu (Nelore) and crossbreed animals (Nelore, Brahman, Hereford and Angus breeds). The temperament measures used was: i) **flight time** (FT) assess the time that an animal take to exit from the crush and run a distance of 2m – fast individuals are considered as worse temperament; ii) **movement score on crush** (MOV), that measure the frequency and intensity that an animal move when it is inside the crush, and express it in a five points scale (1- no movement to 5 – frequent and vigorous movements); iii) **qualitative behavioural assessment** (QBA), the observer uses a pre-defined terminology (active, relaxed, fearful, agitated, calm, attentions, positively occupied, curious, irritable, apathetic, happy and distressed) and check the impression about the animal feelings in a scale (similar to a rule). The correlation between measures (MOV, FT and QBA) was done in a bivariate way using the Person Correlation and in a multivariate way using the Principal Compounds Analysis (FT and QBA).

RESULTS AND DISCUSSION

Averages of the group for MOV, FT and for each term of QBA are in table 1. In QBA the minimum response possible was 0 and the maximum was 120.

	MOV	FT	Active	Relaxed	Fearful	Agitated	Calm	Attention	Occupied	Curious	Irritable	Apathetic	Happy	Distress
	71	61	40	40	40	40	40	40	40	40	40	40	40	40
Average	1.27	1.59	45.98	60.61	21.04	30.25	59.14	54.75	4.14	22.25	11.25	2.55	25.93	12.85
SD	0.66	1.00	40.87	37.30	31.96	41.63	38.29	36.61	13.32	32.55	21.85	4.71	20.77	17.17

Table 1 – Descriptive Statistic for temperament measures.

The movement (MOV) were significant correlated to the terms active (r=0.32; p=0.04), fearful (r=0.41; p=0.00), agitated (r=0.38; p=0.01), attentions (r=0.33; p=0.03) and irritated (r=0.38; p=0.01). The flight time (FT) correlated to active (r=-0.39; p=0.02) and agitated (r=-0.48; p=0.00). The movement in the crush are more related to fear and irritation response, by other hand the exit velocity explain the tendency of an animal be agitated, but no more fearful. In the multivariate approach the first component explained 69.6% of the data variation and the second, 14.6% (Figure 1 - A).

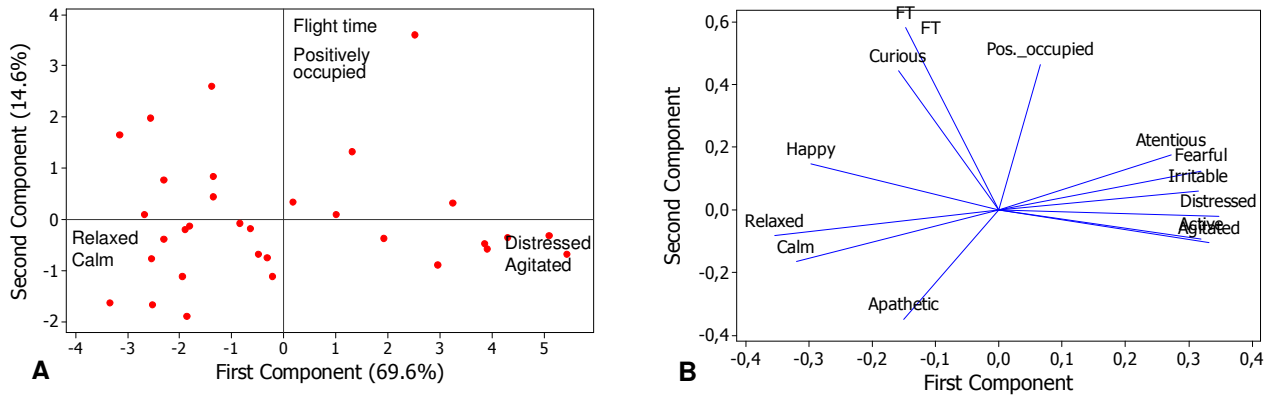

Figure 1 – Results of PCA analysis, showing the variation in the first and second principle components. **A** – Plot of cases and **B** – Plot of variables.

According to this evaluation the terms with negative meanings (fearful, irritable, distressed and agitated) grouped in the positive side of the first component, and were close to the neutral meaning terms attentions and active (Figure 1 - B). This result suggest that these expressions, despite of the neutral meaning for temperament, they are related to negative situations. The animals that had bigger FT are grouped closest for that with higher curiosity for the first and second compounds. This result can be explained because some individuals that are more curious stopped close to the FT equipment for look that, generating a bigger FT and passed an impression of curiosity for the observer. For the first component the FT are closest to apathetic, showing an obvious relation. In general, biggest FT is more related to terms with positive meaning (curious, happy, relaxed and calm). The relation between welfare and temperament could be cleared with the use of QBA and comparing with objective measures: animals with poor temperament (more MOV and low FT) were characterized as more fearful, agitated, active, and less calm, relaxed and happy.

CONCLUSION

We conclude that the QBA can be a useful indicator of bovine temperament. It can infer the behavioural aspects approached by objective measures. The implication of good temperament in welfare could be cleared using the subjective assessment.

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