

Correlation of flight zone with temperament and performance of beef cattle

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Assessment of temperament in cattle may improve handling techniques and could possibly be used to correlate behaviour with animal performance. According to Cafe *et al.* (2011), cattle temperament can be defined as the reaction of an animal during stressful events, such as human handling. Depending of the temperament, the effect on productivity and meat quality may vary. For instance, lively cattle are prone, during stressful conditions, to reduce dry matter intake (DMI) and liveweight (LW) gain, mainly because of higher cortisol levels that could interfere with amino acid mobilization and protein catabolism (Fordyce *et al.* 1985; Braga *et al.* 2018). There are a number of methods to measure temperament in cattle, some of the most common being crush and flight speed scores. However, these methods require cattle manipulation prior to the measurement and the utilization of a crush that could potentially affect the expression of cattle behaviour. Previously, Parra *et al.* (2019) conducted a pilot trial to evaluate flight zone (FZ) measurement as an alternative assessment of temperament in 10 Brahman steers and correlated with the liveweight gain performance of the extreme groups classified as lively (FZ > 4 m) and docile (FZ < 2 m) animals. Even though the results were not significant, the trial showed tendencies ($P < 0.1$) to temperament to affect DMI, average daily gain (ADG) and feed conversion rate (FCR). The purpose of the current experiment was to further evaluate this cattle behaviour assessment method (*i.e.* FZ) using a greater number of experimental units ($n=30$) and for a longer period (60 days). A digital laser measure (Bosch 20m Zamo rangefinder) was used for daily determination of the distance between the animal and the person assessing FZ. The results were compared using linear regression.

A significant correlation was observed between FZ and ADG ($P < 0.05$, Figure 1a). A similar correlation was observed between FZ and total DMI ($P < 0.05$, Figure 1b). Despite this, no correlation was observed with FCR nor feed to grain ratio (G: F) ($P > 0.1$).

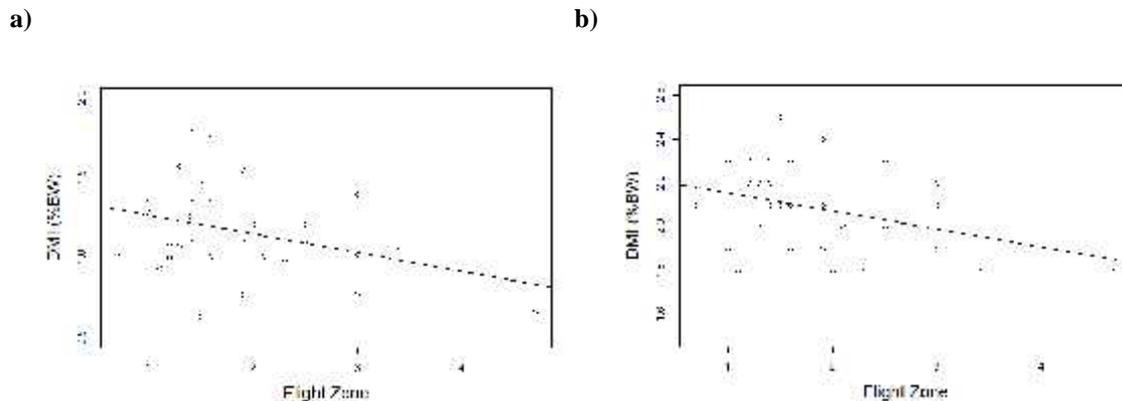


Figure 1. Relationship between flight zone and average daily gain (a) and DMI (b) in 30 Brahman steers.

Our hypothesis that more docile animals would have higher DMI and ADG was supported; however, further analysis will be required to attempt to further explain the reasons for the differences observed. These results indicate that FZ measurement can be used for assessment of cattle temperament, what seems to be related to performance and therefore it could be incorporated into selection programs.

References

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