Investigating the use of 'flight time' in commercial nucleus herds

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Introduction

In beef cattle different measurements of temperament have been shown to be heritable, genetically correlated with each other and most importantly correlated to meat quality measured as tenderness (.3 to .4) (Burrows, 2003). Parents, which have been scored as more temperamental in different tests (eg shorter flight time), have progeny with tougher meat and lower MSA (Meat Standard Australia) quality scores.

Although current pricing arrangement for pork might not reflect in any way meat quality, meat and eating quality of pork is an issue too as it does influence the buying behaviour of the consumer and therefore the amount of pork eaten. Our aim is now to investigate if we can get a inexpensive measure of temperament in commercial nucleus herds which is heritable and has any relationships with other production and meat quality traits.

Tasks of research project

1. Find three or four commercial nucleus herds, which are prepared to cooperate.

   Requirements for cooperation

   - Computerised performance recording is in place (ideally PIGBLUP users)
   - Willingness to have additional hardware/software installed at project costs
     - Beneficial if already using Ruddweigh scales
     - Minimum space (3m) required after a crate to install flight time recording device
   - Prepared to spend the extra time to have computer recorded 100-150 weight records in 40 to 60 seconds.
   - Prepared to record flight time after animal has been released.
   - Provide AGBU with growth, backfat and temperament data.

2. We will record in three or four herds for about 12 months to get records on about 10000 animals of different breeds.

3. Transfer data to AGBU by July 2004

4. Analyse data simultaneously with data collected in a proposed APL funded project at QAF which records the same traits plus meat quality traits

5. Publish results and make recommendations to you the breeder

6. If of benefit include temperament trait(s) in PIGBLUP

Technology used

To undertake this work AGBU will purchase the hardware and software and deliver it to breeders for them to install. All equipment comes from Ruddweigh at Guyra

1. Flight time recording device, which need a 12 volt battery to run. Flight time is recorded by interrupting light beams. Similar to those used in alarm systems in shops beams should be a fixed distance apart.

2. Movement recorder, which is part of the standard weighing system but has been modified to record 5 weights every two second. The variation in the weights recorded indicates the movement of the animal. Animals with a quite nature or those which go into a freeze will move less and show less variation in weights.

The total cost for each of those units will be about $3,200, which includes hardware, weighbars, indicators, cables, Palm computer and flight time light beams. We might be able to use existing weighing equipment and thus reduce costs considerably.

Additional Literature to read:

Burrow, H., 2003 "Test provides tool for beef cattle temperament selection" *Australian Farm Journal* March Issue pages 7-8.