

Size versus Beauty



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Farmers' choices in a ranking experiment with the African Ankole Long-horned cattle

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Conclusions

- Bulls are ranked more consistently than cows
- Weight is the single most important trait in bulls, heart girth in cows

- Size and beauty are equally important in bulls
- Beauty is more important than size in cows

Other traits that are also important in breeding are covered in a different part of a project on indigenous selection criteria of Ankole cattle keepers.

1. Background

1.1 The breed - African Ankole Longhorn cattle

- belongs to the Sanga group
- indigenous to the great lakes region of East Africa
- medium to large body frame with a small cervicothoracic hump
- large, long and lyre shaped horns
- coat colours: red brown, grey and black; often variegated

1.2 Importance of the breed

- social-cultural symbol
- provides food and an income source
- commodity in commercial trade & a lifetime investment
- means of insurance in risk aversion

1.3 The current production system

varies between transhumance and sedentary agro-pastoralism



Map of Uganda showing the location of the experiment site

2.0 The goal

To learn about farmer preferences for breeding animals with respect to the phenotype and thereby define the indigenous selection criteria.

3.0 Methodology

3.1 Choice experiment

Site: Nshaara Government ranch (see map) in south-western Uganda
Pre-selection of 35 cows and 15 bulls from a herd of 1,000

- 4 sub-groups of 4 cows and 2 sub-groups of 5 bulls were randomly selected at each ranking day
- 26 animals (10 bulls and 16 cows) were available to each cattle keeper for ranking
- Number of participants: 86 farmers, 6-8 per day
- Each farmer ranked the animals in each sub-group in order of preference for breeding purposes

3.2 Morphometric measurements

- 41 measurements were taken from the head, fore-quarter abdomen and hind-quarter. Measurements included weight, length and heights, circumferences, angles, horn colour and coat colour.



Ankole cows at the site of experiment

4.0 Data analysis

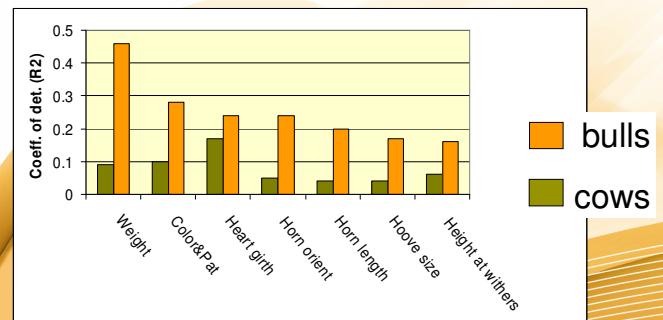
Models: Rank was defined as a dependent trait, body measurements and colour descriptions were considered as independent variables.

- 1) Each independent variable was tested separately.
- 2) The most important traits were selected and categorised as "size traits" (weight, lengths) and "beauty traits" (horns, colour, pattern).

Coefficient of determination (R^2) was used to measure relative importance.

5.0 Results

Determination of ranking results (R^2) by individual trait



Determination of ranking results (R^2) by beauty & size

