Comparison between Indigenous and crossbred [Saanen x Indigenous] goats for milk production in Malawi

RA Cooper*, Seale-Hayne Faculty of Agriculture, University of Plymouth, Newton Abbot, TQ12 6NQ, UK (a1cooper@plymouth.ac.uk)
JW Banda, Bunda College, University of Malawi, PO Box 219, Lilongwe, Malawi

Rationale

- It has been estimated that in some areas of Malawi the incidence of malnutrition in children under five may be as high as 70%.
- In many parts of the world milk is seen as a valuable food for children.
- There are approximately 1m goats in Malawi, but they are not normally milked.
- No customs or taboos prohibit the drinking of goats milk.
- Consumer tests in villages around Bunda college suggest that goats milk is preferred to that of cows.

Aims

The project was designed to examine the potential of indigenous and Saanen x indigenous Malawi goats as milk producers, when managed traditionally. Answers were sought to these questions:

How much milk is a doe capable of producing, per day and per lactation, when hand milked once per day?

• What effect does removal of this milk have on the liveweight and reproductive performance of the doe?

• Does the crossbred have advantage over the indigenous animal?

Methods

- 11 indigenous and 9 cross-bred does were used.
- Animals were grazed on indigenous pasture by day and housed overnight.
- Does were separated from their kids at housing and hand milked each morning before rejoining the kids for grazing.
- Milking began 3 days post-partum for crossbreds and 21 ± 3 days post partum for indigenous does, and continued until daily yield dropped below 50ml for 3 consecutive days.

Results: Milk yield

Table 1. Milk yield by week of lactation (ml)

<table>
<thead>
<tr>
<th>Week</th>
<th>Indigenous</th>
<th>Crossbred</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1446 ± 566</td>
<td>2202 ± 810</td>
</tr>
<tr>
<td>4</td>
<td>1535 ± 568</td>
<td>2032 ± 1113</td>
</tr>
<tr>
<td>8</td>
<td>1392 ± 592</td>
<td>1435 ± 806</td>
</tr>
<tr>
<td>12</td>
<td>1140 ± 514</td>
<td>1353 ± 485</td>
</tr>
<tr>
<td>16</td>
<td>977 ± 612</td>
<td>1471 ± 522</td>
</tr>
<tr>
<td>20</td>
<td>930 ± 435</td>
<td>2130 ± 327</td>
</tr>
</tbody>
</table>

Total lactation milk yields were variable.

• Indigenous does averaged 32.5 ± 20.1 litres in 144 ± 50 days while crossbreds averaged 42.9 ± 27.1 litres in 172 ± 103 days.

• Higher yields were associated with longer lactations. On a daily basis, Indigenous does averaged 226 ± 94 ml, with crossbred averaging 252 ± 60 ml.

Results: Reproduction

Table 2

<table>
<thead>
<tr>
<th>Kidning date</th>
<th>Mean wt. at kidding</th>
<th>Mean litter size</th>
<th>Kid mortality (%)</th>
<th>Kidding to conception (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous</td>
<td>29th April ± 3 days</td>
<td>31.7 ± 6.9kg</td>
<td>1.64</td>
<td>61 ± 44 days</td>
</tr>
<tr>
<td>Crossbred</td>
<td>31st May ± 3 days</td>
<td>30.4 ± 6.3kg</td>
<td>1.22</td>
<td>72 ± 167 days</td>
</tr>
</tbody>
</table>

• In both groups mean weight loss post-partum was 1.9 ± 1.6kg with all animals in positive energy balance by week 10.

• Return to oestrus was variable. On average, cross-breds were slower to conceive than indigenous does.

• Kid mortality was high in both groups. Major cause was a bacterial scour which also caused 36% loss in kids from non-milked does.

Conclusions

• While yields vary considerably, it is possible, with only minor modifications to traditional practice, to produce usable amounts of milk from both indigenous and crossbred Malawi goats.

• Removing this milk does not have adverse effects on the doe, either in terms of bodyweight or of reproductive performance, but kid mortality may be adversely affected.

• The milk so produced is capable of contributing significantly to the diets of children under five in the households in which the goats are kept.

• Under subsistence-farming conditions, crossbreds do not offer significant advantage over indigenous stock.

• It must be remembered that unsupplemented goats milk is unsuitable for babies under one year of age.