A Review of Reproductive Indices of the Dairy Herd at University Vet Farm (Kanyariri)

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The two major problems in the country: Poverty and food insecurity

Agriculture contributes abt 24.2% of GDP (CIA world factbook, 2013)

Livestock subsector contributes 7 per cent of GDP (GoK, 2010)

Estimated number of:
- cattle - 17,467,774;
- dairy milk cows - 3,355,407

(Population & Housing census results, 2010)
The dairy industry is the largest agricultural sub-sector in Kenya, (Muriuki et al, 2004).

It contributes:
- 17% of agricultural GDP and
- 3.5% of total GDP (GOK, 2008)
Reproductive efficiency = ability to get cows bred back rapidly after calving with a minimum number of breedings per cow.

Inefficient reproduction - reduces both the efficiency of milk production & the number of available replacement heifers - decreases profit (Varner et al, 1914)
Objective

to;

Review the reproductive performances of the vet farm dairy herd
Reproductive performance records were reviewed at the Veterinary farm, Kanyariri. A total of 24 records purposively reviewed. Data on herd size, age at first service, gestation, calf to estrus, calf to conception, age at 1st calving, intercalving interval, calves per year, inseminations collected, entered and analyzed in Microsoft excel (Microsoft corp., 2007).
Results

Herd size approximately 210
Average age approx. 7 years
Milking herd - 80
Replacement heifers, culls - 130
## Indices

<table>
<thead>
<tr>
<th>Index</th>
<th>n</th>
<th>min</th>
<th>max</th>
<th>Mean</th>
<th>Std</th>
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</thead>
<tbody>
<tr>
<td>Age 1&lt;sup&gt;st&lt;/sup&gt; service (Months)</td>
<td>24</td>
<td>20</td>
<td>41</td>
<td>29</td>
<td>36.5</td>
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<tr>
<td>Gestation (days)</td>
<td>24</td>
<td>275</td>
<td>337</td>
<td>283</td>
<td>282</td>
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<tr>
<td>Calf to estrus (Days)</td>
<td>22</td>
<td>44</td>
<td>303</td>
<td>155</td>
<td>-</td>
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<tr>
<td>Calf to conception (days)</td>
<td>22</td>
<td>44</td>
<td>558</td>
<td>193</td>
<td>80-85</td>
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<tr>
<td>Index</td>
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<tr>
<td>Age at 1st calving (Month)</td>
<td>23</td>
<td>29</td>
<td>52</td>
<td>40</td>
<td>31</td>
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<tr>
<td>1st calving interval (Hare et al, 2006)</td>
<td>19</td>
<td>11</td>
<td>22</td>
<td>15.9</td>
<td>12.9</td>
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<tr>
<td>Inter calving interval (Months)</td>
<td>18</td>
<td>12</td>
<td>30</td>
<td>18.1</td>
<td>12</td>
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<td>Calves per year</td>
<td>24</td>
<td>0</td>
<td>1</td>
<td>0.63</td>
<td>1</td>
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<tr>
<td>Conceptions</td>
<td>1997 - 2006</td>
<td>2007 - 2012</td>
<td>Total</td>
<td></td>
<td></td>
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<td>-------------</td>
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<tr>
<td>Successes</td>
<td>31</td>
<td>63</td>
<td>94</td>
<td></td>
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<tr>
<td>repeats</td>
<td>10</td>
<td>86</td>
<td>96</td>
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<td>% success</td>
<td>75.6</td>
<td>42.3</td>
<td>49.5</td>
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</table>
No. of services per conception = 1.44

Overall conception rate = \( \frac{100}{190} = 52.6\% \)
Fertility in cattle is affected by
• environmental,
• genetic,
• disease and
• management factors.

These influence the reproductive process at ovulation, fertilization or implantation or during gestation and parturition.
• **Inter Calving interval (CI)** is an important index of cow reproductive performance and an ICI of 365 days is desirable for efficient production (Esslemont, 1993).

• ICI of
  
  ➢ 646 days reported (Odima et al., 1994)
  ➢ 480 days by MoLD, 1989

• The reproductive indices reviewed were not within expected values.
- cont -

• Probable reasons;
  ➢ Inadequate nutrition
  ➢ failure to manifest estrus/ anoestrus
  ➢ failure to detect estrus
  ➢ Repeat inseminations/ breeders/ inseminator effect
Recommendations

• Herd size; -
  ➢ overstocked - reduce to carrying capacity
  ➢ remove culls.

• Records
Urgent need to correctly capture & enter details for individual animal and herd.

  1 cow calved without insemination
  1 cow was in calf for 337 days
-Cont-

• Consider new cow card design to include e.g. birth weight (calf) and periodic weight gains (dam & calf); BCS at insemination

• Cull non productive animals

  650 litres/ 80 milkers

• 1 cow repeatedly inseminated 7 times – not pg 18 months later!

• Establish causes of prolonged inter-calving interval
References

Esslemont, R. J. (1993): Relationship between herd calving to conception intervals and culling rate for failure to conceive, Veterinary Record 133: 163-164


GOK,(2010).Population & Housing census results)


Thank you