Socio-economic Aspects of Brucellosis in Kuku Dairy Scheme

By

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Kuku Dairy Scheme located in Khartoum State contains 60% of cross-bred dairy cattle raised in Sudan. Animal population account to 10306 head, at risk people 649 person.

Sudan was proved to be endemic with brucellosis, both animal and human.

Objective

This work aims to highlight the socio-economics of this disease in the Kuku Scheme. Hence the importance of its control.

Specific objectives are:
- To quantify the losses due to animal as well as human brucellosis over 11 years period (2004-2015).
- To know the social factors related to the disease.
- To know the producers attitude toward the control of the disease.

Methodology

KUKU model (Angara, 2005) in which the necessary epidemiological and economic data was utilized for the analysis. Data on herd composition, production parameters, and economic data need to compute the cost of the dairy, health sector and the burden of the disease on human population were included in the model.

Losses due to reduction of milk production. Losses due to infertility, for heath sector; transport cost, Doctor Fees, laboratory fees and drug fees.

For the burden of the disease: disability adjusted life years (DALYs) were calculated following (Fox-Rushby, 2002). The case was studied in two Scenarios.

In the first one animal population was left to grow at the normal rate while in the other the number of animals was held constant. Microsoft excel was used in computations.

Results

In the baseline year (2004) the following results were obtained:

Table 1: Cost of the dairy sector

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Value (US$)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk lost (tons)</td>
<td>92.5</td>
<td>247271.4</td>
<td>92</td>
</tr>
<tr>
<td>Cows lost (head)</td>
<td>2.5</td>
<td>20781.9</td>
<td>8</td>
</tr>
<tr>
<td>Total loss (US$)</td>
<td>267642.9</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Cost of Brucellosis in Health Sector

Scenario 1

In this Scenario animal population grow at normal growth rate. Accordingly the cost of the disease over 11year period.

Table 3: Table of milk and cattle lost due to Brucellosis in Kuku Dairy Scheme

Table 4: Cost of Brucellosis in Health Sector

Table 5: Value of milk and cattle lost

Scenario 2

Table 6: Cost of Brucellosis in Health Sector

Comparison between the two scenarios

Table 7: Cost of dairy sector (Comparison between the two scenarios)

Table 8: Cost sharing of Brucellosis between Dairy and Health Sectors.

The total cost of brucellosis in both dairy and health sectors was found to be (565176.1421US$ over the eleven years). 98.5% was the cost of the dairy sector and 0.5% was the cost of health sector.

Table 9: Cost sharing of Brucellosis between Dairy and Health Sectors

Table 10: Knowledge about the disease

Table 11: Knowledge about the disease economics of the disease

Table 12: Producers attitude to alternative control strategies

Social factors associated with brucellosis and its control

Knowledge about the disease