Kenya Agricultural & Livestock Research Organization

**Project Title:** Determination and control of residues and contaminant levels in milk for improved health and productivity of animals and humans

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<th>Institute</th>
<th>Veterinary Research Institute</th>
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<td>Center(s)</td>
<td>KALRO Muguga North</td>
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<tr>
<td>Principal Investigator</td>
<td>P.N. Ndirangu; A. Kipronoh;</td>
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<td>Other investigators</td>
<td>S Omwenga; Erick Mungube Ouma; Joseph Nginyi; Monica Maichomo; Moses Olum; Hezron O Wesonga; J.M Mugambi; L.W Kanja;</td>
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**Problem Statement**

For several decades, scientists have continually researched on and documented substances found in livestock milk that can have public health implications. There are several gaps in the current knowledge on substances found in livestock milk that can have public health implications including: (a) insufficient information on the nature and levels of residues, chemicals and heavy metals in milk (b) lack of toxicological data on health outcomes that may arise in humans exposed to such substances in milk. These gaps in information impede risk assessment and make the formulation of evidence-based public health guidance difficult. To address these issues there is a need for a carefully planned and conducted national milk monitoring effort. In addition, consumer expectations are that milk and other dairy products are wholesome, safe and free of chemical adulteration or contamination. The groups at the highest risk are infants and young children whose main meal at weaning is mainly composed of milk from cattle, goats or camels. Pregnant mothers also consume milk and milk products as a source of proteins and minerals thus putting them at a high risk of the harmful effects of milk residues to both themselves and the unborn child.

**Objective(s)**

1. To determine the predisposing factors contributing to the presence of residues and contaminants in milk
2. To determine extent and nature of residues and contaminants affecting the quality of milk
3. To formulate guidelines for reducing residues and contaminants in milk
4. To disseminate the research findings amongst the different stakeholders. doses

**Planned Activities**

1. Field milk testing, sample collection and identification of predisposing factors using questionnaires.
2. Laboratory milk sample analysis for residues and contaminants.
3. Data entry and analysis.
4. Holding a write-shop to formulate of guidelines for reducing residues and contaminants in milk.
5. Report writing and dissemination of research findings in conferences and as scientific publications.

**Outputs**

1. 200 milk samples tested on-spot for presence of physical contaminants, organoleptic qualities and mastitis (CMT).
2. 200 milk samples collected from the field for laboratory analysis.
3. 100 questionnaires administered to identify predisposing factors for milk contaminants.
4. 200 milk samples tested in the laboratory for presence of residues and contaminants.
5. Predisposing factors and types of milk contaminants identified.
7. Project report.
8. Two scientific publications.

**Outcomes**

To contribute to enhanced sustainable productivity and competitiveness of the dairy sub-sector by having wholesome and safe milk through reduction of residues and contaminants.

**Budget**

7,079,800.00
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<td>End date</td>
<td>2019-05-31</td>
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<tr>
<td>Funded by</td>
<td>USAID;</td>
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<tr>
<td>Collaborators</td>
<td>UoN; DVS; Nandi County livestock officers; Kisumu County livestock officers;</td>
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