**Project Title:** Development, Packaging and dissemination of effective innovative Diagnostics and Vaccines major livestock diseases (RVF, PPR)

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<th>Institute</th>
<th>Biotechnology Research Institute</th>
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<td>Center(s)</td>
<td>KALRO Kabete Biotechnology</td>
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<td>Principal Investigator</td>
<td>Y.S Binepal;</td>
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<td>Other investigators</td>
<td>Henry Karithii; Leonard Ateya; Jacob Gichuki; Francis Wekesa; Perminus Wachira;</td>
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**Problem Statement**

RVF - Rift valley fever is an economically important zoonotic disease of ruminants. Although its control has been attempted through use of live attenuated and inactivated vaccines, the said vaccines are still deficient.

PPR – PPR is an economically important disease of small ruminants. It is currently controlled by an live attenuated virus however notions of the virus reverting to its virulent form remain. The vaccine also requires a cold chain.

**Objective(s)**

To improve food security through increased milk and meat production and marketing by improving diagnosis and vaccines of RVFV and PPR

**Planned Activities**

**RVF Vaccine**
1. Carry out RT-PCR using the NC and NS primers
2. Clone the products of RT-PCR into E.Coli expression vectors
3. Express and purify the proteins
4. Test the expressed proteins a sub – unit vaccine in mice
5. Test the expressed proteins a sub – unit vaccine in sheep

**RVF Diagnosis**
1. Carry out RT-PCR using the NC and NS primers
2. Clone the products of RT-PCR into E.Coli expression vectors
3. Express and purify the proteins
4. Produce antibodies to the purified proteins in lab animals (rabbits and guinea – pigs)
5. Develop diagnostic tests
6. Validate the tests using field and tissue culture samples

**PPR Vaccine**
1. Carry out RT-PCR using the fusion gene and matrix gene primers
2. Clone the products of RT-PCR into E.Coli expression vectors
3. Express and purify the proteins
4. Test the expressed proteins a sub – unit vaccine in mice
5. Test the expressed proteins a sub – unit vaccine in goats

**Outputs**
1. At least two potential vaccines (RVF & PPR) tested
2. Reduce costs of Diagnostic tests
3. At least develop two (RVF) pen side test
4. Scientific publications

**Outcomes**
Improved vaccines and diagnostic tests

**Budget**
6,000,000.00

**Start date**
2017-11-01

**End date**
2019-12-31

**Funded by**
USAID;

**Collaborators**
DVS;