



Epidemiology and genetic associations of key zoonoses in small-holder dairy cattle in Tanzania

Background

The dairy industry is an important emerging livestock industry in many LMICs particularly in Africa, with increasing use of indigenous and exotic dairy animals. However, there is evidence that pure exotic dairy cattle (such as Holstein-Friesian or Jersey) and crossbreds of over 75% of exotic blood may be at increased risk of contracting certain important zoonoses such as bovine tuberculosis (bTB), brucellosis or leptospirosis. These are likely to have a genetic component, and work in the UK, in particular, has already led to a breeding programme based on estimated breeding values to select for sires that are less susceptible to bTB. In African dairy systems where structured dairy cattle breeding programs are being implemented -such as in East Africa under the African Dairy Genetic Gains (ADGG) project – the incorporation of selection for these traits into the breeding program would thus be advantageous.

Project description

The Centre for Tropical Livestock Genetics and Health (CTLGH) supports programs that improve livestock-based livelihoods in the tropics. It is a strategic alliance of The Roslin Institute at the University of Edinburgh, Scotland's Rural College and the International Livestock Research Institute. The ADGG project is, among other activities, studying the genetic composition of small-holder dairy cattle and the suitability of different levels of indigenous and exotic mix on dairy production and health. In collaboration with the Nelson Mandela African Institution of Science and Technology (NM-AIST), CTLGH has a new project studying the epidemiology of bTB, brucellosis and leptospirosis in this small-holder dairy cattle population in Tanzania. In addition, the project will conduct a series of genome association studies to understand the impact of European taurine introgression on disease risk and identify SNP markers for putative causal variants for disease resistance/tolerance/susceptibility. The outputs of this project will provide the necessary information and toolset to establish a breeding program that will reduce the prevalence of these three key zoonotic diseases and reproductive failures/calf mortality in African dairy cattle. It will contribute to improving animal, farmer and consumer health, nutritional status and food security. In the long-term, the approach pioneered within this project may also be adapted to other infectious cattle diseases.

The CTLGH is looking to recruit enthusiastic and energetic veterinary graduates interested in gaining a PhD or MSc through the NM-AIST. The postgraduate students will be part of a multidisciplinary team composed of researchers from NM-AIST, TALIRI, The Roslin Institute and the International Livestock Research Institute (ILRI).

The work of the postgraduate students will include 6-12 months fieldwork, farm visits, handling and sampling dairy cattle, preparation of samples, laboratory analysis (ELISA), modeling, bioinformatics and preparation of scientific papers for publication.



Requirements

PhD applicants (One position)

- Have a Bachelor degree in Veterinary Medicine (BVSc/ BVM) or Biotechnology (Veterinary)
- Hold a Masters degree relevant to this application with experience in laboratory techniques as added advantage.
- Have NM-AIST's admission letter stating the by Research and Thesis degree mode as stipulated in the NM-AIST's guidelines (www.nm-aist.ac.tz)
- Be a citizen of Tanzania
- Motorbike driving license is added advantage.

MSc applicants (3 positions)

- Have a Bachelor degree in Veterinary Medicine (BVSc/ BVM) or Biotechnology (Veterinary)
- These positions will consider already enrolled Masters Students looking for a project or applicants under research and thesis mode as stipulated in the NM-AIST guidelines.
- Be a citizen of Tanzania.
- Motorbike driving license is added advantage.

Award

A PhD candidate will be paid a monthly stipend for the whole duration of the study (three years)

All MSc candidates will be paid monthly stipend for the whole duration of the study (two years).

In addition, NM-AIST postgraduate fees and all field and laboratory cost will be covered by the project.

Information/applications

1. Interested applicants should submit a CV with names and contact information for three referees.
2. Two to three pages concept note
3. Two-page motivation letter

The motivation letter should include;

- The applicants career goals
- A summary of the applicant's qualifications and previous experience related to the intended research topic in line with the project description.

All applications for scholarships should reach the office by 31st August, 2018 through the following email address: ctlgh@nm-aist.ac.tz Copied to E.Cook@cgiar.org

Only shortlisted applicants will be contacted for oral interviews.



Centre for
Tropical Livestock
Genetics and Health



ADGG
African Dairy Genetic Gains
www.adggproject.org