



Tropentag, September 17-19, 2014, Prague, Czech Republic

“Bridging the gap between increasing knowledge and decreasing resources”

The Known and the Unknowns: A Multipathogen Survey to Identify Diseases in Cattle Herds in Tanzania

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Abstract

Livestock farmers in Africa are facing enormous challenges in animal health. The capacity and infrastructure of government services for disease identification and control are often limited. In the absence of systematic surveillance systems for animal diseases, the information on pathogens affecting livestock has been filled by targeted surveys conducted in certain locations and for specific conditions. The picture provided by these ad hoc surveys can be distorted with a bias towards the most widely known diseases or towards those for which diagnostic methods are more readily available.

Participatory rural appraisals with cattle farmers in Tanzania revealed that disease in livestock is one of the main factors contributing to limited productivity and income generation. Often, the causes of livestock disease are unknown and differential diagnosis is not conducted resulting in mistreatment of animals and long-term negative economic impact. In response to this concern, a multipathogen survey was conducted among cattle farmers in two regions in Tanzania to (i) confirm the presence of well-known cattle pathogens, and (ii) investigate the presence of cattle pathogens rarely looked for in the area before. Sick cattle (n=400) were actively searched among cattle herds and blood samples collected along with information on farming practices. ELISA diagnostic kits were used to detect antibodies against the following cattle pathogens: contagious bovine pleuropneumonia (CBPP), anaplasmosis, theileriosis (x2), babesiosis, brucellosis, Rift Valley fever, Q fever, neospora, infectious bovine rhinotracheitis, bovine viral diarrhea (BVD) and bovine respiratory syncytial virus (BRSV).

The results of the survey will be presented. The relative presence of each of the studied pathogens will be presented and the characteristics of the farming populations and factors that may be associated with the relative presence discussed. Finally we will discuss the implications of farming management practices on the presence/absence of certain pathogens.

Keywords: Cattle, multipathogens, Tanzania