



Tropentag, September 17-19, 2013, Stuttgart-Hohenheim
“Agricultural development within the rural-urban continuum”

The Importance of Preliminary Diagnostics before Embarking on Large-Scale Treatments of Livestock in Emergency Interventions

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Abstract

Since March/April 2012 refugees from Blue Nile State in the Republic of Sudan have arrived in neighbouring Maban County, Upper Nile State, South Sudan together with large numbers of livestock. High mortalities of the newly introduced livestock populations were recorded soon after their arrival. During early November 2012 as many as 400 cattle were reported to have died per week. VSF-Germany was then requested to conduct emergency measures in the area.

Initially, blood samples from 62 animals were examined of which 25 % were positive with *Trypanosoma vivax*. Novidium® (Ethidium chloride, 1 mg kg⁻¹ bw.), a trypanocidal drug used for treatment of infections with *T. vivax* (and *T. congolense*) was given to 9500 cattle. The cattle were also vaccinated against Haemorrhagic Septicaemia, Contagious Bovine Pleuropneumonia, and Anthrax. As animals in poor condition were still observed, a fact-finding mission was performed during March 2013. Thirtyfive clinically suspect cattle were investigated. Their average haematocrit (PCV%) was 21.4%, and in nine cases trypanosomes were detected by wet blood film examination. Subsequently, *T. evansi* - which is refractory to Novidium® treatment - was confirmed in one animal.

Five mono-conical (Vavoua) and five NGU traps were deployed for 24h along the river Yabus in what appeared to be suitable habitats but failed to catch any tsetse fly. However, the presence of numerous *Stomoxys* and *Tabanus* spp. points to the possibility of mechanical transmission of trypanosomes. Another potential mechanical vector (*Lyperosia*) was frequently observed on cattle.

Our findings show the need for thorough diagnostic investigations even in emergency situations where all parties involved often act under time constraints. Measures might be in vain or – even worse – might contribute to the development of therapy-resistant pathogens unless the causes of disease and animal losses are fully understood.

Keywords: Livestock diseases, Sudan