

## Prevalence of Bovine Trypanosomiasis and Tsetse Fly Density in Different Regions of Ethiopia: A Review

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### Abstract

Ethiopia is well known for its huge and varied endowment of animal resources and bovine trypanosomiasis has long been recognized as a massive constraint to animal husbandry, animal production and mixed farming in large areas of Africa rural sub-Saharan. In Ethiopia, trypanosomiasis is common in domestic livestock in the Western, South and Southwestern lowland regions and the associated river systems. Tsetse flies in Ethiopia are confined to the southern and western regions. Out of nine regions in Ethiopia, five (Amhara region, Benshangul-Gumuz, Gambella, Oromia and regional state of nations and peoples of the South) are infected with more than one species of tsetse flies and there are five species of tsetse flies in some regions. For this organized review more than 60 published paper from 2000-2019 which were completed in Amhara, Oromia, SNNPRs, Benshangul Gumize and Gambella regions, respectively. According to the review, the overall prevalence of bovine trypanosomiasis in five regions of Ethiopia revealed that 8.6%, 9.3%, 11.2%, 10.6% and 18.1% in Amhara, Oromia, SNNPR, Benshangul Gumize and Gambella, respectively. In addition, this review highlighted a heavy infestation of tsetse flies in the Oromia region by four species, namely *Glossina pallidipes*, *Glossina morsitans*, *Glossina fuscipes* and *Glossina tachinoide*, followed by *G. pallidipes*, *G. fuscipes* and *G. longipennis* in SNNPR, *G. m. submorsitans* and *G. tachinoides* in Amhara, *G. morsitans* and *G. tachinoides* in Benshangul Gumize and *Glossina pallidipes*, *Glossina morsitans*, *Glossina fuscipes* and *Glossina tachinoide* in Gambella. Ultimately, the review showed that there was no major difference in the prevalence of bovine trypanosomiasis in five regions, except in the Gambella region, therefore, the National Institute of Trypanosomiasis and d The tsetse survey and control should cover all regions infested with tsetse flies in the country with control of mechanical transmission by biting flies.

Keywords: Ethiopia; Prevalence; Trypanosomiasis; Tsetse Fly Density (TFD)

Literature Review: Different literature shown that five regions in Ethiopia are infested with four species of glossina namely *Glossina pallidipes*, *Glossina morsitans*, *Glossina fuscipes* and *Glossina tachinoide* and the remaining one species *G. longipennis* are reported in SNNPRS, south Omo Zone, particularly in Mago national park by Arba Minch tsetse fly and trypanosomiasis investigation and control center. Based on this holistic review no report have been indicated the prevalence of bovine trypanosomiasis and tsetse fly in natural reservoir of the disease like wild animal and national parks which are believed to be the pocket area for the tsetse fly to live and this could be one of the research gap this review identified in Ethiopia.

Amhara region: Amhara region is one of the potential regions in livestock population in the country and according to different authors in the region the area is highly infested with two tsetse fly species. From 2000-2019 only 12 published paper from different article are included and some of them are done in the

same woreda by different author but their finding was different this is due to the use of different diagnostic methods and traps for catching tsetse fly. Based on this review out of 16592 samples from different study area 1427 (8.6%) was positive for the parasite, out of this the most prevalent species of *Trypanosoma* in the region was *T. vivax* followed by *T. congolense*; *T. brucei* was rare species only reported in few area as stated in the Table 1 below. This could be due to the experience of the personal to identify and the use of common laboratory technique. The entomological survey by different authors indicted that *G. m. submorsitans* and *G. tachinoides* are the two tsetse fly species in the region. There was only few published work that shown tsetse fly density in the region and this was one of the area to further investigate the tsetse fly density in the region and to plan the control programme in the area.

### Conclusion

Out of nine region of the country, this review found more than 60 published papers which are entirely concentrated in five regions of Ethiopia namely Amhara, Oromia, SNNPRs, Benshangul Gumize and Gambella and the overall prevalence shows no variation among region but only in Gambella there is a significant difference among the other regions. Therefore, a lot of efforts need to be in place to combat the most important constraint of the livestock sector in Ethiopia.

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