1.1.12 Dondo Bena. (2009). Efficacy of sorghum (*Sorghum bicolor* (L.) Moench.) as a biocontrol agent for the control of maize stalk borers in the intercropping systems. (Supervisors: Dr M. Mataa and Dr M. Chisi).

Maize stalk borers are an important constraint of maize production. Field trials were conducted in the rainy season of 2007 and 2008 to assess the efficacy of using sorghum as a biocontrol agent of maize stalk borers. Maize and sorghum were planted in three
spatial intercrops arrangements, in alternating rows (Sorghum to Maize). The intercrops were 1:1, 1:2 and 2:1. Monocropped maize was planted as control. All the intercropping combinations and monocropping were grown without insecticide treatment. The study had the following objectives: to determine the efficacy of sorghum as a maize stalk borer's control agent; to evaluate the influence of maize and sorghum variety on effectiveness of the intercropping on reducing stalk borers attack on maize and to assess the effect of sorghum population density on its effectiveness of intercropping as a biocontrol agent of maize stalk borers. The results show that Stalk borer attack in sorghum was over ten times more compared to maize. Among the sorghum varieties, attack from stalk borers appeared to be higher in Sima compared to Madura and Sweet sorghum. Stalk borer attack was about 55 % in Sima, and about 40 % in Madura and Sweet sorghum. The overall mean maize yield across the sorghum varieties was about 1.16 MT/ha. Maize intercropped with Sweet Sorghum had a yield of about 1.19MT/ha, maize intercropped with Madura had about 1.17Mt/ha and maize intercropped with Sima had the lowest yield of about 1.13 MT/ha. There were significant differences in the maize yields obtained from different intercropping systems. The highest yield was obtained in the control plot, where maize was grown alone. The yield from the control plot was close to 2MT/ha, this was followed by the yield from plots with the 1:2 sorghum to maize intercrop which had about 1.3 Mt/ha, which was significantly higher than yields obtained from the 1:1 and 2:1 sorghum to maize intercrops which had yields of 0.77 MT/ha and 0.67 MT/ha respectively.