The effect of simulated heat intensity on the germination and establishment of *A.nigrescens* and *A.nilotica*

BY JOSPHINE MUNDAVA

Submitted in Partial Fulfillment of the Requirements for the Bachelor of Science Honours Degree in Forest Resources and Wildlife Management

FACULTY OF ENVIRONMENTAL SCIENCE

DEPARTMENT OF FOREST RESOURCES AND WILDLIFE MANAGEMENT

BULAWAYO, ZIMBABWE

MAY, 2007

ABSTRACT

Acacias are an important part of the livelihoods of many people in Zimbabwe, both in urban areas and in the rural areas. *Acacia nigrescens* and *Acacia nilotica* produce nutritious pods that are important forage for livestock and wildlife. The two species are mostly found in the dry regions of the country. Fires that have different ranges in temperatures and in their duration constantly affect these areas. This research project aims at measuring the responses of the two species to varying heat intensities for different times. Heat intensity was simulated in the laboratory. Exposing the seeds to different temperatures for differing durations of time simulated intensity. The responses of the two species were measured in terms of germination successes and the rates of establishment. The responses of the two species show that *A. nilotica* is more susceptible to heat than *A. nigrescens*. It is also noted that as temperatures increase and the time of exposure increase, the rates of establishment are lowered.

Ideally, fires that are used for management purposes should therefore of low heat intensity to have the least effect on the two species. Practicing early burning can produce such fires.