

## Project Update: August 2023

Availability of moisture and amount of humidity are limiting factors for the development of nematode eggs to infectious larvae stage and the survival of eggs and larvae in dry areas such as African savanna ecosystem due to high sunlight and temperature in these areas, which may lead to desiccation of nematode eggs and death of larvae. Large trees found in Savanna ecosystem such as *Vauchelia tortilis* canopy cover provide shades that may create conducive micro-climate for nematode with enough moisture and less heat compared to areas outside the tree canopy. These differences in micro-climate conditions may lead to difference in densities/availability of nematode larvae between areas under tree canopy and outside tree canopy. The essence of this project is to understand the effects of savanna vegetation tree (*Vauchelia tortilis*) and grass shades on development and availability of the pasture larvae in Serengeti ecosystem. The project progress and monitoring activities is described below.

### 1. Monitoring activities

S/N	Activity	Place	Date/Time
01	Supervision meetings	University of Glasgow/Zoom	Once every week, on Wednesday 12:00 to 13:00
02	Data jam	University of Glasgow	Once every week, on Friday 09:00 to 12:00
03	Progress report submission	University of Glasgow	July 2023

### 2. Project progress

**Fieldwork/baseline survey;** Baseline survey was conducted in Serengeti National Park to assess canopy cover of different tree species (and the associated tree shade). From the baseline survey, *Vauchelia tortilis* was identified as suitable species to be considered for the project undertakings, and follow-up to assess tree shade (sun light variation between outside tree canopy and under tree canopy was made for a total of 50 trees of *Vauchelia tortilis*. Other measurements made includes (1) relative variation of animal use/activity/occupancy between outside tree canopy, and under tree canopy was made through assessment of dung density, (2) pasture biomass variation between outside tree canopy and under tree canopy.

**Incorporation of experimental approach;** Following field survey findings and review of the project design we decided to include and design an experiment that will help to clearly tease apart the effect of tree canopy shade on gastrointestinal larvae development and availability in pasture. The next report will provide a summary of the experiment design.



Figure 1: Tree species survey during dry season to identify suitable species with longer/lasting canopy shade during dry season.



Figure 2: Tree canopy survey during wet season



Figure 3; Light meter for assess variation of sunlight (effect of tree shade) between outside tree canopy and under tree canopy.



Figure 4: Established transect during the survey for assessing animal dung density, and pasture biomass.



Figure 5: Disc Pasture Meter (DPM) for assessing pasture biomass.

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