BEFTA Protocol
Oil palm herbivory protocol
04/10/2013
www.oilpalmbiodiversity.com

Biodiversity
Ecosystem
Function
Tropical
Agriculture

Background

This project aims to assess herbivory within the plots at regular intervals throughout the project. Collection methods include the use of ImageJ software to calculate leaf damage, which has been used widely in other tropical studies ().

Methods

The activity is done every 3 months.

Choose three palms at random from the central 50x50 m square using a random grid

Record palm number

Estimate the percentage level of herbivory (total) for each chosen palm by eye

Cut the 17th frond from the palm

Collect a sample of each species of ants on the cut frond and estimate the abundance of each type

Collect all lepidopteran larvae and pupae

Etimate the percentage level of herbivory (total) on the cut fron

Collect 20 leaflets (10 each side) by separating the frond length into ten equal lengths and cutting a frond in each section

Assign the cut leaflets into one of four different herbivory level categories: undamaged (0), low (1), medium (2), or high (3) damage

Take a photo of the 20 leaves on a white board with a ruler for scale and with the plot number, date and palm number written.

These digital images are later processed in the lab to assess % herbivory on the fronds, using ImageJ software

Form:

Plot	Date	Palm Number	% herbivory palm	Number Caterpillar &	Ants characteristic/ note	number	% herbivory frond	level herbivory leaves (20)			
								0	1	2	3