

AFRICA CENTRE OF EXCELLENCE IN SUSTAINABLE USE OF INSECTS AS FOOD & FEED (INSEFOODS)



Domestication of Longhorn Grasshoppers for human food

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INTRODUCTION

❖ For many centuries, longhorn grasshoppers (tsenene/senesene) has been part of the food culture in the lake Victoria region. The grasshopper is most commonly green or brown but sometimes exhibit color polymorphism. It is highly nutritious, but its seasonality has made it less available across the region. Efforts to domesticate the insect and embrace it as part of livelihood could help live a healthy lifestyle and ensure food security across the divide.



Adult longhorn grasshoppers

Fresh laid eggs

Materials and Methods.

- ❖ The study is being conducted in Jaramogi Oginga Odinga University of Science and Technology.
- ❖ Ninety eight eggs were obtained from Makerere University in a petri-dish lined with moist cotton wool and were subjected to suitable hatching condition .
- ❖ The nymphs were transferred to a 45cm³ netting cage with sand at the bottom and fed on water and soft guinea grass blades.
- ❖ Adult grasshoppers were fed seeds of guinea grass and star grass which are rich in proteins.

Nutritional potential of long horned Grass hopper

Nutrients	Green	Brown
Protein	37.1%	35.3%
Fat	48.2%	46.2%
Ash	2.8%	2.6%
Fiber	3.9%	4.9%
Potassium	370.6mg	259.7mg
Phosphorus	140.9mg	121mg
Calcium	27.4mg	24.5mg
Iron	16.6mg	13.0mg
Zinc	17.3mg	12.4mg

Kinyuru et al,2009



Eggs turn grey-hatching process

Results

- ❖ Thirty eggs hatched into nymphs within fourteen days and seventeen survived to maturity.
- ❖ After two months ,the first generation began to lay eggs within the grass blades which would be collected at an interval of five days and placed into different laying Petri dishes.
- ❖ A total of six hundred eggs were laid and kept in different petri dishes to hatch.
- ❖ It is envisaged that there will be high multiplicity overtime which may translate to higher productivity.
- ❖ Adult grasshoppers were processed into flour and used to prepare different snacks like biscuits, cookies and cakes.
- ❖ Longhorn grasshoppers can be deep fried or sun-dried and served as whole with rice or ugali.



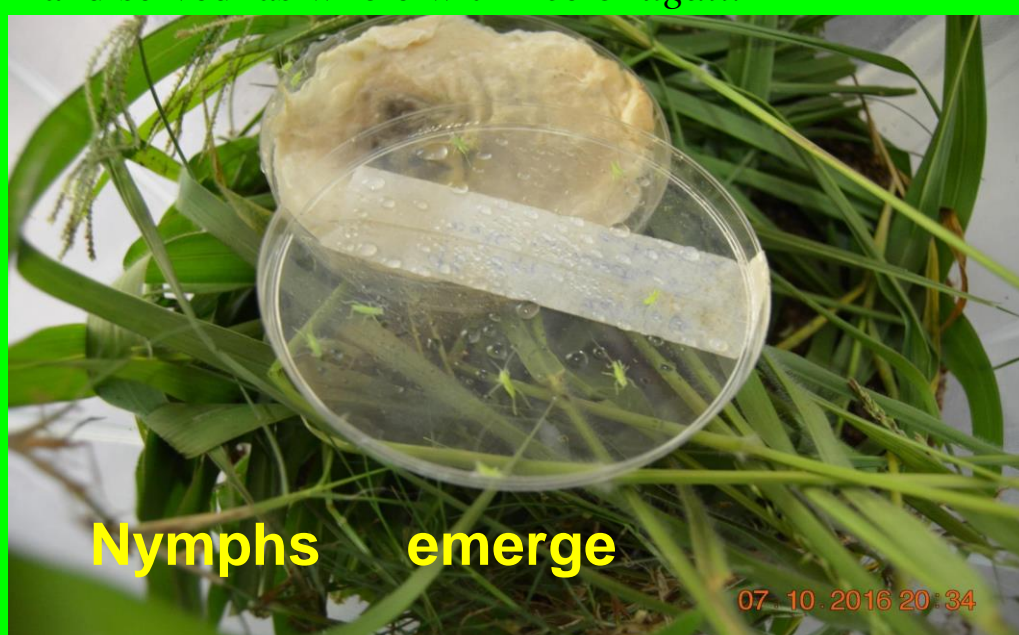
Processed products



Harvested grass-hoppers



Longhorn grasshopper flour



Nymphs emerge



Finished products

Conclusion

The supply of longhorn grasshoppers is normally seasonal. However, for continuous sustainable production, domestication is essential and has been proven possible. Harnessing and continuous production could help ameliorate malnutrition, food insecurity and improve the livelihood of many people especially those hard-hit by the climatic changes and reduce prevalence of some common diseases.