Monitoring of Pesticides and Antibiotic Residues in Honey
Study Areas, Kenya, Uganda and South Sudan

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Introduction

- Safety of food and feed is one of the main objective in consumer health policy.
- Many questions are raising in case of food safety, the reason is the possible presence of chemical residues in the final products.
- Consumer safety become a major priority for the governments of developed countries and food safety is a criterion for the trading and prices on the market.

Introduction

- One of the challenges which face the African honeybee access to markets is an underdeveloped marketing system of hive products both locally and internationally due to problems of quality control and marketing channel organizations.

Aims

- To screen the pesticides and anti biotic residues in the African beehive products and to determine whether it is within the EU range of (MRLs).
- To insure that the African honey is meeting the minimum quality and labelling requirements (according to EU and CODEX Standards)

Materials and Methods

- Chemicals:
- Methanol
- Ethyl Acetate
- Nitrogen
- Dichloromethane
- Collection of Samples.
- Extraction Procedures;
  - Antibiotics
  - Pesticides
- Gas Chromatography – Mass Spectrometer for the detections of Pesticide residues (Cristiana *et al,.*2003).
- High Performance Liquid Chromatography for the detections of Antibiotic residues

Results

- Antibiotics, Retention Time and Limit of Detection.

Antibiotic	Retention time (min)	Limit of detection (µg/ml)
Tetracycline	9.942	0.005
Streptomycin	8.48	0.005

Detection limit, Pesticides Group, Retention time and limit of

Pesticide	Group	Retention Time (Min)	Limit detection (mg/ml)
Endosulfan	Organochlorine	16.17	0.001
Chlorpyrifos	Organophosphate	22.83	0.001
Lindane	Organochlorine	13.57	0.001
Malathion	Organophosphate	12.50	0.001

Results

- Of all the honey samples from the three countries and respective counties analyzed there were no residues of tetracycline or Streptomycin detected.
- Also extract were analysed for two organochlorin (Endosulfan and Lindane) and two organophoshate (Chlorpyrifos and Malathion) by Gas Chromotogarphy-Mass Spectrometer. The result revealed that none of the mentioned pesticides were detected or exceeds their detections limit which was (0.001mg/kg).

Conclusions:

- The present of drugs and pesticide residues in honeybee is dangerous for consumer health, also it reduce the quality of the products which will lead to products low competence in the global markets.
- The Quality of honey produced in the countries studied met the Standards and they were free of residues studied.
- Honey produced in region is able to penetrate the EU market if proper measures are put in place.

Recommendations

- More studies should be hold in this area.
- Labelling of honey must be supported by analysis that confirms its provenance and safety.
- Health authorities , NSB and all the related stakeholders in all nations have to introduce firm legislations and laws that control and regulate honey production, handling, and analysis to ascertain its safety.


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THANKS