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Postharvest losses of yam tubers in Benue state, Nigeria, West Africa

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Statement of the Problem: Africa is the largest producer of yam in the world, with the highest production coming from West Africa. Benue State is the largest producer of yams in Nigeria followed by other States in North Central region. This is because of the rainfall, soil and other climatic conditions that are favorable for yam production in this region. The yams produced form staple food for about 182.2 million people. Postharvest losses of yam tubers (*Dioscorea rotundata* and *D. alata*) may occur from a number of causes ranging from improper handling of the tubers to bio-deterioration by microorganisms, insects or rodents. The largest cause of postharvest losses of yam tubers is from microorganisms.

Methodology & Theoretical Orientation: Isolation and identification of microorganisms responsible for the rot of yam tubers was carried out using standard methods of isolation and identification. Optimum temperature of growth was analyzed; pathogenicity test was conducted on the isolates to confirm them as the etiologies of the rot. Plant extract was prepared and incorporated on media plates and used for antimicrobial sensitivity test.

Findings: Four bacteria species (*Serratia marcescens*, *Erwinia carotovora*, *Klebsiella oxytoca* and *Pseudomonas aeruginosa*) and five fungi species (*Aspergillus niger*, *Rhizopus stolonifer*, *Botryodiplodia theobromae*, *Fusarium oxysporum* and *Penicillium marneffeii*) were consistently isolated in samples from the various sampling areas. Pathogenicity test revealed the organisms as the cause of the rot. They were inhibited by the plant extracts partially or completely.

Conclusion & Significance: Extensive loss of the harvest can be prevented by blending the various extracts and spraying them on the yams to arrest rot.

Biography

Tseaa Shambe is a Chemist and a Lecturer in Organic Chemistry. He has published papers on chemical composition and structures of some carbohydrates and their degradation by enzymes and acids. He has also worked on the use of bread and composite flour for bread and confectionaries. He is also interested in food toxicology and works very closely with microbiologist.

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