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FIM 003

DEVELOPMENT OF WILD YEAST STRAINS ISOLATED FROM SELECTED LOCALLY FERMENTED BEVERAGES FOR THE PRODUCTION OF WINE FROM DATE PALM FRUIT (*Phoenix dactylifera L.*).

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ABSTRACT

The study focused on the development of wild yeast strains isolated from selected locally fermented beverages for the production of wine from date palm fruit. The freshly produced locally fermented alcoholic beverages (pito, brukutu and palm wine) were obtained from FM area of Maitunbi, Minna, Nigeria and were transported to the Microbiology Laboratory of Federal University of Technology Minna for analysis, using ice-packed box. Seven distinct yeast isolates were isolated from these samples and identified using cultural and biochemical tests. The yeast isolates were screened for their ability to flocculate, produce killer toxins and H₂S, and tolerate varying temperature and ethanolic concentration. The isolates were also screened for their ability to produce wine. The isolate with the best characteristics and potential for wine production was selected for large scale wine production using standard typed yeast as control. The isolate was characterized using molecular methods. The result of this study showed that the yeast isolate obtained from locally fermented alcoholic beverages can also be used to produce wine on a large scale.

Keywords: Pito, burukutu, palmwine, ethanol, temperature, flocculate

FIM 004

Occurrence and Antibiotic Resistant Phenotypes of *Staphylococcus aureus* Isolated from Fresh and Fermented Milk in Parts of Nasarawa State, Nigeria

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ABSTRACT

This work was aimed at determining the occurrence and antibiogram of *Staphylococcus aureus* isolated from fresh and fermented milk samples in parts of Nasarawa State, Nigeria. In this study, a total of 180 samples comprising of fresh raw milk, bulk milk, *nono*, and *kindirmo* were collected over a period of 6 months (May to October, 2017). Standard microbiological procedures were employed in the isolation, identification, characterisation, and determination of the antibiogram of *S. aureus* from the milk samples. Characterisation of the *S. aureus* isolates was by morphological, biochemical characteristics using conventional methods, Microgen® STAPH-ID kits. Confirmed isolates were tested for susceptibility or resistance to a panel of 11 commonly used antibiotics using the agar disc diffusion technique. Out of the 180 milk samples examined, 9 *S. aureus* were isolated giving a prevalence of 5.0%. The occurrence of *S. aureus* was higher in *nono* (12.1%) and *kindirmo* (10.6%) than in fresh raw milk (5.9%). The high occurrence of *S. aureus* in *nono* disproved the assertion that fermented foods are not good media for the survival and growth of *S. aureus*. The antibiotic susceptibility profile of the *S. aureus* isolates to 11 antibiotics indicate that, majority of the isolates were highly susceptible to gentamicin (100.0%), ciprofloxacin (100.0%), imipenem (88.9%), vancomycin (88.9%), and chloramphenicol (77.8%). The isolates were moderately resistant to tetracycline (44.4%), erythromycin (22.2%), and sulphamethoxazole/trimethoprim (22.2%). All the 9 *S. aureus* isolates were resistant to ceftioxin, ampicillin, and amoxicillin/clavulanic acid. This study recorded 5 antibiotic resistance patterns among the *S. aureus* isolates. All the isolates had a multiple antibiotics resistance (MAR) index of 0.3 and above, an indication of possible antibiotic misuse in the areas.

Key words: Milk, *Staphylococcus aureus*, Antibiotic resistant phenotypes, Nasarawa State, Nigeria.

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