

---

## **A survey of the microflora of *Hibiscus sabdariffa* (Roselle) and the resulting “Zobo” juice.**

**Omemu, A. M., Edema, M. O.**

Department of Microbiology, University of Agriculture, PMB 2240, Abeokuta, Ogun State, Nigeria

**Atayese, A. O.**

Department of Physics, University of Agriculture, PMB 2240, Abeokuta, Ogun State, Nigeria

### **Abstract**

The dried calyx of *Hibiscus sabdariffa* (Roselle) is locally processed into a non-alcoholic drink known as ‘Zobo’ in Nigeria. This popular drink is quite cheap compared to other bottled soft drinks but its acceptability is still limited because of its very short shelf life (24 h at room temperature). The composition and numbers of the microflora of the dried calyx of the Roselle plant and its resulting juice (Zobo) were examined using standard microbiological methods. The dried calyx obtained from a retail market was processed into juice that was compared with commercially sold (retail) juice. The microorganisms isolated from the dried calyx and the juices included the fungi, *Aspergillus niger*, *Aspergillus flavus*, *Rhizopus oligosporus*, *Penicillium citrinum*, *Mucor* spp., *Saccharomyces cerevisiae*, and *Candida krusei*, while *Bacillus subtilis*, *Pseudomonas* spp., *Staphylococcus aureus*, *Streptococcus faecalis*, *Escherichia coli*, *Proteus mirabilis*, *Serratia* spp., *Lactobacillus brevis* and *Lactobacillus fermentum* represented the bacterial isolates. Viable counts ranged from  $0.4 \times 10^4$  to  $3.2 \times 10^4$  cfu/ml. Aerobic and anaerobic bacterial counts were higher in the retail juice ( $1.1$  to  $2.2 \times 10^4$  cfu/ml) than in the laboratory-prepared juice ( $0.8$  to  $1.4 \times 10^4$  cfu/ml) while the dried calyx had the highest fungal counts of  $3.2 \times 10^4$  cfu/ml. pH of the juices ranged between 2.67 and 2.77 while total titratable acidity values were between 0.02 and 0.08.