



Production, Chemical Properties and Sensory evaluation of Wine from blends of Gaper (*Vitis vinifera*) fruit, Pawpaw (*Carica papaya*) fruit and Tiger nut (*Cyperus esculentus*)tuber

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Abstract : Production of wine from sources other than grapes encourages wine makers as much as availability of different styles of wine. Pawpaw (*Carica papaya*) is a tropical fruit commonly known for its nutritional and phytochemical values. Tiger nut (*Cyperus esculentus*) is a high-yielding, readily-available tuber which has lots of dietary and medicinal values. In this study, wine was produced from different blends of juice from grape (*Vitis vinifera*) fruit, pawpaw fruit and tiger nut tubers; and the quality of the wine evaluated. Healthy fruits and tiger nut obtained from a market in Ebonyi State, Nigeria were washed with clean water and ground with an electric blender until a homogenous pulp was obtained. Water (100cm³) was added to equal amount of each pulp and the mixture was filtered using a muslin cloth to obtain the juice. A solution of sugar in water (200g in 70cm³), 0.90g of *Saccharomyces cerevisiae*, ammonium phosphate (0.60g) and potassium phosphate (0.60g) were added and the mixture was allowed to ferment for 6 days (primary fermentation). The temperature, pH, specific gravity, total titrable acidity, and sugar level of the sample were determined after every 12 h. The wine was racked and allowed to ferment for 14 days (secondary fermentation). It was then left to clarify for three months. The clarified wine was left to mature for 6 months before the final physico-chemical and sensory evaluation were carried out. The results of the analysis revealed that the temperature of all the wine samples was 28.0°C. Grape and pawpaw wine had pH of 3.70, alcohol content of 17.00%, total acidity of 0.86% residual acidity of 0.32%, volatile acidity of 0.54% and specific gravity of 0.9776. Pawpaw and tiger nut wine had pH of 3.95 alcohol content of 16.06%, total acidity of 0.59%, residual acidity of 0.14%, volatile acidity of 0.255 and specific gravity of 0.9810. Grape, pawpaw and tiger nut wine had pH of 3.78, alcohol content of 17.81% total acidity of 0.72%, residual acidity of 0.30%, volatile acidity of 0.51% and specific gravity of 0.9760. Grape and tiger nut wine had pH of 3.90, alcohol content of 18.65% total acidity of 0.78%, residual acidity of 0.30%, volatile acidity of 0.48% and specific gravity of 0.9745. Although these values were comparable to those reported of good fruit wines, the highest alcohol content was obtained from a blend of grape and tiger nut juice. The sensory evaluation revealed that the attributes of the wines were acceptable to the majority of the respondents.

Key words : Pawpaw, Tiger nut, Grape, Fruit wines, Fermentation, Sensory evaluation.

Ohoke Francis O *et al* / International Journal of ChemTech Research, 2019,12(6): 17-27.

DOI= <http://dx.doi.org/10.20902/IJCTR.2019.120603>
