**R**esearch **P**aper

# Studies on the physico-chemical properties on wine in different varieties of grapes

■ VEENA JOSHI, B. SRINIVAS RAO[1] **AND** R. SUBHASH REDDY[2]

**Members of the Research Forum**

**Associated Authors:**
[1]AICRP on Sub Tropical Fruits (Grape), Grape Research Station, Dr. Y.S.R. Horticultural University, Rajendranagar, HYDERABAD (A.P.) INDIA
Email : headgrs_rnagar@drysrhu.edu.in

[2]Department of Agricultural Microbiology and Bioenergy, Acharya N.G. Ranga Agricultural University, Rajendranagar, HYDERABAD (A.P.) INDIA

**Author for correspondence** :
**VEENA JOSHI**
AICRP on Sub Tropical Fruits (Grape), Grape Research Station, Dr. Y.S.R. Horticultural University, Rajendranagar, HYDERABAD (A.P.) INDIA
Email : drveenahorti@gmail.com

**ABSTRACT :** Thirteen grape varieties (8 coloured and 5 white) were evaluated for their suitability to wine making under semi- arid tropical conditions of Hyderabad, Andhra Pradesh, India. All the physico-chemical properties of wine (TSS, total sugars, reducing sugars, titrable acidity and volatile acidity) showed a declining effect upon aging, except the alcohol content which showed an increasing effect upon aging. TSS content was minimum in cultivar Shiraz (7.93 $^0$B) attributing to higher fermentability and maximum utilization of sugars. Total sugar and reducing sugar content of wine was found to be minimum in cvs. Shiraz, Cabernet Sauvignon and Chenin Blanc. Titrable acidity of wine in different cultivars ranged from 0.34 – 0.79% with highest in variety Chenin Blanc and lowest in Ruby Red. Volatile acidity of wine in different varieties ranged from 0.010 to 0.065% with maximum in Ruby Red and minimum in Symphony. Alcohol content of wine varied from 8.78 % to 12.25%, maximum content was recorded in Shiraz, Chenin Blanc and Cabernet Sauvignon varieties. The overall results suggest that, the varieties Shiraz, Cabernet Sauvignon among the coloured varieties, Chenin Blanc from the white varieties were found suitable for commercial growing.

**KEY WORDS :** Grape, Wine, Aging, TSS, Sugars, Acidity, Alcohol

**HOW TO CITE THIS ARTICLE :** Joshi, Veena, Srinivas Rao, B. and Reddy, R. Subhash (2013). Studies on the physico-chemical properties on wine in different varieties of grapes, *Asian J. Hort.*, **8**(1) : 174-178.

**W**ine is considered as a health drink and has been used as an important adjunct to the diet and has many medicinal and therapeutic values due to the presence of anti-oxidants which cure most of the human ailments especially the cardio vascular diseases (Joshi and Sharma, 2004). Wine is the fermented product known to the man kind since time immemorial. However, the production of wine is negligible in India, due to limited domestic consumption and non availability of standard wine varieties to produce good quality wine of international standards. In India, remarkable success has been achieved in table grape production and much emphasis was not given for research on enology. As most of the commercial grapes grown in our country are table varieties, when used for wine making, result in poor quality. Further, physico-chemical properties of wine vary according to the variety and environmental conditions of the region in which the grapes are grown. Hence it was proposed to study the physico-chemical properties of wine produced from different grape varieties grown in Hyderabad region, Andhra Pradesh for their suitability to wine making and commercial growing.

## RESEARCH METHODS

The investigation was carried out at the Department of Horticulture, College of Agriculture, ANGRAU, in collaboration with Grape Research Station, Rajendranagar, Hyderabad, Andhra Pradesh, India. The soil of the vineyard is texturally classified as red sandy loam consisting sand 69.9 %, silt 8.2 % and clay 18.9 %. The chemical properties of these soils are pH 6.2, EC 0.16 dSm$^{-1}$, Organic carbon 1.60%. The varieties selected for the study were five years old grown on own roots, planted at 14 ft x 7 ft spacing and trained on an overhead bower. Crop harvested during March- April of 2007 and 2008 was used for the above study. The experiment was laid out in Completely Randomized Design (CRD) with 13 grape varieties as treatments in three replications, of which 8 were coloured *viz.*, Zinfandel,