

Performance of various grape wine varieties on yield and fruit quality attributes

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ABSTRACT

Twelve wine grape (*Vitis vinifera* L.) cultivars were evaluated for yield potential and fruit quality parameters. Which were four years old vines as own rooted cuttings, yield differences among the varieties were inconsistent. Whereas, significantly maximum yield was recorded in Chenin Blanc (12.19 kg/ vine ; 27.09 MT/ha) followed by Cabernet Sauvignon (11.12 kg/ vine; 24.71 MT/ ha). However, the number of bunches per vine were highest in Cabernet Sauvignon (93.14) followed by Chenin Blanc (91.80). But the average weight of bunch was recorded highest in Cabernet Franc (147.76 g) followed by Ugni Blanc (135.60 g), Grenache (133.05 g) and Chenin Blanc (132.83 g). However, the poor performance with respect to yield components were recorded in Pinot Meunier (2.27 kg/ vine ; 5.04 MT/ ha) Merlot (2.28 kg/ vine ; 5.07 MT/ ha). As the quality is concerned, the non-significant difference was seen in total soluble solids, which was maximum in Cabernet Sauvignon (22.60 °Brix) and minimum in Viognier (20.53 °Brix). The high titrable acidity was recorded in Chenin Blanc (0.94 %) which was *at par* with Chardonnay (0.91 %), the low acidity was obtained in fruits of Viognier (0.76 %), whereas, the highest TSS: acidity ratio was recorded in Cabernet Sauvignon (28.03) and the lowest in Chenin Blanc (23.13). The overall results suggest that, the varieties Cabernet Sauvignon, Cabernet Franc and Syrah among coloured grapes, Chenin Blanc and Ugni Blanc among white grapes were found suitable for commercial growing.

Key words : Grape wine, Yield, Fruit quality.

Most of the grape cultivars grown in India were of table purpose, however the remarkable success was achieved in table grapes, there is a lack of research in development of grape varieties for the purpose of wine production. For this, to meet the international standard in both yield and quality of wine grape variety has become essential. However, the yield and fruit quality of grapes differ with variety and location of cultivation. Hence, the research work was initiated on twelve different coloured and white wine grape varieties to identify suitable cultivars in terms of high yield and quality fruits for extensive adoption in the country.

MATERIALS AND METHODS

The research work was carried out at the orchard of All India Co-ordinated Research Project on Grapes, Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra during 2006–07. The experiment was laid out in Randomized Block Design (RBD) with twelve grape wine varieties. Of these, seven varieties were coloured *viz.*, Cabernet Sauvignon, Cabernet Franc, Pinot Noir, Merlot, Pinot Meunier, Syrah, Grenache and five were white *viz.*, Viognier, Ugni Blanc, Sauvignon Blanc, Chardonnay and Chenin Blanc as treatments with three replications. Varieties selected for the study were introduced on

traditional grape growing countries like France, Germany etc. which were suitable for wine making. Observations on yield and fruit quality were recorded as indicated by Suresh *et al.* (1985) Ranganna (1986) and Fidelibus *et al.* (2006).

RESULTS AND DISCUSSION

The results obtained during investigations regarding yield and quality of different wine grape varieties are presented in Table 1.

Yield attributes :

Number of bunches per vine :

Significant differences were obtained in terms of number of bunches, where the maximum number were recorded in Cabernet Sauvignon (93.14) and Chenin Blanc (91.80) which were *at par* with each other and were significantly superior over all other varieties studied. The minimum number of bunches per vine were recorded in Pinot Meunier (17.35) which was *at par* with Merlot (19.65), Chardonnay (20.06) and Sauvignon Blanc (25.74). All other varieties exhibited the average range of 40 to 60 bunches per vine. These results are similar to the reports of Martin *et al.* (2006).

Average bunch weight :

The average bunch weight was not much differed