

## Comparative studies on vine vigour and fruitfulness of grape wine varieties

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### ABSTRACT

Total twelve wine grape varieties were studied for vine vigour and fruitfulness. Varietal differences were obtained in vine vigour attributes such as pruning weight, number of canes, internodal length, cane diameter, length of cane and number of internodes in case of seven coloured and five white varieties. The variety Chenin Blanc recorded maximum vine vigour in terms of pruning weight (2.93 kg/vine), number of canes (52.44) and internodal length (4.26 cm). However, the cane diameter (0.69 mm), cane length (54.40 cm) and number of internodes (19.13) were maximum in varieties Grenache, Cabernet Sauvignon and Chardonnay, respectively, while Merlot showed the lowest vine vigour with pruning weight (0.44 kg/vine), number of canes (17.72) and cane diameter (0.43 cm). The maximum fruitfulness was recorded by Chenin Blanc (95.02%) followed by Syrah (93.30%) and Pinot Noir (90.99%) whereas, Chardonnay had the minimum fruitfulness (51.23%) followed by Merlot (61.76%).

**Key words :** Grape wine, Vine vigour, Fruitfulness.

Grapes (*Vitis vinifera* L.) is majorly grown for wine making throughout the world. In India remarkable success has been achieved in table grape production and yield levels are also high as compared to major grape growing countries in the world. However, the production of wine from grape is negligible, due to limited domestic consumption of wine and non availability of standard wine varieties to produce quality wines, less attention was given towards research on enology and viticulture in India. It is need of the present situation to undertake the research for screening of grape wine varieties for growth, yield and fruit quality parameters. The studies have been conducted on vine vigour and fruitfulness of various wine varieties of grapes.

### 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 viz., Cabernet Sauvignon, Cabernet Franc, Pinot Noir, Merlot, Pinot Meunier, Syrah, Grenache, Viognier, Ugni Blanc, Sauvignon Blanc, Chardonnay and Chenin Blanc as treatments with three replications. Of these, seven grape varieties were coloured and five were white. Varieties selected for the study were introduced for traditional grape growing countries like France, Germany and South Africa which were suitable for wine making.

Observations on vine vigour and fruitfulness were recorded as indicated by Fawazi *et al.* (1984) and Reddy *et al.* (1992) with some necessary modifications.

### RESULTS AND DISCUSSION

The results obtained during investigations regarding vine vigour and fruitfulness of different grape wine varieties are presented in the Table 1.

#### *Vine vigour :*

##### *Pruning weight :*

There was significant difference in pruning weight per vine of different grape varieties studied. The significantly highest pruning weight per vine was recorded in Chenin Blanc (2.93 kg) which was *at par* with Ugni Blanc (1.83 kg), Grenache (1.55 kg) and Cabernet Sauvignon (1.54 kg). The lowest pruning weight per vine was recorded in Merlot (0.44 kg), followed by Pinot Meunier (0.72 kg), Pinot Noir (0.78 kg) and Chardonnay (0.83 kg). Benz *et al.* (2006) judged vine vigour on the basis of pruning weight.

##### *Number of canes per vine :*

It was observed that the variety Chenin Blanc had significantly more number of canes (52.44) followed by Cabernet Sauvignon (30.26), Grenache (29.99) and Syrah (29.41). The variety Pinot Meunier had the lowest number of canes (17.30) which was *at par* with Merlot (17.72) and Chardonnay (18.06). These differences in the number of canes might be due to the differences in vigour of the varieties under study.