

Studies on leaf morphology and vine vigour of various grape wine varieties

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ABSTRACT

Total Fifteen grapewine varieties were studied for leaf morphology and vine vigour. Varietal differences were observed in leaf morphological characteristics such as leaf colour, length, width, area and size in case of 9 coloured and 6 white varieties. The leaves of Bangalore Purple recorded maximum leaf length (16.42 cm), width (16.74 cm), leaf area (180.13 cm²) while, Pinot Meunier had the lowest leaf area (68.93 cm²). These varieties had either green or dark green colour of the upper leaf surface. However, all of them had lower leaf surface of light green colour. Vine vigour in terms of pruning weight per vine, showed that Muscat of Alexandria recorded the highest pruning weight (2.42 kg/vine) whereas, Pinot Meunier, Arka Shyam, Merlot and Pinot Noir had low vine vigour. The high vine vigour was recorded in Muscat of Alexandria had the highest number of canes per vine (30.80).

Key words : Grape wine, Leaf morphology, Vine vigour.

Grape (*Vitis vinifera* L.) is grown mostly for wine making in the world. In India the 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 of grape is negligible, due to limited domestic consumption of wine and non availability of standard wine varieties to produce good quality of wine at international standards, much emphasis was not given for research on enology and viticulture in India. It is a need of the day to undertake the research for evaluation of grape wine varieties for vine vigour, yield and quality. The present investigation was undertaken to study leaf morphology and vine vigour of various wine varieties of grapes.

MATERIALS AND METHODS

The investigation was carried out at Champagne Vineyards Ltd., Narayangaon, Dist. Pune during 2001-2002. The experiment was laid out in Randomized Block Design (RBD) with 15 grape wine varieties, viz. Arka Shyam, Bangalore Purple, Cabernet Franc, Cabernet Sauvignon, Grenache, Merlot, Pinot Noir, Syrah, Arkavati, Chardonnay, Muscat of Alexandria, Sauvignon Blanc, Ugni Blanc and Viognier as treatments with three replications. Of these, nine grape varieties were colored and six were white. Eleven varieties selected for the study were wine grape varieties introduced from traditional grape growing countries and the remaining four varieties, viz. Arka Shyam, Bangalore Purple, Arkavati and Muscat of Alexandria were the native grape varieties suitable for wine making. Observations on morphological

characteristics of leaves, vine vigour in terms of pruning weight and number of canes were recorded. The morphological characteristics of leaves of all the grape varieties were recorded as indicated by Chadha and Randhwa (1974) with some necessary modifications. Observations were recorded of full-grown leaves on 7th, 8th and 9th node from the base at 45 days after pruning.

RESULTS AND DISCUSSION

The results obtained during investigations regarding morphological characteristics of different grape wine varieties are given below.

Diversity in leaf morphology

Morphological characteristics of full grown leaves of the grape wine varieties studied are presented in the Table 1.

Colour :

The data reveals that the colour of upper leaf surface of Arka Shyam, Bangalore Purple, Arkavati, Ugni Blanc and Viognier was green, whereas, it was dark green in remaining grape varieties studied. The colour of lower leaf surfaces of all the varieties was light green. Varietal classification on the basis of leaf colour was also conducted by Molon (1906), Singh and Singh (1940) and Shirsath (1965).

Size :

Leaf lengths of the varieties were found within the range of 10.42 cm (Pinot Meunier) to 16.42 cm (Bangalore Purple) and the leaf widths were in the range of 9.40 cm (Arkavati) to 16.74 cm (Bangalore Purple). These results