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Growth and quality parameters of grapes (cv. THOMPSON SEEDLESS) under low and high yielding vineyards in Bijapur Taluk

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ABSTRACT

A systematic investigation was conducted on growth and quality parameters of grapes (cv. THOMPSON SEEDLESS) under low and high yielding vineyards in Bijapur Taluk. The growth and quality parameter varied under low and high yielding vineyards. The cane girth of vines ranged from 0.30 to 0.44 cm and girth of fruiting shoot of vines ranged from 0.32 to 0.45 cm in the low yielding vineyards at 45 days after April pruning. In case of high yielding vineyards, cane girth of vines ranged from 0.35 to 0.47 cm and girth of fruiting shoot ranged from 0.38 to 0.55 cm. The total soluble solids (TSS) ranged from 18 to 24^{0}B and 19 to 25^{0}B with an average of 21.33 and 22.0^0 Brix of low and high yielding vineyards, respectively. In low and high yielding vineyards, the reducing sugar per cent ranged from 8.10 to 9.96 and 8.85 to 10.38 with a mean value of 9.51 and 9.81 per cent, respectively. The non-reducing sugar varied from 2.85 to 3.97 and 3.15 to 4.31 per cent with mean values of 3.46 and 3.73 per cent in low and high yielding vineyards, respectively. The total sugar content in low and high yielding vineyard berries varied from 10.95 to 13.93 and 12.04 to 14.69 per cent with a mean 12.98 and 13.56 per cent, respectively. The acidity of the berries in low and high yielding vineyards ranged from 0.40 to 0.89 and 0.39 to 0.82 per cent with an average value of 0.56 and 0.50 per cent, respectively. The sugar: acid ratio of berries in low and high yielding vineyards varied from 14.04 to 34.82 and 15.05 to 37.66 with mean values of 24.99 and 27.98, respectively.

Key words : Growth, Quality, Low yielding, High yielding, Vineyards

INTRODUCTION

Grape (*Vitis vinifera* L.) cv. THOMPSON SEEDLESS belongs to the family vitaceae, is perhaps the most widely cultivated fruit crop of the world in varying climatic zones extending from temperate to the tropics. Grape is cultivated over an area of 8.94 million hectares in the world with an annual production of 64.87 million tonnes (Chadha and Pareek, 1993). In India, it is cultivated over an area of 60 thousand hectares with an annual production of 16 lakh tonnes (Anonymous, 2005). In Karnataka an annual production of grapes was 3,07,664 tonnes during 2003. Grape cultivation in India has acquired greater significance due to its high productivity compared to many other grape producing countries in the world (Anonymous, 1989). Commercial viticulture in India is hardly a few decades old and major grape growing states are Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Punjab and Haryana. Among all the grape growing states, Maharashtra occupies the largest area (16,000 ha) followed by Karnataka (8,500 ha). As for as productivity is concerned Karnataka stands first followed by Maharashtra (Negi, 1999). Grape cultivation has assumed great significance in semi-arid region of Karnataka. Now, there is an increasing area under grape cultivation in Bijapur district. It has been experiencing decline in grape production also. Studies in the country have shown that the problem is mainly related to nutrient imbalance. Keeping these facts in view, a comprehensive study of growth and quality of grape in Bijapur taluk of Bijapur district was undertaken.

MATERIALS AND METHODS

A systematic investigation was conducted on growth and quality parameters of grapes (cv. THOMPSON SEEDLESS) under low and high yielding vineyards in Bijapur Taluk. The soils of the investigation site were shallow black, having alkaline pH and belongs to the Vertisol. Composite soil samples from a depth of 0 to 30 cm were collected in the low and high yielding vineyards before application of nutrients. Soil samples were also collected after October pruning for analysis. Sixty vineyards were surveyed during 2006-07. Out of sixty vineyards, thirty vineyards were selected based on previous year yield data for the purpose of collecting growth and quality parameters. The vineyards which produced less than 10 tonnes per acre were categorized as low yielding vineyards and vineyards produced more than 10 tonnes per acre were categorized as high yielding vineyards. The growth parameters *viz.*, girth of cane and girth of fruiting shoot were recorded by using vernier calipers between

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