

Effect of shade nets on berry growth and quality in Tas-A-Ganesh grapes

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ABSTRACT

Indian grapes are not competitive in the international market due to poor quantity. For production of quality grapes of International standard there is no need to improve the quality by different means like use of growth regulators cultural practices along with use of artificial shade nets for nourishing average size bunch nearly 15 leaves are required to a developing bunch and shade for maintaining its uniform green colour of berries. Shade nets may play important role in retaining the uniform berry colour in a bunch, which is an important criteria for berry quality in export grades. In the present study, the black shade nets of 50% and 75% cut found to be better to increase the bunch weight, average very weight, retaining chlorophyll content in the leaves and also to retain green colour of berries. Hence, it may be concluded that the black shade nets plays an important role when the canopy is limiting factor in the vineyards, which in turns increases exportable quality and quantity of grapes.

Key words : Shade nets, Berry growth, berry quality,
Tas-A-Ganesh grapes.

Grape is one of the commercially important fruit crop grown in India. Its major harvest is being used as table purpose with a limited use as a raisin, juice and wine. The fruit is exported to the Middle East countries, Europe, U. K., etc. Well filled bunches with uniform size and green colored berries, TSS content of 18^o Brix and 18 mm diameter of the berries are the basic requirement of the table grapes for export. These standards are achieved when bunches are protected from direct sunlight by providing appropriate canopy or artificial shades. The adverse of salinity build up resulted into reduced shoot vigor due to which bunches comes under direct contact of sunlight. Hence, the influence of sunlight on berry development and composition has been well documented during past few decades (Bergqvist *et al.*, 2001). The work done on this aspect in other country have found that sunlight exposed fruits are generally greater in total soluble solids while lower in berry weight compared to the non-exposed or canopy shaded fruits (Crippen and Morrison, 1986, Dokoozlian and Kliewer, 1996 and Reynolds *et al.*, 1986). Considering these facts, an experiment was conducted to study the effect of different shading materials on yield and quality of Tas-A-Ganesh grapes grafted on Dog Ridge rootstock.

MATERIALS AND METHODS

The experiment was conducted during the year 2000-2001 at growers field at Rahu, Pune (M.S.). Six-year-old

Tas-A-Ganesh vines (a mutant of Thompson Seedless) grafted on Dog Ridge rootstock planted in light soil were selected for the study. The vines were planted in North – South direction spaced at 9' X 5' distance. The vines were trained on flat roof gable system of training. All the standard cultural practices were followed during the season. At veraison stage, the bunches were covered with different covering material are as follows.

Treatment details:

T1 = Covering the bunches with gunny cloth of 6.0 oz,
T2 = Covering the bunches with gunny cloth of 7.0 oz,
T3 = Covering the row with black shade net of 75% cut,
T4 = Covering the row with black shade net of 50% cut,
T5 = Green net of 75% cut, T6 = Paper cover and
T7 = Control (without covering).

The clusters were harvested from uniform shoot vigor and diameter. The data was recorded on 50-berry weight, berry diameter, berry length, TSS, acidity, bunch weight, bunch weight, chlorophyll content of leaves, per cent dry matter of berries. The collective berry samples were macerated in a muslin cloth to extract and collect the juice in conical flask and determination of total soluble solids and acidity. With the help of hand refractometer total soluble solids was measured whereas 10 ml undiluted juice was taken to determine the titratable acidity by titration method using 0.1 N NaOH and was expressed in percent acidity. The fresh leaf samples were collected for estimation of Chlorophyll a, b and total chlorophyll was estimated by using DMSO (Dimethyl sulfoxide) as extractant. The data was analyzed as per Panse and