



Research Paper

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Effect of different pruning intensities on growth, yield, fruit quality and leaf macronutrient content of plum cv. SANTA ROSA

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ABSTRACT : The present investigation was carried on plum cv. SANTA ROSA to study the effect of different pruning intensities on growth, yield and fruit quality of plum at Regional Horticultural research station, Bajaura during 2009, 2010 and 2011. The experiments was laid out in a randomised block design with five replications. Four pruning treatments viz., unheaded, 25 per cent head back, 50 per cent head back and 75 per cent head back were given to six year old plants of plum cv. Santa Rosa. The maximum trunk girth (29.50 cm, 37.07 cm and 40.80 cm, respectively), shoot length (183.62 cm, 107.64 cm and 104.72 cm respectively) and fruit set (8.85 per cent and 17.40 per cent) were observed with 75 per cent headback during three years. The lowest trunk girth, shoot length and fruit set were observed with unheaded plants. However, the maximum yield (9.50 kg/tree, 10.00 kg/tree and 10.50 kg/tree, respectively) was obtained with unheaded plants during three years and the yield decreased with the per cent head back. The maximum fruit length (4.72 cm, 4.43cm and 4.26cm, respectively), breadth (4.86 cm, 4.48 cm and 4.17 cm, respectively) and weight (66.07 g, 55.60 g and 47.19 g, respectively) were obtained with 75 per cent head back and lowest with unheaded plants during three years. In unheaded plants yield were high but of poor quality. Whereas, in 75 per cent headed trees the quality was very good, but production was very low. Twenty five per cent head back resulted in good production and fruit quality. The leaf nutrient status was also affected by the different levels pruning intensities. Leaf nitrogen and potassium contents increased with the increase in severity of pruning, whereas leaf phosphorous content remained unaffected.

KEY WORDS : Pruning intensities, Plum, Fruit growth, Fruit yield, Quality

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Plum (*Prunus domestica*) is an important temperate zone fruit crop. It ranks next in importance to the peaches so far its commercial importance is concerned. The plum trees thrives well in the low hills and in the sub mountainous tracts where the high chilling requiring fruits like apple and cherry cannot be grown profitably. Plum is delicious juicy fruit prized both for its exquisite fresh fruit flavour and in the fruit preservation industry. Plums are used either as fresh dessert fruit or cooked. They are also canned, dried and made in to jam. Plums are also rich in sugars and carotenes. Santa Rosa is a commercial and only cultivar of plum grown in mid-hill zone of Himachal Pradesh. This cultivar bears

fruit laterally on one year's old growth and also heavily on spur (Childers, 1983). This cultivar also has a tendency to over bear and thinning of fruit is not possible as most of the plum growing areas in our state are prone to hail storms. There is a demand for large size fruits in the market and the size is usually regulated by growers with severe pruning. The total crop production with such heavy intensity of pruning is greatly reduced and this also results in excessive and undesirable growth. The present studies were therefore, carried out to standardize pruning intensity in young bearing trees of Santa Rosa.