



## Research Paper

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# Effect of shoot pruning and different planting systems on vegetative growth, yield and quality of guava cv. SARDAR

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**Abstract :** The present investigation was carried out on guava (*Psidium guajava* L.) cv. SARDAR during the years 2006-07 and 2007-08 to investigate the effect of different shoot pruning levels and planting systems on shoot emergence, number of fruits per tree, fruit yield and fruit quality. The treatment consisted of two shoot pruning levels *i.e.* one leaf pair shoot pruning, unpruned (control), and five planting systems *i.e.* square system, hedgerow system, double hedge row system, paired system and cluster system of planting. Thus, there were ten treatment combinations replicated thrice in Factorial Randomized Design with single tree as a treatment unit. Findings revealed that one leaf pair shoot pruning significantly influenced the emergence of new shoot, fruit set (%), number of fruits per tree, yield (kg/tree) and fruit quality. In the year 2006-07, the maximum number of new shoots emerged (40.21) in cluster system of planting with one leaf pair shoot pruning during winter season, while in the year 2007-08, the maximum number of new shoots emerged (41.83) in double hedge row system of planting with one leaf pair shoot pruning during winter season when compared with other treatment combinations. More number of fruits per tree was found in rainy season with control treatment while, it was maximum in winter season with one leaf pair shoot pruning during both the years. In one leaf pair shoot pruned trees; yield was significantly less than the unpruned trees in rainy season whereas, yield was significantly more in one leaf pair shoot pruned trees than unpruned trees in winter season. Fruit yield per tree increased with decrease in plant population per unit area. Wider spacing gave higher fruit weight, size, TSS, acidity, ascorbic acid and TSS: acid ratio of guava fruits than closer spacing.

**Key words :** Guava, Shoot pruning, Planting systems, Growth, Yield, Quality

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**G**uava (*Psidium guajava* L.) 'the apple of the tropics', is one of the most important fruit crops grown in India. It belongs to the family Myrtaceae. The guava fruit has gained a considerable prominence on account of its high food value, a pleasant aroma, rich flavour and availability in the market at moderate prices (Bal and Dhaliwal, 2003). In general, guava bears in three seasons namely rainy, winter and spring seasons in a year. Under Tarai conditions, guava trees produce 90 per cent crop in rainy season, 8-9 per cent in winter season and 1-2 per cent in spring season (Lal, 1992). Fruits of rainy season crop are insipid, poor in quality, less nutritive and are also attacked by insect pests and diseases. On the other hand fruits of winter season crop are superior in quality, comparatively free from diseases and insect pests and fetch higher prices in the market (Rathore and Singh, 1976).

Recently shoot pruning have been reported to be successful in regulating the crop of guava in spite of that reduces the tree size and improves the fruit quality. This gives an opportunity to increase the number of trees per unit area (Lal *et al.*, 2000). Very scanty information is available regarding shoot pruning and planting systems in guava, therefore, an experiment was initiated to study the effect of shoot pruning and different planting systems on growth, yield and quality of guava cv. SARDAR.

## RESEARCH METHODS

The experiment was conducted at the Horticulture Research Centre, Patharchatta of G.B. Pant University of Agriculture and Technology, Pantnagar during the year 2006-