CHAPTER I

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The guava (Psidium guajava) belongs to the family Myrtaceae and is one of the most important fruits of our country. Though it has its origin in Tropical America, but at present, it is very extensively grown in tropical and subtropical regions of the world. Uttar Pradesh is the most important guava producing State of India and Allahabad has the reputation of growing the best guava in the country (Singh et al., 1963). Allahabad is specially known for the guava with the world famous variety Allahabad Safeda (Hayes, 1957).

Guava (Psidium guajava) has very high nutritive value and can thrive well even under adverse soil and climatic conditions. Cheema et al. (1954) reported that guava bears fruit more than once a year. The fact is that it produces as many as three crops in a year. Production of two or three crops during a year is in itself a unique phenomenon.

In Northern India, three distinct flowering seasons viz. summer, rainy and autumn have been reported by Rathore and Singh (1976). Guava bears fruit on new shoots. It is common experience that the quality of rainy season fruits is poor (Hayes, 1957). The winter crop of guava ripens when
there is scarcity of fresh ripen fruits in the market. In fact guava is readily available at cheaper rates from September to April under North India conditions. Due to this novel characteristics, people sometimes called it as "Poor man's" apple.

The rainy season crop starts ripening from July to September under North India conditions. However this crop is watery, insipid and poor in quality. The fruits have rough surface and suffer from the severe attack of fruit fly. The market value of rainy season guava is very low and it has also very poor keeping quality. Rainy season crop also exhaust plant energy considerably resulting in very poor winter crop (Teaotia and Pandey, 1970 and Kumar and Hoda, 1977). This gives little returns to the orchardists. If the vigour of plant could be stored during rainy season and utilised in winter season for the production of quality fruits, the profit of orchardists can very easily be multiplied. Only winter season crop is of commercial importance because the fruits are smooth, healthy, sweet in taste and from the all angles better in quality.

To regulate the cropping, specific cultural practises have been recommended. These practices include withholding irrigation after December and removing earth from around the upper roots and then returning the soil, mixed with manures around June, followed by irrigation till the rains have started.
In recent years various chemicals and plant growth regulators have been tried to regulate the winter season crop of guava. The spray of higher concentration of urea had defoliated the guava trees and increased the winter season crop considerably (Rajput et al., 1986). Several workers had sprayed zinc sulphate to improve the quality and yield of guava. Others have tried to achieve good crop with the spray of growth regulators. Foliar sprays of growth regulators at higher concentrations were found to cause abscission in guava. NAA at higher concentrations has thinned rainy season flower buds of guava, which ultimately increased the fruit set of winter season crop. The higher yield in winter season is mainly due to utilization of nutrients which was conserved in preceding season. After de-blossoming, the shoots started new growth which ultimately bore blossoms and fruits in ensuing winter season.

The results obtained at other places in this regard can not be recommended as such for Allahabad region, which is one of the famous guava belt in country. Therefore, a more comprehensive work to evaluate the efficacy of different treatments is of immense importance for regulating the cropping pattern of guava, cultivar Allahabad Safeda.

With these background in view an investigation was planned and executed to find out the effect of various concentrations of NAA, 2,4-D, urea and zinc sulphate on the crop regulation of guava under Allahabad conditions. The
The major objectives of the study are listed below:

1. To find out the suitable plant growth regulators to check the rainy season crop of guava, with a view to increase the per capita income from guava orchards.

2. To study the effect of different levels of chemicals and plant growth regulators on the overall improvement of guava cv Allahabad Safeda.

3. To study the effect of chemicals on the quality improvement of guava cv Allahabad Safeda.