ABSTRACT

Investigations on the present topic were conducted in the Faculty of Agriculture and Forestry, Guru Nanak Dev University, Amritsar during the cropping seasons of 2004-05 and 2005-06. The study was planned in two sets of experiments with a view to study the effect of protected conditions on plant and fruit characters of strawberry cv. Chandler and to evaluate the various strawberry cultivars under field conditions. In the Expt I, two times of planting (T₁: Oct 12 & T₂: Oct 26), four protected conditions (P₁: white polytunnel 100 gauze, P₂: white polytunnel 200 gauze, P₃: reed cover and P₀: open field control) were tried, three concentrations of GA₃ (25, 50 & 100 ppm) treatments were also applied as foliar spray in the first week of flowering to access the plant and fruit characteristics of strawberry cv. Chandler. For Expt II, runners of five cvs. Chandler, Tioga, Fern, Selva and Blackmore were planted on three different times (T₁: Oct 15, T₂: Oct 30, T₃: Nov 15) under field conditions at Amritsar. In this experiment plant characteristics, flowering observations, physical and biochemical fruit characteristics were studied to observe the effect of time of planting on the above aspects of plants. In Expt I, time of planting, protected conditions and treatments of GA₃ influenced the plant and physico-chemical characters of strawberry fruits. Maximum plant height, number of shoots, number of leaves, leaf area, runner production duration of flowering, number of flowers plant⁻¹, number of fruits plant⁻¹, fruit set percentage and yield were obtained from plants of T₁ (Oct 12) plantation under P₁ protected condition. GA₃ 100 ppm treatment also encouraged these parameters. The treatment combination T₁, P₁ and G₃ resulted in larger and heavy weighted strawberries with good colour development which also secured high organoleptic scoring. This treatment combination also resulted in strawberry fruits with maximum TSS, sugars and ascorbic acid contents while the titrable acidity level was registered minimum. In the Expt II out of the three time of planting, T₁ planting time resulted in maximum plant establishment, leaf number plant⁻¹ days taken for flower initiation, number of flowers plant, fruit number and yield plant⁻¹ followed in line by T₂ and T₃ planting times. Large sized, heavy strawberry fruits with good colouration and organoleptic score were produced in plants of T₁ planting, TSS, sugars, ascorbic acid contents of fruits were also found maximum in fruits from T₁ planting time. Amongst the strawberry cultivars under study cv. Chandler was found to be most suitable cultivar followed by cvs. Blackmore and Tioga which can be adopted to the Amritsar’s agro-climatic conditions. The plant characters of cvs. Chandler and Blackmore viz. plant height, shoot number, leaf number, leaf area, number of runners, duration of flowering, fruit set, per cent fruit set, yield, fruit colour were adjudged better than all other cultivars tried. The fruits of these cultivars were also of large size and heavy with good colour development, good acceptable maturation and secure good grading. TSS level, sugar and ascorbic acid contents of these cvs. were also found significantly better than the other three cultivars under trials. The fruits of cvs. Fern and Selva were not up to the acceptable quality, even from the P₁ plantation during both the seasons of study.