

Study on the optimum planting density of apple cv. Golden Smoothy on M9 rootstock

M. Mostafavi

Seed and Plant Improvement Institute, Karaj.

This study was conducted to determine the optimum planting density for high density planting of apple cv. Golden Smoothy budded on M₉ rootstock. This study which was conducted for the first time in Iran was carried out on a randomized complete block design, with four treatments as follows:

1- high density planting of single row with a planting distance of 2 m between trees and 3 m between rows (3×2) with a planting density of 1666 trees/ha.

2- high density planting of single rows with a planting distance of 1.25 m, in the row and 3 m between rows (3×1.25m) with a planting density of 2667 trees/ha.

3- high density planting of double rows with a planting distance of 1.48 m in the row, and 1.45 m between rows and 3 m between double rows (3×1.45m) × 1.68, and a planting density of 2675 trees/ha.

4- high density planting of triple rows, spacing between 3 rows in 90 cm, distance between trees in 1.75 m and distance between triple rows is 3m, and a planting density of 3571 trees/ha.

results of the 3-years experiment showed that in 1992, the trees only have vegetative growth and formation of main branches and fruit bud initiation for the following year. While in the second year, in addition to vegetative growth of apple cv. Golden Smoothy on rootstock M₉, yield started at 2.5 to 6.5 trees/ha depending on the planting density per unit area out in the third year, yield of 2.5 to 6.5 trees/ha at a planting of 1666 trees/ha and around 18 trees/ha for planting density of 3571 trees/ha were obtained from trees budded from rootstocks derived from seeds. Whereas yields of more than 10 trees/ha were obtained from 10-year old trees budded from rootstocks derived from seeds.

In all replications, mean fruit weight is above the standard fruit weight and mean fruit weight varied from 148 gr to 157 gr, Growth and development of one-year old branches, trunk diameter, fruit volume, sugar content, acidity, Vit.C. and dry matter contents, fruit compactness will be further studied.