

Vegetative and Yield Behavior of ‘Golab-kohans’, ‘Fuji’, ‘Gala’, ‘Starking’ and ‘Delbar estival’ Apple Trees Trained to V-Shape System (پوستر)

احمد داداش پور (۱)، علیرضا طلائی (۲) و صادق حسینی (۳)

۱- دانشجوی کارشناسی ارشد، ۲- عضو هیئت علمی و ۳- کارشناس باغبانی دانشکده کشاورزی دانشگاه تهران، واحد کرج

ABSTRACT

This paper presents the results of trials carried out in an apple orchard situated in the horticultural research center of tehran university of Iran. Within trials, we compared many vegetative and yield characteristics of five apple cultivars. Trials were conducted on the cultivars ‘Golab-kohans’, ‘Fuji’, ‘Gala’, ‘Starking’ and ‘Delbar estival’ grafted on M.9 trained in a V system. All the trees were planted in winter 2005. Since the second year after planting, trees were drip irrigated. Early results obtained show that ‘Golab-kohans’ has the greatest tree height (278/63cm), shoot growth (100/588 cm) and TCA (7/308 cm²). Addition, ‘Golab-Kohans had the lowest yield efficiency (0/035 kg/cm²) and yield per tree (0/287) But ‘Delbar estival’ had the greatest yield per tree (0/98 kg) and yield efficiency (0/550 Kg/cm²).

INTRODUCTION

Research on apple trees using dwarf rootstocks in intensive planting system has been carried out in different countries. In general, the results obtained have shown a positive relationship between trees vegetative characteristics and yield and sometimes negative relationship about mentioned characteristics in above (Strikic et al., 2007). Our goal in this paper was to study the behavior under our climate and soil conditions of five apple cultivars grafted on dwarf rootstock (M.9) in a V system.

MATERIALS AND METHODS

The research was carried out between 2006-2007, in an apple plantation in Karaj, in center of Iran. Five apple cultivars were included: ‘Golab-kohans’, ‘Fuji’, ‘Gala’, ‘Starking’ and ‘Delbar estival’.

The cultivars were grafted onto M.9. The trees were trained as V system. The four replicates were arranged in a randomized completely block design (RCBD). Annual data on trunk girth, shoot growth, tree height, yield per tree and yield efficiency were recorded. The following data were calculated: trunk cross sectional area (TCA) and yield. Data were analyzed statistically by the Duncan multiple range test (P<0.01).

RESULTS

In the investigated cultivars, the greatest tree height, shoot growth and TCA were obtained in ‘Golab-kohans’ whereas this cultivar had the lowest yield per tree and yield efficiency compared with other cultivars. Although ‘Delbar estival’ had the greatest yield and yield efficiency but had the lowest tree height, shoot growth and TCA compared with other cultivars investigated in this study. The first production was obtained one year after planting, but this was relatively poor. By the secondary year after planting, the greatest yield/tree and yield efficiency were obtained on ‘Delbar estival’. Yield ranging was between 0.287-1.482 kg/tree. With irrigation and new cultivars grafted on dwarf rootstock, apple orchards with densities greater than 1250 trees/ha can be planted. Our research on ‘Golab-kohans’, ‘Fuji’, ‘Gala’, ‘Starking’ and ‘Delbar estival’ cultivars grafted on M.9 showed that trees began to bear fruit in the second year, with yield increasing in the subsequent year. ‘Golab-kohans’ is a more vigorous cultivar compared

with other cultivars. The V system /M.9 combination permitted early fruiting, confirming previous study. Regard to results, probably 'Golab-kohans' because of its early fruit harvest had later opportunity for vegetative growing, resulted to more vegetative characteristics. 'Delbar estival' is a prone cultivar in V system in our climate condition but for better announcement, we should wait for new results in later years.

Literature Cited

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