

Title Investigation on cold storage capacity of early and mid ripening apple cultivars of Iran

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Abstract

Fruit growers choose mostly late cultivars for new orchards. The cultivation of early cultivars, produced commonly for fresh consumption, is impeded by the limited storage capacity due to genetic and biochemical factors. Frequently, genetic variability seems to be neglected. The intent of this research was individuation of early and mid early native cultivars with acceptable storage capacity. Other researches were focused more on late native cultivars (Hajnajari et al. 2008). In order to determine the cold storage genetic capacity of, 15 early and early and mid ripening apple commercial cultivars located in Kamal abad Research station (Karaj-Iran) were harvested in physiological stage of maturation. The harvested fruits were tested in all quantitative and qualitative characters and transferred in cold room at 0°C, organized in Complete Random Design with 3 repetitions, in 2008. The decreasing variations in weight, chemical properties (TA, TSS, pH) together with sensorial analyzes were regularly measured in monthly intervals. The results showed that the native mid and early cultivars 'Asali' and 'Mashad Nouri' after 4 temporal intervals exhibited 5% weight loss, but some chemical properties like TA decreased correspondingly 81% and 31% while pH from 17% to 10%. 'Golab-e Isfahan' and 'Mashad Nouri' showed the highest changes with 8% increment in TSS. 'Mashad' and 'Ghandak-e Kashan' showing only 45 days of cold storage capacity, were individuated as the weakest cultivars in this regard. 'Sheikh Ahmad' kept the eating qualities in sensorial analyzes after 3 monthly intervals. 'Sheikh Ahmad', 'Golab-e Isfahan', 'Mashad' and 'Mashad Nouri' are included in the series of 10 cultivars to be registered in national cultivar registration of Iran.