

Title Comparison of the pectin biosynthesis in local cultivar Azayesh and some apple commercial cultivars as affected by pH and carbohydrates content

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Abstract

In order to study the characteristics of commercial apple cultivars grown under climatic conditions in karaj (Tehran province, Iran), 32 different characters were evaluated in 30 native Iranian and introduced cultivars based on Apple Descriptor (Hajnajari et al. 2008). During 2008, in the complementary studies, some of the important pomological characteristics such as: weight, shape, skin and flesh colour and other physicochemical characteristic including: pectin content, carbohydrates, pH, total soluble solid (TSS), titrable acidity (TA), flesh firmness of 'Golden Delicious', 'Red Delicious', 'Granny Smith' and a very dwarf native Iranian crab cultivar known as 'Azayesh' were measured. All of the pomological evaluations were done at the fruit ripening phase. Other researches were carried out during 2005-2008, in order to evaluate the genetic variability within 37 local and 70 Introduced commercial cultivars of apple in Karaj (Hajnajari et al. 2008). The data were analyzed by SAS, and mean comparison of physicochemical characteristics showed that 'Granny Smith' and 'Azayesh' had relatively the highest levels of pectin, and there was noted significant difference between them and 'Golden Delicious' or 'Red Delicious'. Supplementary studies showed that pectin biosynthesis was inversely correlated to the carbohydrates content and pH in all the tested cultivars.