Title Difference in sugar content of fruit harvested in different month pineapple and its relation to sucrose metabolism

Author X.P. Zhang, L. Du , Y. Yao, J. Li, M.A. Dou and G.M. Sun

Citation Souvenir Programme, 7th International Pineapple Symposium 2010. 13-15 July, 2010, Persada Johor International Convention Centre, Johor Bahru, Johor, Malaysia. 126 p.

Keyword Pineapple; different seasons; sugar accumulation; enzymes; sucrose metabolism

Abstract

The fruit growth and development were different among the fruits harvested in different seasons. The growth of fruit harvested in February was a non-typical single 'S' pattern (fastslow model) and the growth of fruit harvested in July presented a typical single 'S' pattern (slow-fast-slow model), and the maturation period of the latter was shorter than the former by 40 d. The harvest period had an effect on the 'Smooth Cayenne' fruit sugar accumulation. In the winter fruit harvested in February, exhibited the ratio of hexose to sucrose to be 0.37 with mainly sucrose been accumulated. Whereas in summer fruit harvested in July, the ratio was 5.92 and more hexose was accumulated. There was significant different of sugar accumulation and sucrose metabolism enzymes between fruits harvested in February and July. The activities of SPS and SS synthetic direction in fruits harvested in February were significantly higher than those in July, whereas the invertase activities in fruits maturated in February was significantly lower than those in July. This profile of sucrose metabolism enzymes was favorable to sucrose accumulation for fruits harvested in February. The ascending invertases made fruits maturated in July accumulate less sucrose and more hexose.