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The Change of Sugar Content and Sucrose Synthetic Enzyme Activity during Fruit Growth in Eggplant (*Solanum melongena* L.) under Different Polyethylene Mulches

Hee-Ock Boo[1]*, Sang-Uk Chon, Sook-Young Lee[1], Young-Cheol Um[2], and Jung-Soo Lee[2]

[1]Biology Research Center for Industrial Accelerators (BRCIA), Dongshin University, #252 Daeho-Dong, Naju-Si, Jeonnam 520-811, Korea, [2]National Horticulture Research Institute RDA, Suwon 440-310, Korea

Abstract

This study clarified the role of the key enzymes [sucrose phosphate synthase (SPS), sucrose synthase (SS)] in the sucrose synthesis of eggplant (*Solanum melongena* L.) cultured under different P.E. mulches. Sugar concentration in fruit and SPS and SS activities in leaf and fruit were measured during the different fruit development stages.

Total sugar concentration was the highest in the reflective mulches throughout all the developmental stages of eggplant and followed by the white, the black and transparent mulches. The concentrations of all three individual sugars (sucrose, glucose and fructose) increased during fruit development under all four P.E. mulches. Even though no specific pattern in enzyme activities of leaf and fruit related to the sugar accumulation of eggplant fruit was observed, the reflective and white mulches triggered higher sucrose synthetic enzyme activities than the black and transparent mulches.

Key words: eggplant; mulches; sink strength; sucrose synthetic enzymes; sugar content