Abstract

Can Grafting Alter Photosynthetic Efficiency of Grafted Tomato Plants?

Aye Aye Thwe[1], Darli Wai Soe[2]

[1]Professor, Department of Horticulture, Yezin Agricultural University, Myanmar. Email: ayethwe.phyo07@gmail.com
[2]Master student, Department of Horticulture, Yezin Agricultural University, Myanmar. Email: dwaisoe@gmail.com

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I. Abstract

Tomato (*Lycopersicon esculentum* Mill.) is one of the most economically important vegetable crops and widely cultivated in the world. Very recently, Myanmar tomato farmers face problems in tomato production due to the climate change impacts. Grafting on resistant rootstocks with desirable characters is one of the problems solving method to overcome these production problems. Due to limited information on rootstock varieties and their combinations with commercially available scions in Myanmar, this experiment was conducted at the Department of Horticulture, Yezin Agricultural University, Myanmar from 2014-2016 to determine the performance of grafted tomato in response to different rootstock types (local tomato, local eggplant and local hot pepper). Chlorophyll content of grafted plants was significantly higher than non-grafted ones. Quantum efficiency of photosystem II also differs significantly between the grafted and non-grafted tomato. Among the treatments, the highest photosynthesis efficiency was observed in eggplant rootstock (0.83) followed by hot pepper rootstock (0.81), tomato rootstock (0.79) and non-grafted one (0.76). Changing the shape of OJIP fluorescence transient between the grafted and non-grafted plants suggests the differences in photosynthesis rate and its efficiency between the grafted and non-grafted tomato. It can be concluded that type of rootstock also has a positive impact on chlorophyll content enhancing the quantum efficiency of photosystem II in grafted tomato plants.

II. Procedures for tomato grafting



III. Types of rootstock



IV. Reference

1. Cramer, G. R., K. Urano, S. Delrot, M. Pezzotti, and K. Shinozaki. 2011. Effect of abiotic stress on plants: a systems biology perspective. BMC Plant Biology 11 (163): 514-518.
2. Zheng, N., M. L. Wang, H. T. Wang, and X. Z. Ai. 2009. Effects of grafting on photosynthesis of sweet pepper seedlings under low temperature and weak light intensity. Ying Yong Sheng TaiXueBao 20: 591-596.

V. Biography:

Aye Aye Thwe completed her PhD in tropical agriculture from Kasetsart University, Thailand in 2013. She has published 4 articles from peer review journal. She currently serves as a Professor at the Department of Horticulture, Yezin Agricultural University, Myanmar. She also serves as a reviewer in some International Journals.

VI. Presenting author details



Full Name: Aye Aye Thwe
Contact number: +95 9 420 730 825
Twitter account:
Linked In account: ayethwe.phyo07
Session name/ number:
Category: Poster presentation
Passport Number: OM054856