

**EFFECT OF 4-CHLOROPHENOXYACETIC ACID APPLICATION ON YIELD AND  
FRUIT QUALITY OF TOMATO (*SOLANUM LYCOPERSICUM* L.)  
UNDER HIGH TEMPERATURE CONDITIONS**

**Atsushi Sanada<sup>1</sup>, Hiroko Kunori<sup>2</sup>, Kaihei Koshio<sup>2</sup>, Shuichi Iwahori<sup>2</sup> and Hisamitsu Takahashi<sup>2</sup>**

<sup>1</sup>Department of International Agricultural Development, Tokyo University of Agriculture

<sup>2</sup>Laboratory of Tropical Horticultural Science, Graduate School of Agriculture,  
Tokyo University of Agriculture

(Received: November 1, 2010; Accepted: February 25, 2011)

**ABSTRACT**

In tropical or subtropical regions, tomato growers are challenged by the reduction in fertilization rate, yield and fruit quality due to high temperatures and/or excess light intensity. 4-Chlorophenoxyacetic acid (4-CPA) is applied as a supplement to overcome these disadvantages, but the effect on fruit yield and/or quality such as antioxidant activity is not yet fully understood. We investigated the effect of 4-CPA on yield and fruit quality of Taiwanese heat tolerant tomato varieties and Japanese common varieties. The results show that 4-CPA application alleviated the decrease in yield and enhanced the antioxidant activity and total phenol content.

**Key words:** antioxidant activity, fertilization rate, heat tolerant, marketable yield, total phenol