



[Available Issues](#) | [Japanese](#)

Author:  [ADVANCED](#) | Volume  Page

Keyword:



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

## Horticultural Research (Japan)

Vol. 8 (2009) , No. 4 489-494

[E]

### **Effect of Different Levels of Mechanical Restriction Sugar and Organic Acid Contents in Watermelon**

[Yuri Kanamori](#)<sup>1)</sup>, [Nobuyuki Fukuoka](#)<sup>1)</sup>, [Youichi Ikeshita](#)<sup>1)</sup> and [Tos](#)

1) Sand Dune Agricultural Experimental Station, Ishikawa Agriculture

2) Ishikawa Prefectural University

(Received October 23, 2008)

(Accepted March 4, 2009)

Watermelon fruits were grown in enclosed conditions within 15-, 17.5-, and 20-cm-sided wooden boxes to mechanically restrict their growth. All treatments produced similar sized fruits, and the resulting fruit size corresponded to the box size. The fruit colors did not differ between the 20-cm-sided box treatment and the control, but the fruit in the 15- and 17.5-cm-sided box treatments remained yellow. In the 15- and 17.5-cm-sided box treatments, sugar accumulation was higher in the center regions of fruit compared with the control. On the other hand, in the

treatment, sugar accumulation in the central and/or intermediate region equal to the control, and a larger amount of sugar accumulated in the organic acid contents of fruit also varied according to the treatment: cm-sided box treatments resulted in marked increases of lactic acid and results suggest that treatment using the 20-cm-sided box was useful sweet fruit with a lower level of organic acid in watermelon.

**Key Words:** [box size](#), [cell enlargement](#), [fresh color](#), [sugar content](#)

[\[PDF \(1281K\)\]](#) [\[References\]](#)

Download

To cite this article:

Yuri Kanamori, Nobuyuki Fukuoka, Youichi Ikeshita and Toshiki  
Different Levels of Mechanical Restriction of Growth on Sugar and  
Watermelon . Hort. Res. (Japan) 8: 489-494 .

---

doi:10.2503/hrj.8.489