

Title Quality improvement of chestnut by cold storage under high humidity  
Authors N. Nakamura, H. Umehara, P. Roy, H. Okadome, Y. Ishikawa, T. Shiina, K. Iwaki and M. Kobayashi  
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### Abstract

Methyl bromide (CH<sub>3</sub>Br) has been used widely for extermination of *Curculio sikkimensis* (Heller) (Coleoptera: Curculionidae) in chestnuts. Based on the Montreal Protocol, the use of CH<sub>3</sub>Br is strictly limited because of its Ozone Depletion Potential. After the regulation of the use of CH<sub>3</sub>Br, an alternative method is highly required to control *Curculio sikkimensis*. Recent study suggested that it is possible to exterminate *Curculio sikkimensis* by cold storage. During the cold storage, sugar is accumulated in chestnuts. Unfortunately, this method is not put to practical use because it is difficult to control high humidity at constant low temperature. In this study, indirect cooling system ('Hyou-zou-ko') enables to maintain high humidity stably at low temperature was applied for storage of chestnuts. The effect of high humidity and low temperature on the extermination of *Curculio sikkimensis*, eating quality, and the accumulation of sugar in chestnuts were discussed.