# Methyl jasmonate alleviates chilling injury by regulating membrane lipid composition in green bell pepper

**Mingjie Ma, Zhiqiang Zhu, Shunchang Cheng, Qian Zhou, Xin Zhou, Ximan Kong, Meisi Hu, Xiaochen Yin, Baodong Wei and Shujuan Ji**

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## Abstract

The effects of methyl jasmonate (MeJA) treatment on membrane lipid metabolism of green bell pepper during cold storage was studied. The results showed that the chilling injury (CI) index, electrolyte leakage, malondialdehyde (MDA) content, phospholipase D (PLD) activity and gene expression of green bell pepper treated with MeJA were lower than those of the control fruit. MeJA treatment was able to maintain a higher level of ascorbic acid (VC) content, higher levels of phosphatidylcholine (PC), phosphatidylethanolamine (PE), phosphatidylserine (PS) and lower levels of digalactosyldiacylglycerol (DGDG), phosphatidic acid (PA), digalactosyldiacylglycerol/ onogalactosyldiacyl glycerol (DGDG/MGDG) and PC/PE compared to control fruit. In addition, MeJA treatment can also increase the proline content of green bell pepper fruit. Therefore, the reason that MeJA can improve the cold resistance of green bell pepper fruit may be attributed by the decreased expression and activity of *PLD* gene. The degradation of membrane lipid was delayed, and the content of proline increased, thereby maintaining cell membrane stability.