

研究报告

盐胁迫对苹果器官中钙镁铁锌含量的影响

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摘要

以盆栽2年生富士苹果树(砧木为平邑甜茶 *M. hupehensis* Rehd) 为试材,研究了盐胁迫对苹果矿质营养平衡的影响.结果表明,在盐胁迫下,苹果各器官不同时期的单位干样中Ca、Mg、Fe和Zn含量的平均值没有明显变化,但各元素与Na的比值明显下降,特别是在高盐(3‰ NaCl)胁迫下下降更为明显,从而破坏了树体内元素平衡.在无盐和盐胁迫下,苹果各器官中Ca含量的顺序为主干韧皮部>叶片、新梢>根>主干木质部; Mg含量为新梢、根>主干木质部、主干韧皮部、叶片; Fe含量为根>叶片>主干韧皮部、新梢>主干木质部; Zn含量为新梢>叶片>根、主干韧皮部>主干木质部.与对照相比,器官中各元素含量在胁迫期间表现出不同程度的波动性.

关键词 [盐胁迫](#); [苹果](#); [矿质营养](#)

分类号

Effects of NaCl stress on Ca, Mg, Fe and Zn contents of different apple organs

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Abstract

The study with two-year-old potted apple tree (Fuji variety with *M. hupehensis* Rehd stock) showed that under NaCl stress, the average contents of Ca, Mg, Fe and Zn in different apple organs sampled at 4 periods had no significant changes, while the content ratios of test elements to Na decreased significantly, especially under high NaCl (3‰) stress, which would result in the unbalance of mineral nutrients in the tree. The Ca content of different apple organs under and without NaCl stress was in order of trunk phloem > leaf and vegetative shoot > root > trunk xylem; Mg content was vegetative shoot and root > trunk xylem and phloem, and leaf; Fe content was root > leaf > trunk phloem and vegetative shoot > trunk xylem; Zn content was vegetative shoot > leaf > root and trunk phloem > trunk xylem. The element contents under NaCl stress showed different degrees of fluctuation, comparing with the control.

Key words [NaCl stress](#) [Malus spp.](#) [Mineral nutrients](#)

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