

## 供锌水平对番茄果实抗氧化性及风味品质的影响

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## Effects of Zn fertilization on antioxidative capacity and flavor quality of tomato fruit

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**摘要** 为研究不同供锌水平对番茄产量及果实风味品质的影响, 设置了不同的硫酸锌浓度的溶液培养试验。结果表明, 无论缺锌还是多锌处理, 番茄叶片叶绿素含量均显著下降; MDA含量显著上升, POD酶活性下降, 以缺锌处理较为明显; 缺锌处理SOD酶活性显著低于对照, 而多锌处理稍高于对照, 产量均下降。缺锌和多锌处理番茄果实的酸度增加, Vc含量降低; 缺锌处理可溶性固形物显著下降, 而多锌处理与正常处理没有差别。此外, 缺锌和多锌处理果实中的番茄红素、总酚和总黄酮含量均低于正常处理, 而抗氧化力没有差别, 果实的芳香物质种类组成也发生了变化。说明适宜的锌水平是保证番茄高产、优质的重要因素。

**关键词:** 番茄 锌 抗氧化性 风味品质

**Abstract:** The experiment was carried out to study the effects of different Zn<sup>2+</sup> treatments on yield and flavor quality of tomato (*Lycopersicon esculentum* Mill.) fruits by designing different concentration of zinc sulfate in nutrition solution. The results showed that the yield, chlorophyll content and POD activity are decreased under both deficiency and overplus of Zn<sup>2+</sup> treatments, while MDA content of leaves is increased significantly. SOD activity of leaves under the Zn<sup>2+</sup> deficiency is lower than that of the control, while it is not changed under the high level of Zn<sup>2+</sup>. Acid content of the fruits is increased under the two treatments, while the Vc content is decreased. Moreover, soluble substance content of the fruits is obviously decreased under the Zn<sup>2+</sup> deficiency treatment, while it seems no remarkable change under the overplus Zn<sup>2+</sup> treatment. In addition, contents of lycopene, total phenolics and total flavonoid of the fruits are all decreased under the two treatments and the types of aroma compounds are changed, while the antioxidative capacities are not markedly changed. Therefore, suitable Zn<sup>2+</sup> fertilization is an important factor for producing high yield and quality of tomato fruits.

**Keywords:** tomato zinc antioxidative capacity flavor quality

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