

园艺—研究报告

水分胁迫对大丽花光合作用、蒸腾和气孔导度的影响

范苏鲁¹,苑兆和²,冯立娟²,王晓慧^{3,3},丁雪梅^{3,3},甄红丽^{3,3},贾学红³

- 1. 山东农业大学
- 2. 山东省果树研究所
- 3.

摘要:

以大丽花品种‘粉西施’盆栽扦插苗为试材,研究了不同程度水分胁迫及复水对大丽花品种粉西施叶片光合作用、蒸腾和气孔导度的影响。结果表明:随着水分胁迫程度的加深和胁迫时间的延长,大丽花叶片的净光合速率(Pn)、蒸腾速率(Tr)、气孔导度(Gs)和水分利用率(WUE)下降,胞间CO₂浓度(Ci)先下降后上升,气孔限制值Ls先升高后下降。轻度和中度水分胁迫下,气孔限制是Pn降低的主要原因;重度水分胁迫下,非气孔限制是Pn降低的主要原因。重度胁迫更早对大丽花叶片造成伤害,重度胁迫下复水后光合指标难以恢复。

关键词: 气孔限制

Effects of Water Stress on Photosynthesis, Transpiration and Stomatal conductance in Dahlia Leaves

Abstract:

The effects of different levels of water stress and rewatering on leaf transpiration, photosynthesis and stomatal conductance of ‘Fenixishi’ plant was studied. The results showed that transpiration rate(Tr)、net photosynthetic rate(Pn)、stomatal conductance(Gs) and water using efficiency(WUE) decreased with the increasing of water stress and the lasting of time while intercellular CO₂ concentration(Ci) decreased first and then increased and stomatal limitation value(Ls) increased first and then decreased. The reasons of Pn decreased were stomatal and nonstomatal limitation respectively in light and severe water stresses. After rewatering, the photosynthesis characteristics cannot recovered on the serious stress which did damage to dahlia leaves more earlier.

Keywords: Stomatal limitation

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通讯作者: 范苏鲁

作者简介:

作者Email: fansulu@163.com

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