

研究报告

遮光处理对西葫芦幼苗形态特征及光合生理特性的影响

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收稿日期 2005-4-25 修回日期 2005-9-6 网络版发布日期 接受日期

摘要

研究了不同遮光处理对西葫芦幼苗形态及光合生理特性的影响.结果表明,在60%透光率条件下,西葫芦幼苗具有较高的相对生长率、净光合速率、气孔导度、蒸腾速率、单叶水分利用效率、饱和蒸汽压、表观量子效率和叶绿素含量,而胞间CO₂浓度较低;西葫芦幼苗具有较高的光饱和点(1 125 μmol·m⁻²·s⁻¹)、较低的光补偿点(15.2 μmol·m⁻²·s⁻¹).弱光下西葫芦幼苗较耐低浓度CO₂,而强光下的幼苗较耐高浓度CO₂.60%透光率下西葫芦幼苗叶片丙二醛和脯氨酸含量最低,而过氧化物酶和过氧化氢酶活性则最高.

关键词 [西葫芦幼苗](#) [遮光](#) [相对生长率](#) [光合特性](#) [蒸腾速率](#)

分类号

Effects of shading on squash seedlings' morphological and photosynthetic physiological characteristics

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Abstract

The study of squash seedlings' morphological and photosynthetic physiological characteristics under different shading showed that under 60% light transmittance,their relative growth rate,net photosynthetic rate (P_n),stomatal conductance (G_s),transpiration rate (EVAP),water use efficiency (WUE),saturation steam pressure (MBR),apparent quantum yield of photosynthesis (AQY),and chlorophyll contents were higher,while the intercellular CO₂ concentration (C_i) was lower,compared with those under 20% light transmittance and CK.The seedlings under 60% light transmittance had a higher light saturation point (1 125 μmol·m⁻²·s⁻¹) but a lower light compensation point (15.2 μmol·m⁻²·s⁻¹).Squash seedlings under lower light intensity could endure lower concentration of CO₂,while those under higher light intensity could endure higher concentration of CO₂.Under 60% light transmittance,the malondialdehyde (MDA) and praline (Pro) contents were the lowest,while the peroxidase (POD) and catalase (CAT) activities were the highest.

Key words

[Squash seedling](#) [Shading](#) [Relative growth rate](#) [Photosynthetic characteristics](#) [Transpiration rate](#)

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