

工厂化黄瓜穴盘育苗昼温适应性

赵青松, 李萍萍**, 王纪章, 胡永光, 高蓓

江苏大学农业工程研究院现代农业装备与技术省部共建教育部重点实验室/江苏省重点实验室, 江苏镇江 212013

Adaptability of cucumber plug seedlings to daytime temperature.

ZHAO Qing-song, LI Ping-ping, WANG Ji-zhang, HU Yong-guang, GAO Bei

Ministry of Education and Jiangsu Province Key Laboratory of Modern Agricultural Equipment and Technology, Institute of Agricultural Engineering, Jiangsu University, Zhenjiang 212013, Jiangsu, China

- 摘要
- 参考文献
- 相关文章

全文: PDF (386 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 在人工气候室内以黄瓜穴盘苗为材料,测定不同昼温处理下(昼温分别为30 ℃、27 ℃、24 ℃、21 ℃、18 ℃、15 ℃,夜温均为15 ℃)黄瓜幼苗下胚轴长、下胚轴粗、第一叶片和第二叶片的长和宽、地上部和地下部干物质积累量、叶片含水率及叶片的叶绿素荧光特性,并用主成分分析法和聚类分析法对不同昼温处理下的黄瓜穴盘苗质量进行分析.结果表明:不同昼温处理下黄瓜穴盘苗各生长指标存在显著性差异,幼苗质量的昼温反应表现为24 ℃ > 21 ℃ > 27 ℃ > 30 ℃ > 18 ℃ > 15 ℃;通过主成分分析和系统聚类可以把各温度处理分为:最适温度处理(24 ℃/15 ℃)、适宜温度处理(21 ℃/15 ℃)和不适宜温度处理3类;不适宜温度处理又可分为高温抑制类(27 ℃/15 ℃,30 ℃/15 ℃)和低温抑制类(15 ℃/15 ℃,18 ℃/15 ℃)2类.

关键词: 黄瓜 穴盘苗 昼温 主成分分析 聚类分析

Abstract: Cucumber plug seedlings were cultured in a phytotron to study their responses to different daytime temperature. The daytime temperature was controlled at 30 ℃, 27 ℃, 24 ℃, 21 ℃, 18 ℃ and 15 ℃, and the night temperature was at 15 ℃, with the thickness and length of hypocotyl, length and width of the first and the second leaves, dry matter accumulation of above- and under-ground parts, leaf moisture content, and leaf chlorophyll fluorescence parameters measured. Principal component analysis and clustering analysis were made to analyze the seedling quality under different temperature treatment. There existed significant differences in the test growth indices among different treatments, with the seedling quality decreased at the daytime temperature 24 ℃ > 21 ℃ > 27 ℃ > 30 ℃ > 18 ℃ > 15 ℃. All the daytime/nighttime temperature treatments could be classified into three groups, *i.e.*, optimum temperature (24 ℃/15 ℃), appropriate temperature (21 ℃/15 ℃), and inappropriate temperature, and the inappropriate temperature could be further subdivided into two groups, *i.e.*, high-temperature inhibition (27 ℃/15 ℃, 30 ℃/15 ℃) and low-temperature inhibition (15 ℃/15 ℃, 18 ℃/15 ℃).

Key words: cucumber plug seedling daytime temperature principal component analysis clustering analysis

服务

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ E-mail Alert
- ▶ RSS

作者相关文章

引用本文:

. 工厂化黄瓜穴盘育苗昼温适应性[J]. 应用生态学报, 2011, 22(09): 2343-2347.

. Adaptability of cucumber plug seedlings to daytime temperature. [J]. Chinese Journal of Applied Ecology, 2011, 22(09): 2343-2347.

链接本文:

<http://www.cjae.net/CN/> 或 <http://www.cjae.net/CN/Y2011/V22/I09/2343>

没有本文参考文献

- [1] 张利东, 高丽红, 张柳霞, 王树忠, 睦晓蕾, 张振贤 . 交替隔沟灌溉与施氮量对日光温室黄瓜光合作用、生长及产量的影响[J]. 应用生态学报, 2011, 22(09): 2348-2354.