

林学—研究报告

8种屋顶绿化木本植物的耐热性比较

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摘要:

筛选适应屋顶特殊环境的木本植物,对于丰富屋顶绿化植物种类、发挥屋顶绿化的生态和美化功能具有重要的现实意义。高温胁迫是植物正常生长发育的限制因子,为了探索屋顶绿化木本植物的耐热性,研究其在屋顶高温环境下的适应能力,笔者以屋顶上生长的白榆、柳树、构树、杠柳、小叶杨、金银木和较适宜屋顶绿化的金叶榆、珍珠梅8种木本植物为试验材料,测定不同梯度热处理条件下叶片相对电导率,配合Forstst2.1统计分析,对8种木本植物耐热性进行了研究,结果表明:叶片经梯度高温处理后,处理温度与细胞伤害率之间呈“S”形曲线。通过Logistic拐点确定半致死温度LT50,由高到低依次为:杠柳65.30℃、金银木63.80℃、小叶杨57.85℃、柳树56.84℃、白榆55.87℃、珍珠梅49.94℃、构树44.81℃、金叶榆43.98℃。8种植物材料中,杠柳、金银木的耐热能力最好,柳树、白榆、小叶杨次之,珍珠梅、构树、金叶榆耐热性较差。

关键词: 半致死温度

Comparison of Heat Resistance of Eight kinds of Roof Greening Woody Plant

Abstract:

Screening woody plants to adapt to the roof special circumstances has important practical significance for riching the kinds of the greening plants and making it play the functions of roof greening and beautification. The high temperture is the limited factor for plant growing. In order to expore the heat resistance of roof greening plants and study the adaptability of the plant to high temperature environments, *Ulmus pumila* L, *Salix matsudana* Koidz, *Broussonetia papyrifera*, *Periploca sepium* Bung., *Populus simonii* Carr., *Lonicera maackii* (Rupr.) Maxim. planted on the roof and *Ulmus pumila* cv. *jinye*, *Sorbaria kirilowii* (Requel) Maxim. suitable for roof greening were as the test materials in the experiment. The relative conductivity of leaves of above plants were tested at different heat treatment conditions, and with Forstst 2.1 the heat resistance of the eight kinds of woody plants were studied. The results showed that: the temperature and cell injury rate of leaves treated with different high temperature were ‘S’ shaped curve. The semi-lethal temperature of different plants from high to low was *Periploca sepium* Bung., *Periploca sepium* Bung., *Populus simonii* Carr., *Salix matsudana* Koidz., *Ulmus pumila* L., *Sorbaria kirilowii* (Requel) Maxim., *Broussonetia papyrifera*, *Ulmus pumila* cv. *jinye*, and which were 65.30℃, 63.80℃, 57.85℃, 56.84℃, 55.87℃, 49.94℃, 44.81℃, 43.98℃ respectively. The heat resistance of *Periploca sepium* Bung. and *Lonicera maackii* (Rupr.) Maxim. was best, that of *Salix matsudana* Koidz., *Ulmus pumila* L., *Populus simonii* Carr. was better, and that of *Sorbaria kirilowii* (Requel) Maxim., *Broussonetia papyrifera* and *Ulmus pumila* cv. *jinye* were worst.

Keywords: semi-lethal temperature

收稿日期 2010-08-09 修回日期 2010-09-10 网络版发布日期 2011-03-31

DOI:

基金项目:

国家林业局林业公益性行业专项“适宜房顶绿化的高效节水型木本植物良种选育”

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