

农业基础科学

芒花粉的生活力及测定方法比较

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摘要:

本研究先后采用了花粉离体萌发法、FDA染色法和I2-KI染色法测定了芒离体花粉的生活力。结果表明:在离体萌发法中,离体花粉在培养5 min后即开始萌发,培养30 min后花粉管平均长度达到了145.77 μm。芒离体花粉的平均初始萌发率为82.6%,但花粉生活力下降很快,室温保存90 min的花粉其萌发率已下降至3.0%。因此利用离体萌发法能够准确有效地测定芒花粉生活力的变化规律。而利用FDA染色法和I2-KI染色法测定的芒花粉初始生活力与离体萌发法的结果基本一致,分别为84.6%和86.6%,但这两种染色法不适合用于跟踪测定花粉生活力的变化。

关键词: 芒 花粉生活力 离体萌发法 FDA染色法 I2-KI染色法

Comparison of Pollen Viability Determining Methods for Miscanthus sinensis Anderss

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Abstract:

The pollen vitality of Miscanthus sinensis was determined by in vitro pollen germination method, I2-KI staining method and FDA staining method, respectively. The results showed that with the in vitro pollen germination method, the pollens germinated in 5 minutes and reached an average length of 145.77 μm in 30 minutes. The average initial pollen germinating rate was 82.6%, but it was decreased sharply to 3.0% when the pollens were stored for 90 minutes at room temperature. The initial staining rate by FDA method and I2-KI method was 84.6% and 86.6% respectively, close to that of in vitro pollen germination method. However, the FDA staining or I2-KI staining method could not accurately distinguish the inactive pollens from the pollens having been stored for a longer time, as suggested that these two staining methods were not suitable for studying the change of pollen viability.

Keywords: Miscanthus sinensis Pollen viability in vitro pollen germination method I2-KI staining method FDA staining method

收稿日期 2009-07-17 修回日期 2009-08-07 网络版发布日期 2009-12-20

DOI:

基金项目:

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