

园艺—研究报告

番木瓜胚珠发生与雌配子体形成的研究

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摘要:

本研究力求探明番木瓜胚珠发生与雌配子体形成的过程,为进一步了解其遗传背景和指导今后种子生产提供有关资料。实验采用石蜡制片法将材料制成永久制片,切片厚度10~12 μm,铁矾苏木精整染,Nikon摄影显微镜观察拍照。结果发现番木瓜胚珠倒生,双层珠被,不形成珠孔,厚珠心;单孢原细胞起源于珠心表皮细胞下,大孢子四分体呈直线形排列,合点端的大孢子为功能大孢子;胚囊发育类型为蓼型;八核胚囊中合点端有三个核优先形成反足细胞,成熟胚囊中仅由1个卵细胞和1个中央细胞构成,中央细胞中的两个极核在受精前融合为一个次生核,3个反足细胞和两个助细胞在受精前解体消失。研究表明番木瓜胚珠发生与雌配子体的形成符合被子植物发育的一般规律,而本研究与其他学者的观察存在些许差异,这可能是由于番木瓜遗传背景复杂进而造成不同研究者采用的实验材料迥异所致。

关键词: 蓼型

The Study on Ovule Genesis and Development of Female Gametophyte of *Carica papaya* L.

Abstract:

The aim was to illuminate ovule genesis and development of female gametophyte of *Carica papaya* L., find out genetic background of *Carica papaya* L. and supply relative information for seed production. Paraffin section and hematoxylin dyeing were used in the experiment. Experiment materials were made into permanent microscopic mount whose thickness was 10-12 μm. Finally, Nikon photomicroscope was used to photograph. The results found that the ovule was anatropous, bitegminous and crassinucellate, not forming micropyle. The single archesporial originated from cuticle of the nucellus. The megaspore tetrad arranged linearly. The megaspore near chalaza was the functioning megaspore. The development of embryo sac was the polygum type. In the 8-nucleate embryo sac, 3 karyon near chalaza formed antipodal cells ahead of other karyon. Finally the female gametophyte consisted of one oocyte and one central cell. Before the oocyte was fertilized the two pole nucleus of central cell had cumulated into a secondary karyon and the other cells disappeared. The study indicated that ovule genesis and development of female gametophyte of *Carica papaya* L. were in accord with universal law of angiosperm. However, there was some difference from other pursuer's study. Complex genetic background of *Carica papaya* L. perhaps caused distinct difference of experiment material which led to different results.

Keywords: polygum type

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