

‘辣椒 95-1’保持系与雄性不育系花蜜腺的发育解剖学研究

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摘要: 采用扫描电镜和石蜡制片技术对‘辣椒 95-1’雄性不育系和同型保持系的花蜜腺及其发育过程进行了比较研究。结果表明: 雄性不育系和同型保持系花蜜腺的位置、形态、结构及发育过程相似。辣椒的花蜜腺位于子房基部, 围绕子房, 属于子房蜜腺。蜜腺由分泌表皮和泌蜜组织组成。分泌表皮外覆角质膜, 表皮无气孔分布, 泌蜜组织为多层薄壁细胞。蜜腺由子房基部的外层表皮及其相邻的内侧细胞分裂、生长、分化而来。在花蕾膨大期, 蜜腺细胞的细胞质较浓, 已经开始积累淀粉粒和蛋白质; 露冠期, 分泌表皮和泌蜜组织的细胞质稀, 淀粉粒和蛋白质大量增加; 花蕾初放期, 细胞质浓, 淀粉和蛋白质的含量都非常高; 盛花期, 细胞质稀, 液泡增大且数量增加, 淀粉和蛋白质的量减少; 败花期, 细胞质稀, 形成中央大液泡, 淀粉重新积累。

关键词: 辣椒; 花蜜腺; 雄性不育系; 保持系

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Studies on Developmental Anatomy of Floral Nectaries of Male-Sterile-Homomaintainer Line in “Hot Pepper 95-1”

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Abstract: Studies on floral nectaries and their development of male-sterile line and homomaintainer line in ‘Hot pepper 95-1’ have been done by scanning electron microscope and the paraffin slice technique. The results show that positions of floral nectary, morphology and development of male sterile-line and homomaintainer line are similar. The floral nectary of ‘Hot pepper 95-1’ is at the base of ovary, and belongs to ovarial nectary. The nectary is composed of nectariferous tissue and secretory epidermis, which is covered by cuticle. There is no stoma observed on it. The nectariferous tissue is of many layers of cells. At early stage of the flower bud, the division growth and differentiation of the cells of ovary outer epidermis and its adjacent inner side result in the formation of floral nectary. At the stage of bud enlargement, the cytoplasm of secretory epidermis and nectariferous tissue is dense and initially accumulates polysaccharide and protein. At the revealing corolla stage of flower, cytoplasm of nectariferous tissue and secretory epidermis is thin, and accumulates polysaccharide and protein continuously. At early stage of anthesis, cytoplasm is dense, and a large number of polysaccharide and protein accumulate. At the full-bloom stage, the amount of vacuole increase and polysaccharide and protein decrease. At the withering stage, nectariferous tissue form central vacuole and the polysaccharide accumulates again.

Key words: *Capsicum annuum* L.; Floral nectary; Male-sterile line; Homomaintainer line

辣椒 (*Capsicum annuum* L.) 为茄科 (Solanaceae) 辣椒属 (*Capsicum*) 的一年生草本植物, 栽培品种十分丰富, 现在已成为我国栽培面积最大的蔬菜作物和调味品作物之一, 而且具有一定的药用价值。

关于辣椒, 国内外已进行了很多研究, 这些研究主要集中在其品种选育、色素提取、发育等方面^[1-4]。辣椒是一种异花授粉的植物, 具有明显的

杂种优势, 利用辣椒雄性不育生产一代杂种种子可以简化制种手续, 提高种子纯度, 因此, 国内外对辣椒雄性不育的研究非常重视。但是, 辣椒雄性不育株的花蜜腺是否正常发育, 此方面的研究至今未见报道。本文对辣椒雄性不育系和同型保持系的花蜜腺的形态结构和发育进行比较研究, 以探讨其发育规律, 为辣椒的进一步研究利用提供科学依据。

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