园艺学报 » 2013, Vol. 40 » Issue (1) :10-20 DOI:

果树

‘红丽’海棠早实植株发育过程中内源激素变化

吴曼, 张文会, 王荣, 董彦, 毛志泉, 沈向

（山东农业大学园艺科学与工程学院/作物生物学国家重点实验室，山东泰安 271018）

Changes of Endogenous Hormones of Precocious Crabapple During Development

WU Man, ZHANG Wen-Hui, WANG Rong, DONG Yan, MAO Zhi-Quan, SHEN Xiang

（College of Horticulture Science and Engineering, Shandong Agricultural University, State Key Laboratory for Crop Biology, Tai’an, Shandong 271018, China）

- 摘要
- 参考文献
- 相关文章

Download: PDF (322KB) HTML (1KB) Export: BibTeX or EndNote (RIS) Supporting Info

摘要 以童期不同的海棠（*Malus* sp.）植株为试材，使用酶联免疫法（ELISA）测定花芽分化期间短枝顶芽、幼叶、细根中内源激素含量的变化，以探讨内源激素对花芽分化的影响，为缩短果树童期、开发利用早实海棠资源奠定基础。结果显示，早实植株与成熟嫁接植株的内源激素含量变化趋势相似。花芽分化的前期阶段，芽和根中IAA 含量均逐渐减少，到9 月初开始上升，成熟植株含量整体低于未成熟植株；成熟植株叶中内源IAA 含量高于未成熟植株。芽中GAs 先上升后下降再上升，成熟植株8 月份达到最低，而未成熟植株9 月份处于最低水平；叶中GAs 含量在成熟植株均保持较低水平；根中GAs 变化与芽相反。内源ZR 含量在不同器官均有大幅增加，成熟植株均高于未成熟植株，实生早实植株中的变化幅度最大。成熟植株芽中ABA 含量在160 ~ 170 ng · g^{-1}FW 上下波动，未成熟植株始终低于160 ng · g^{-1}FW；叶和根中的ABA 含量变化趋势一致，即先升高后逐渐下降，9 月之后回升。成熟植株较未成熟植株在芽与叶中均表现为高比值的ABA/GAs 与ZR/GAs，而根中与此相反。

关键词： 早实海棠 童期 内源激素 花芽分化

Abstract: The content and the different dynamic of endogenous hormones in spur terminal buds, young leaves and fine roots during the bud differentiation of ornamental crabapple in different juvenile lengths has been measured by ELISA for probing how the ornamental crabapple flower bud differentiation is effected by endogenous hormones and for using the resources to shorten the juvenile lengths. The results demonstrated that the similar endogenous hormones contents and trend between the precocious plants and grafted mature plants. The IAA contents in the apical buds and roots decreased first and reached the minimum value in the early September during the process of flower bud differentiation. It was lower than the immature plants. The contents of IAA in the mature materials in leaves were higher than the immature one. The contents of GAs in apical buds increased first and then decreased to the minimum value in the early August. It was down to the lowest in the mature and also in the immature materials in the September. The contents of GAs in leaves of mature materials stayed at a low level in most of the time. The contents of GAs in the root were contrary to it was in the apical buds. The contents of endogenous hormones were higher and showed the highest range ability in mature materials than in precocious one. The ABA contents in buds of the mature materials were fluctuated in 160 - 170 ng · g^{-1}FW and immature individuals were always less than 160 ng · g^{-1}FW. The similar trend of ABA contents was showed in leaves and roots, increased first and then decreased gradually and reached the minimum level in the early September finally. The opposite results were discovered in roots. Mature varieties have a high ratio of ABA/GAs and ZR/GAs than more immature variety in buds and leaves, and contrast in the root.

Keywords: precocious crabapple, juvenile stages, endogenous hormone, floral bud differentiation

Service

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

作者相关文章

- 吴曼
- 张文会
- 王荣
- 董彦
- 毛志泉
- 沈向

引用本文:

吴曼, 张文会, 王荣等 .‘红丽’海棠早实植株发育过程中内源激素变化[J] 园艺学报, 2013,V40(1): 10-20

WU Man, ZHANG Wen-Hui, WANG Rong etc .Changes of Endogenous Hormones of Precocious Crabapple During Development[J] ACTA HORTICULTURAE SINICA, 2013,V40(1): 10-20

链接本文:

http://www.ahs.ac.cn//CN/ 或 http://www.ahs.ac.cn//CN/Y2013/V40/I1/10

没有本文参考文献

[1] 李海云, 宋晓妍, 张秀省, 张玉忠.拟康宁木霉 SMF2 防治大白菜软腐病机理研究[J]. 园艺学报, 2012,39(7): 1373-

[2] 贺军虎, 马锋旺, 束怀瑞, 陈业渊, 赵小青, 魏军亚, 陈华蕊. ‘金煌’ 杧果胚正常与胚败育果实内源激素的变化[J]. 园艺学报, 2012,39(6): 1167-1174

[3] 王雄, 陈金印, 刘善军.喷施GA_3和2,4-D对留树保鲜脐橙落果和内源激素含量的影响[J]. 园艺学报, 2012,39(3): 539-544

[4] 贾兵, 张绍铃.梨花粉、花柱与子房中激素和矿质元素含量的比较[J]. 园艺学报, 2012,39(2): 225-233

[5] 吴月燕;李 波;朱 平;胡华勇.植物生长调节剂对西洋杜鹃花期及内源激素的影响[J]. 园艺学报, 2011,38(8): 1565-1571

[6] 贺 丹;王 政;何松林;.牡丹试管苗生根过程解剖结构观察及相关激素与酶变化的研究 [J]. 园艺学报, 2011,38(4): 770-776

[7] 龙雯虹;郭华春;;肖关丽;王 琼 .山药珠芽生长过程中激素和糖类物质含量的变化 [J]. 园艺学报, 2011,38(4): 753-760

[8] 李永涛;赵勇刚;杨克强;;房瑶瑶;侯立群.早实核桃花器官发育的解剖学研究[J]. 园艺学报, 2011,38(3): 434-440

[9] 史国安;郭香凤;孔祥生;张国海;包满珠;.牡丹呼吸速率和内源激素含量变化与开花衰老的关系[J]. 园艺学报, 2011,38(2): 303-303－310

[10] 苗金龙;乜兰春;石立哲;高 飞;贾丽丽.低温对芦笋萌芽及其激素含量的影响[J]. 园艺学报, 2011,38(1): 165-165－170

[11] 田春英;邵建柱;刘 莹;徐继忠;.红富士苹果叶片不定芽再生中激素、多胺和NO含量的变化[J]. 园艺学报, 2010,37(9): 1403-1408

[12] 杨永岗;张化生;李亚莉;王晓巍;郁继华;王小丽.高原夏季胡萝卜肉质根内源激素变化及其与先期抽薹的关系[J]. 园艺学报, 2010,37(7): 1102-1108

[13] 黄冬华;周超华;宋小民;陶秀花;谢启鑫;李宝光;赵 萍.温度和光照对金边瑞香花芽分化的影响[J]. 园艺学报, 2010,37(10): 1685-1689

[14] 刘 芸;钟章成;王小雪;谢 君;杨文英.栝楼雌雄植株激素和多胺含量的比较[J]. 园艺学报, 2010,37(10): 1645-1650

[15] 姜莉;陈发棣;滕年军;陈素梅;崔娜欣;顾俊杰.重瓣和重台莲品种花芽分化过程的解剖结构比较[J]. 园艺学报, 2009,36(8): 1233-1238