Coffea Expansin Gene Family and Expansin Expression during Fruit Maturation

I. G. F. BUDZINSKI[1], T. F. LEITE[1], E. K. TAKAHASHI[2], L. F. P. PEREIRA[3], L. G. E. VIEIRA[1]

[1]IAPAR, CP 481, 86001-970, Londrina, PR, Brazil
[2]Águas Claras Biotecnologia Ltda, Santana do Paraíso, MG, Brazil
[3]EMBRAPA-Café/IAPAR, Londrina, PR, CP 481, 86001-970, Brazil

SUMMARY

Expansins (EXP) are plant cell-wall loosing proteins involved in cell enlargement and developmental process such as organogenesis, seeds germination, cell wall dissolution and fruit ripening. Two families of EXP are known, α-expansin (EXPA), involved in the control of cell wall extension, and β-expansins (EXPB), the major allergens of grass pollen that also have cell wall-loosening activity. With the objective to study the role of EXP in coffee fruit maturation we selected EXP homologous sequences on the Brazilian Coffee Genome Project database. Full-length contigs were classified according the EXP family. Northern blots of pulp from fruits at the latest stages of maturation (22-32 weeks after flowering) showed increased transcription of one contig (*CaEXP1*). This higher transcription corresponds with a climacteric burst, during the expansion of pulp, with a decline in "cherry" fruits. The transcription of *CaEXP1* was also observed in roots, shoots, flower and flower buds, but not in leaves.