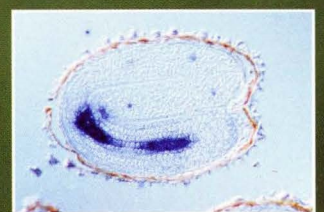




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# Biology of the *development of* cultivated perennial *plants*

*Perennial plants are subject to environmental changes and to competition in cultivated populations, and adapt to these changes through more or less marked alterations in development. These alterations may be accelerated through genetic improvement.*

## Team and co-ordinator

The "Biology of Development of Cultivated Perennial Plants" research group (UMR BDPPC) comprises 33 researchers from Agro.M, Cirad, INRA, IRD and the University of Montpellier II.

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**T**he biology of plant development embraces knowledge of all the molecular, cellular and structural processes leading from the zygote to the reproductively viable adult plant (embryogenesis, juvenile and adult development phases). In cultivated perennial species, account should be taken of specific features linked to the perenniality of crops, the length of the juvenile phase, the process of lignification, and establishment of a perennial plant architecture.

## Development and optimized exploitation of trees

The primary goal of the "Biology of Development of Cultivated Perennial Plants" (BDPPC) research group is to enhance understanding of the development of ligneous plants using temperate and tropical species, in order to master their functioning, their genetic usefulness, and their agronomic utilization.\*\*\*

## Thousands of rubber trees born in the laboratory

Hevea is an exclusive source of natural rubber. The homogeneity and productivity of hevea plantations are reduced not only by the genetic heterogeneity of seed stocks but also by the physiological ageing of the stocks of selected genotypes. Somatic embryogenesis is used for the rapid and reliable multiplication of these genotypes. The rejuvenation of plant material and the cloning of the whole tree should enhance vigour and increase the homogeneity of plantations. Different lines of "embryogenic calli" (cells kept proliferating in a suitable culture medium) from the PB 260 genotype were used in the experimental production of 20,000 vitroplants between 1996 and 2000. The process is now being adapted to other selected genotypes. Since 1992, field trials have been conducted regularly at five sites (Africa, Asia, Latin America) to measure the growth, production and evaluate other agronomic characteristics of this new plantation material.

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