AGROPOLIS
LES DOSSIERS
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Genetic resources *Genomics* & Plant biotechnology

Number 1 – May 2001

interest, difficult and often time-consuming field tests were traditionally necessary. Molecular genetics can now be used to identify and locate genes and to follow them during crossing and selection through their association with molecular markers. This technique allows concentration of the most valuable traits and avoids their loss during these operations. This process was first applied to simple characteristics, and is now increasingly used for quantitative traits, which are more difficult to handle.

• Direct transfer of genes by transgenesis
The transfer of an agronomic trait to a hybrid is particularly lengthy and difficult by natural means, but it is now possible to transfer the gene controlling the relevant characteristic directly into the cultivated plant by means of transgenesis.
The first applications of this method are much debated in Europe, yet at this early stage much remains to be discovered. Among the varieties selected, increasing use is made of transfer of a valuable trait to a plant of the same or a similar species. •••

Vitropic: a laboratory for production of vitroplants of tropical species in Languedoc-Roussillon


Yvan Matthieu, © Vitropic S.A.

Use of banana vitroclones increases production with less pesticides

Vitropic S.A., a subsidiary of Cirad, is a laboratory at St Mathieu de Tréviers near Montpellier which produces vitroplants (plants obtained by in vitro culture). It was set up in 1986 and now has an annual turnover of 1 million US$, 15 employees, and produces two to three million vitroplants a year, especially of banana, which are sent mainly to the West Indies and Africa. Vitropic is a leader in these foreign markets and its planlets production site is one of the more important in the world for banana.

An example of how biotechnology improves production

The production of vitroplants does not involve genetic transformation techniques but rather tissue culture. Plants selected for their agronomic traits are multiplied rapidly in test tubes. The miniature banana plantlets produced under the protected laboratory conditions are disease-free and are shipped from Montpellier to the production zones. Their utilization as planting material enhances production, since vitroplants give greater yields with less use of pesticide when grown in soil free of nematodes (soil parasites). In the case of banana, vitroplants help promoting a more environmentally-friendly agriculture.

The need for constant innovation

To increase its know-how and to improve and diversify its products, Vitropic must innovate constantly and invest in research and development. Agropolis, and in particular Cirad, provide Vitropic with a favourable environment and expert scientific and technical partners in the pursuit of its goals. Vitropic operates mostly in the Languedoc-Roussillon region, but is also developing collaborations with numerous partners from countries of the South.

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