

SIXTH FRAMEWORK PROGRAMME
THEMATIC PRIORITY 5
FOOD QUALITY AND SAFETY



ResistVir

Co-ordination of Research on genetic resistance to plant Pathogenic Virus, and their Vectors in European Crops

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Co-ordination Action

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PU public	PU
PP Restricted to other programme participants (including the Commission Services)	
RE Restricted to a group specified by the consortium (including the Commission services)	
CO Confidential, only for members of the consortium (including the Commission services)	

Introduction

The first technology transfer workshop (*Deliverable 21*) took place at the 18 Months ResistVir project meeting in Helsinki. Three invited speakers presented their experience on technology transfer, each in a 45 min. talk on the 6th of July 2006. In detail:

Prof. Ingo Potrykus (Academic researcher):

'The Long Way from Laboratory to Market, the Experience with Golden Rice'

Dr. Michael Metzloff (Bayer BioScience N.V.)

'From Laboratory to Industry, Company's View'

Dr. Lars von Borcke (Plant Bioscience Limited)

'From Laboratory to Intellectual Property, Benefits and Drawbacks'

The abstracts of all three talks were published on the ResistVir website (http://www.resistvir-db.org/private/meetings/Helsinki_2006.htm). However, only the full talk of Michael Metzloff is available as a pdf file. Ingo Potrykus did not agree to make his talk public on the ResistVir web site.

Abstract

The long way from laboratory to market – the experience with Golden Rice.

Ingo Potrykus, Chairman Humanitarian Golden Rice Project & Network.

'Golden Rice' (a GMO providing provitamin A in the polished grain) is a reality since February 1999. Since that time the inventors have taken every effort to deliver it under the umbrella of a humanitarian project. Despite its demonstrated potential to save millions of lives, it takes ca. 15 years to fulfil its promise. Why does it take so long'

- 1) 70 patents and 20 MTA's involved in the technology looked like a giant hurdle. Thanks to the humanitarian nature and support from biotech industry this could be overcome relatively easily.
- 2) Product development and variety registration is a routine task which requires ca. 3-4 years. If not a GMO 'Golden Rice would be in use since 2003.
- 3) For a GMO the key hurdle is 'extreme precautionary regulation' and a total lack of expertise and financial resources in the public sector to deal with the delivery of a GMO-product.
- 4) Public-private partnership and support from altruistic foundations (e.g Rockefeller and Gates Foundation) can help to solve the second problem.
- 5) There is no escape from the extremely time-consuming and expensive requirements of present GMO-regulation.
- 6) For regulatory reasons all variety development has to be based on one transgenic event, which has to be 'regulatory clean': no marker gene, single integration, no rearrangements, no unnecessary DNA sequences, no 'read-through or' or unintended gene activation, etc. This takes at least additional 5 years and lacks any scientific justification.
- 7) Work for the 'regulatory dossier' has to be based on the final variety, except for the 'event-independent' requirements, and takes another 5 years.
- 8) All the work is heavily hindered by the established rules and regulations (e.g. trans-boundary movement of seeds, permission for field testing), the attitude of subaltern officials, the GMO-hostility of the media and the public, the actions of anti-GMO-organizations, etc.

'Golden Rice' could save 3' 000 lives per day, at no risk to the environment or the consumer, but is delayed for at least a decade because of regulation: Regulation is, therefore, responsible for death of millions.

From Laboratory to Industry: Company's View

Michael Metzloff, Ph.D. Group Leader Crop Productivity Research Bayer BioScience N.V. Gent, Belgium

Because of the high speed of progress in biotechnology, flexible technology integration has become a must for all innovative companies active in this sector. In recent years also in the Agbiotech sector innovation areas have emerged with well-defined short, mid and long term goals for input and output trait development, such as enhanced stress tolerance and improved cotton fiber quality.

Technology transfer from academia to industry should be a “win-win” process. It requires flexibility and openness at both sides and the exploration of new trading points in the value creating chain. This can only be achieved by making use of various, often tailor-made management instruments, e.g. licensing-in agreements or bilateral research collaborations or participation in international research consortia, respectively. Innovative companies have all essential support functions in place to run this process time and labor efficiently, i.e. offices for Licensing, IP, Legal, Regulatory and Stewardship.

The “Abiotic Stress Tolerance R&D Program” in Bayer BioScience is a case example of how a well-balanced blend of in-house research and technology integration can accelerate the development of new traits and at the same time can open new routes of research in the scale of systems biology.

From Laboratory to Intellectual Property, Benefits and Drawbacks

Dr. Lars von Borcke, Plant Bioscience Limited (PBL)

The aim of this presentation is to demonstrate through some examples the difficulties and benefits of securing intellectual property rights in order to commercialise technologies which originated in the academic sector. PBL has over ten years experience in the commercialisation of academic technologies mainly in the AgBiotech field. In our experience we have found that in order to successfully protect and commercialise intellectual property the active contribution of the inventor is essential. However, the focus set through Universities' performance criteria is not always aligned with this goal.

Firstly, academic research differs from commercial research both in terms of areas studied and also in the type of data sets generated. Secondly, commercialisation of technologies is a long process and therefore extended delays can be expected before the potential monetary benefits are returned to the inventor. Thirdly, an added complication is that the usual set of motivational and performance factors are poorly aligned with the demands of the commercialisation of technologies. Fourthly, an added factor is the increasing reluctance of companies operating in the AgBiotech field to take risks on early stage technologies, due to the high costs of commercialising AgBiotech traits and the over optimistic outlook for AgBiotech in the 90s.

PBL has the experience, contacts and tools to help to secure intellectual property rights, commercialise AgBiotech technologies and help bridge the gap between research results and marketable patented technologies to return income to the inventor and the University.