

New plant breeding techniques



Brussels
2012, September 5th

List of techniques

- Cisgenesis
- Oligonucleotides directed mutagenesis
 - Zinc finger nuclease
- RNA dependant DNA methylation through RNAi/siRNA
 - Grafting
 - Reverse breeding
 - agro-infiltration
- Synthetic genomics

Legal status ?

Do plants modified with 8 techniques enter the application field of Directive 2001/18 ?

Legal definition of a GMO

Directive 2001/18/EC, a GMO is :

“an organism, with the exception of human beings, in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination”.

Legal definition of a GMO 2

Article 2, point 2B :

Some techniques are not considered to result in genetic modification (Annex IA, part 2)

Article 3, point 1 :

Directive shall not apply to organisms obtained through some techniques of genetic modification (Annex I B).

What is at stake ?

Techniques that do not enter 2001/18 application field are not subject to GMO legislation requirements :

no assessment, no labelling, no PMEM...

EU working group on new techniques

- Started in 2007 (under DG Envir)
- Final report made public in january 2012

Opinions

EU experts group

- A) Modification detectable and traceable =
GMO (ZFN3, Cisgenesis, grafting)
- B) Modification non detectable = not GMO
(ODM, ZFN1 and 2, grafting, Reverse
breeding)
- C) Not clear : RdDMethylation, Agro-infiltration,
Synthetic genomics

And now ?

- Member states have the report
- The EC's project to be known in October 2012
- EP most surely involved in the process

- Plants subjected to IPR due to existing patents
- Race quite hard to follow case by case

In the European Union

Mutagenesis (random) : Sunflower Expresssun, clearfield Oilseedrape (herbicide resistance).

Cisgenesis : Field trial of cisgenic barley (Denmark), cisgenic apples (Netherlands), potato (Ireland)

Grafting : grapevine (France), citrange (Spain)

In the USA

November 2011 (Cibus company) :
Oligonucleotide directed mutagenesis : Not
GMO

December 2011 (Cellestis company) :
Meganuclease GMO (gene inserted) / not
GMO (mutation)

Cisgenesis (Okanagan Specialty Fruits) : answer
expected

What is needed ?

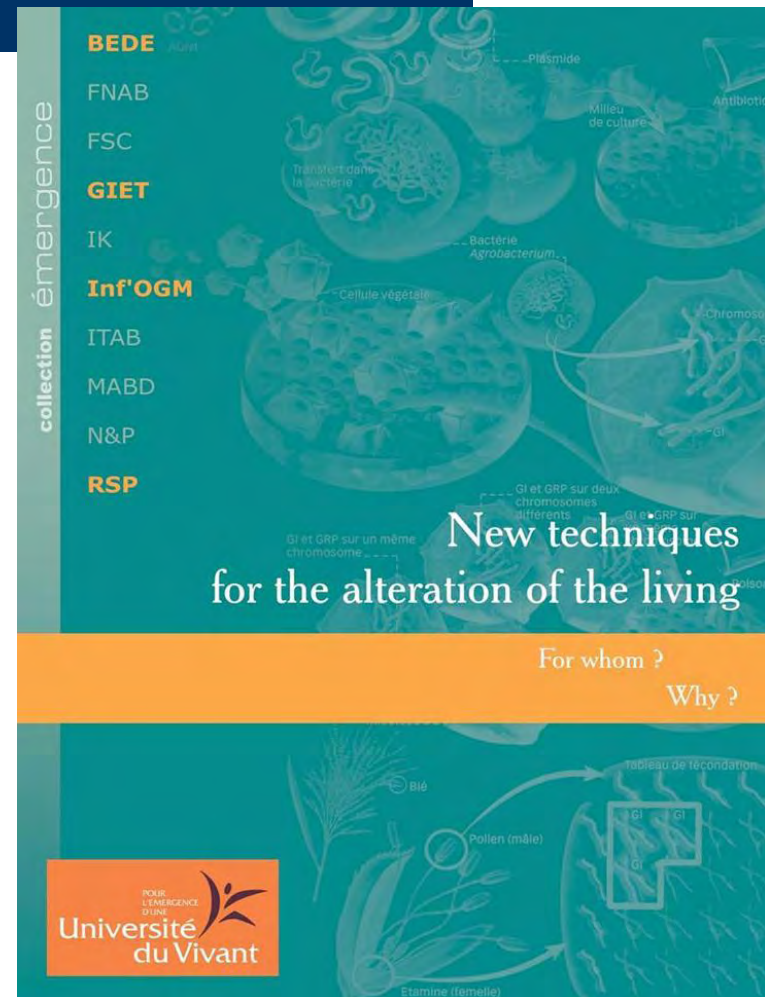


Make a political debate out of this issue !

Publication

« New techniques for the alteration of the living »
(French : september 2011)
(English : august 2012)

<http://www.infogm.org/spip.php?article5191>



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