

“Breeding Business”

Plant Breeder’s Rights and Patent Rights in the Plant Breeding Business

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- Concern in the seed business on the increasing impact of plant patents on the Plant Breeders Protection, more specifically on the Breeder's exemption.
- Access to genetic variation is the cornerstone for plant breeding and food security
- In 2009 the Dutch Organization Plantum.NL:
Position (in short): Breeder's exemption should overrule any patent rights on plants or plant traits



Study for Dutch Minister of Agriculture

- “Breeding Business, the future of plant breeding in the light of developments in patent rights and plant breeder’s rights”
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- Study team:
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 - Mr. Hans Raven, Intellectual Property expert

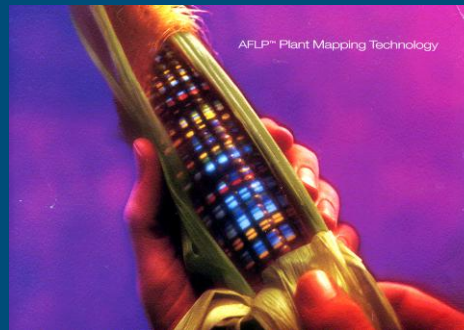
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Methodology

- Trends
 - Technology
 - IP
 - Breeding sector
 - Society
- Interviews with stakeholders
 - Farmers, seed/breeding companies (field, vegetables, ornamentals), public research, biotech companies
- Analysis of the basics of PBR and Patent Rights
- Evaluate the current uses and impact
- Suggestions for actions to the Government

Trends in Technology

- Explosion of genomic information and new breeding technologies led to a revolution in plant breeding:
Molecular Breeding: MAB and GMO's
- Other developments in breeding techniques
 - Molecular mutagenesis
 - Reverse breeding
 - Cisgenesis
 - Etc.



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Trends in the sector

- Since mid 70's: modern plant biotechnology emerges and becomes gradually integrated in plant breeding
- Since late 70's: large number of mergers and acquisitions leading to a highly consolidated seed industry
- Since 80's: patenting of living organisms – genes – biotechnologies; strengthening of PBR (UPOV '91)

IPR and Plant Breeding

- Plant breeding leads to a continuous flow of new cultivars
- Innovation is the driving force to obtain/enhance market share
- Recognition and protection of the value of the work of the breeders
- And to give opportunities to have a good return of investment

This needs:

- A good protection of intellectual property (IPR)
- Two systems:
- Plant Breeder's Rights and Patent Rights



Plant Breeder's Rights

- Necessary for the protection of the interest of plant breeders and seed producers
- UPOV: Union for the protection of New Varieties of Plants (Paris 1961), latest version UPOV '91
- New variety (cultivar) on basis of DUS examination:
 - Distinct
 - Uniform
 - Stable



Plant Breeder's Rights

- Legal right to forbid others to commercialize the protected variety

- Opportunities for return of investment

But also:

- **Breeder's exemption**

Any person is allowed to use a protected variety for further breeding

- crucial for continuous innovation
- continuous upgrading the germplasm



Patents in Plant Breeding

- Is linked with the introduction of Biotechnology in plant breeding (since 80's)
- Legal right to forbid others to commercialize a plant developed via a protected technology or a protected trait
- Patents are granted on basis of 3 legal requirements:
 - **Novelty** (not state of the art)
 - **Inventiveness** (not obvious for someone skilled in the art)
 - **Industrial applicability**



Biotechnology initiated patents in plant sciences

- Patents are becoming more important
- On breeding methods, technology, but also on traits and cultivars
- Strategic use
 - Multiple claims
 - Broad claims
 - Reach-through claims
- Patents: **No Breeder's exemption**



Basics of IPR systems

- It is in the interest of society that investments are made for innovation and inventors can obtain a good return on investment
- It is in the interest of society that knowledge is shared and new innovations stimulated
- **IPRs should combine these two goals.**
- A temporary exclusive right in return for disclosure
- **A balance** between the interest of the inventor and society

Suggestions by the project team:

■ IF

- Breeding should continue to be a main tool towards food security and sustainable agriculture;
- Access to genetic resources is considered to remain the cornerstone for creation of better varieties;
- Innovation strength of the sector should be preserved/increased;
- Diversity of companies is key for healthy competition;
- The breeding sector is to safeguard its position;
- A decent profit margin should be made possible, and
- IPRs are considered to be one of the keys, then

Then

1. Avoid strategic use of the patent system
 - Role of the sector itself
 - Should come up with solutions in short period
2. Radically improve the operation of the patent offices
 - Increase patent quality
 - Do not grant applications that are not inventive, not new, and that are not described clearly enough
3. Change patent law (in the Netherlands/ EU)
 - Introduce a full breeder's exemption, or
 - Exclude plants or plant traits from patentability
 - Consider the French/German solution

In addition:

- Look into competition law
 - Look into public research policies
 - Look into development policies (trade negotiations)
 - Look into genetic resources policies
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- Bottom line: always go back to the original purpose of IPRs:
 - balance the interest of the inventor and society.
 - to stimulate innovation in this important sector

Letter of Minister to Dutch parliament (April 19, 2010)

- Confirmation that patents and PBR seems out of balance; access to genetic resources needs to be supported
- French/German solution could be pursued but does not solve the problem
- to discuss with EC in relation to CPVO-evaluation
- to discuss with EC; suggest a review of Biotech-Directive
- Further support to the 'raising the bar' process at EPO
- Invite the sector to develop a FRAND code-of-conduct
- Put the issue on the agenda in Europe and beyond

Follow-up

- Plantum NL initiated debates in the seed sector to find a compromise
- The Dutch Government investigated the legal implications of the various options (ref national, EU and WTO rules)
- And decided to introduce a limited Breeder's exemption in patent law
- Dutch parliament invited the minister to start EU-wide discussions on the adaptation of patent law in EU.
- Renewal of IP positions in ESA and ISF. This will be presented in 2011/2012