Symposium on Plant Variety Protection
Future Strategy
for Enhancing the Effectiveness of the PVP System

The International Union
for the
Protection of New Varieties of Plants

Peter Button (Vice Secretary-General, UPOV)

Seoul, July 13, 2011
1. Introduction to UPOV
2. Varieties and Plant Variety Protection
3. Impact of PVP and UPOV membership
UPOV: INDEPENDENT INTERGOVERNMENTAL ORGANIZATION

The International Convention for the Protection of New Varieties of Plants established in 1961

The International Union for the Protection of New Varieties of Plants

Union internationale pour la protection des obtentions végétales
The boundaries shown on this map do not imply the expression of any opinion whatsoever on the part of UPOV concerning the legal status of any country or territory.
2001

The boundaries shown on this map do not imply the expression of any opinion whatsoever on the part of UPOV concerning the legal status of any country or territory.
69 Members of UPOV (green)
Initiating States & organizations (brown)
Development of Plant Variety Protection

![Graph showing the development of PBR Titles in Force: All UPOV from 1974 to 2010. The graph displays the number of titles in force and the number of UPOV members over time. The number of UPOV members increases steadily, while the number of titles in force grows significantly, reaching over 90,000 by 2010.](image)
“To provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society”
1. Introduction to UPOV

2. Varieties and Plant Variety Protection

3. Impact of PVP and UPOV membership
Importance of Plant Breeding

Technology Transfer

BREEDERS

NEW VARIETIES

FARMERS, GROWERS

CONSUMERS
Importance of Plant Breeding

BREEDERS

NEW VARIETIES

FARMERS, GROWERS

CONSUMERS

Technology Transfer

- Yield
- Profitability
- Resistance to pests and diseases
- Stress tolerance
- Harvestability
- Crop quality
- Input efficiency
- Variety diversity
- New markets
  ...etc.
Importance of Plant Breeding

Evolution of Maize Yield in USA

U.S. Corn Yields (1866-2006)

Open-Pollinated Varieties

Double-Cross Hybrids

Single-Cross Hybrids 1950-2006

b=0.0469 1907-1933
b=0.9617 1934-1955
b=2.3664 1956-1974
b=1.0791 1975-2006

Evolution of Wheat yield in France

FRANCE Wheat Yields (1815-2005)

b = 0.00 1815-1945
b = 0.092 1855-2005

Adaptation of Maize to Temperate Climate: the case of the Netherlands

Million Hectares

Year
Importance of Plant Breeding

Technology Transfer

- BREEDERS
- NEW VARIETIES
- FARMERS, GROWERS
- CONSUMERS

- Reduced food cost
- Efficient land use
- Nutritional quality, taste etc.
- Storage quality
- Diversity of products
Glucosinolate content from 100 µmoles (‘Jetneuf’) to 12 µmoles (‘Samouraï’)

LEAR: Low Erucic Acid

HOLLI: High Oleic and Low Linolenic
World Total Rapeseed Production

![Graph showing the increase in world total rapeseed production from 1965 to 2009.](image)
• Plant breeding is long and expensive
  **BUT**
• Plant varieties can be easily and quickly reproduced

→ Breeders need protection to recover investment
SOME KEY PROVISIONS
OF THE
UPOV CONVENTION
(1991 Act)

(a) Breeders and varieties
(b) Conditions of protection
(c) Breeder’s right and exceptions
Importance of Plant Variety Protection and UPOV

Registration Number by Breeder (Japan) (~March 31, 2009)

- Ornaments (823)
  - Individual: 49
  - Seed company: 244
  - National government: 187
  - Food company: 186
  - Local government: 12
  - Agricultural cooperative: 12

- Fruit Crops (1,054)
  - Individual: 194
  - Seed company: 467
  - National government: 143
  - Food company: 237
  - Local government: 128
  - Agricultural cooperative: 31

- Vegetable (1,253)
  - Individual: 74
  - Seed company: 419
  - National government: 527
  - Food company: 245
  - Local government: 82
  - Agricultural cooperative: 17

- Others (14,011)
  - Individual: 3,988
  - Seed company: 8,679
  - National government: 187
  - Food company: 186
  - Local government: 89
  - Agricultural cooperative: 128

Yasunori Ebihara, International Symposium (Seoul, August 2009)
SOME KEY PROVISIONS OF THE UPOV CONVENTION (1991 Act)

(a) Breeders and varieties
(b) Conditions of protection
(c) Breeder’s right and exceptions
CONDITIONS FOR GRANTING A BREEDER’S RIGHT

Criteria to be satisfied

• NOVELTY
CONDITIONS FOR GRANTING A BREEDER’S RIGHT

• **Novelty**: No sale or disposal within
  • 1 year - own territory
  • 4 years - other territory (6 years - trees/vine)
  • Exception for varieties of recent creation (new members / extension of protection)
CONDITIONS FOR GRANTING A BREEDER’S RIGHT

Criteria to be satisfied

• NOVELTY
• DISTINCTNESS
• UNIFORMITY

“DUS”

...
DISTINCTNESS

Apple: Fruit color

Apple: Flower bud color
UNIFORMITY

A uniform variety

A variety lacking uniformity
<table>
<thead>
<tr>
<th>STABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable variety</td>
</tr>
<tr>
<td>The relevant characteristics of the variety <strong>do not change</strong> through the generations.</td>
</tr>
<tr>
<td><img src="image1.png" alt="Image of stable variety" /></td>
</tr>
<tr>
<td>Original material</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variety not stable / Variété non stable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The relevant characteristics of the variety <strong>change</strong> through the generations. The plant grouping no longer retains the expression of the relevant characteristics of the original variety.</td>
</tr>
<tr>
<td><img src="image2.png" alt="Image of unstable variety" /></td>
</tr>
<tr>
<td>Original material</td>
</tr>
</tbody>
</table>
Nature of the DUS Examination

The “DUS Test” (field trial)
CON人大NITIONS FOR GRAN人大ING A BREEDER’S RIGHT

… Other requirements

• VARIETY DENOMINATION
CONDITIONS FOR GRANTING A BREEDER’S RIGHT

• **Denomination** [Article 20 and UPOV/INF/12/1]
  – No rights on the designation must hamper free use as the variety denomination
  – Breeder must submit variety under same denomination in all members of the Union
CONDITIONS FOR GRANTING A BREEDER’S RIGHT

… Other requirements

- VARIETY DENOMINATION
- FORMALITIES
- PAYMENT OF FEES

NO OTHER CONDITIONS!
SOME KEY PROVISIONS OF THE UPOV CONVENTION (1991 Act)

(a) Breeders and varieties
(b) Conditions of protection
(c) Breeder’s right and exceptions
MINIMUM DURATION OF PROTECTION

TREES and VINES 25 years
OTHER PLANTS 20 years

To be counted from the date of grant
Authorization of breeder required for:

- Production or reproduction (multiplication)
- Conditioning for the purpose of propagation
- Offering for sale
- Selling or marketing
- Exporting
- Importing
- Stocking for any of the above purposes

.... for any protected variety
MATERIAL COVERED

• All propagating material

• Harvested material under certain conditions

• Certain products (optional)
MATERIAL COVERED

• All propagating material

• Harvested material if obtained through unauthorized use of propagating material unless reasonable opportunity for breeder to exercise his right

• Certain products (optional)
In addition to the protected variety itself,

**VARIETIES:**

- **not clearly distinguishable** from the protected variety

- which are **essentially derived** from the protected variety

- **whose production requires the repeated use** of the protected variety
  
  *e.g. hybrids*
EXCEPTIONS TO THE BREEDER’S RIGHT
EXCEPTIONS TO THE BREEDER’S RIGHT

Compulsory Acts done:
• privately and for non-commercial purposes
• for experimental purposes
• breeding other varieties (breeder’s exemption”)

Optional
Farm-saved seed
EXCEPTIONS TO THE BREEDER’S RIGHT

Compulsory

Acts done:

• privately and for non-commercial purposes

• for experimental purposes

• breeding other varieties (breeder’s exemption”)
THE BREEDER’S EXEMPTION: Example

*Except for:
(i) varieties which are essentially derived from the protected variety, where the protected variety is not itself an essentially derived variety,
(ii) varieties which are not clearly distinguishable in accordance with Article 7 from the protected variety and
(iii) varieties whose production requires the repeated use of the protected variety.

Protected Variety A

Variety B

Variety C

Commercialization

Authorization of Breeder 1 NOT required

Authorization of Breeder 2 NOT required

Authorization of Breeder 1 NOT required*
ADVANTAGES OF THE BREEDER’S EXEMPTION

• Germplasm sources remain accessible to the community of breeders

• Genetic basis for plant improvement is broadened and is actively conserved

• Variety improvement is enhanced

• Opportunity for all breeders to share in benefits of breeding activities
EXCEPTIONS TO THE BREEDER’S RIGHT

Compulsory

Acts done:

• privately and for non-commercial purposes

• for experimental purposes

• breeding other varieties (breeder’s exemption)”
EXCEPTIONS TO THE BREEDER’S RIGHT

• Compulsory
  (i) Acts done privately and for non-commercial purposes

• amateur gardener

Acts Possibly falling within the scope of the exception
EXCEPTIONS TO THE BREEDER’S RIGHT

• Compulsory

(i) Acts done privately and for non-commercial purposes

propagation of a variety by a farmer exclusively for the production of a food crop to be consumed entirely by that farmer and the dependents of the farmer living on that holding therefore "subsistence farming" where these constitute acts done privately and for non-commercial purposes, may be considered by a UPOV member to be excluded from the scope of the breeder’s right
EXCEPTIONS TO THE BREEDER’S RIGHT

Compulsory
Acts done:
• privately and for non-commercial purposes
• for experimental purposes
• breeding other varieties (breeder’s exemption”)

Optional
Farm-saved seed
A Contracting Party may restrict breeder’s rights in order to permit farmers to use:

- for propagating purposes on their own holdings the product of the harvest obtained on their own holdings from the protected variety within reasonable limits subject to safeguarding legitimate interests of the breeder

[Article 15(2) and Recommendation of the Diplomatic Conference]
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SECTION III

Reports on Studies Conducted in Individual Countries:

Argentina
China
Kenya
Poland
Republic of Korea
FINDINGS: SUMMARY

- Investment in breeding
- More breeders and increased diversity of breeders
- More and better varieties for farmers and growers
- Increased income for farmers
- Rural development
- Development of international markets
Importance of Plant Variety Protection and UPOV

Figure 55. Republic of Korea: Breeding Investment-Chinese Cabbage

- Companies
- Government Research Stations
Importance of Plant Variety Protection and UPOV

Figure 29. China: Number of Breeders in Henan Province (Maize)

Figure 30. China: Number of Breeders in Henan Province (Wheat)

PVP introduction / UPOV Membership

- Number of other breeders
- Number of breeders at the Provincial Research Institute
Figure 33. China: Number of Applications by Categories of Applications (Agriculture)
Figure 52. Republic of Korea: Number of Rose Breeders

Figure 53. Republic of Korea: Number of Rice Breeders

Importance of Plant Variety Protection and UPOV
Importance of Plant Variety Protection and UPOV

Figure 13. Argentina: Number of Titles Granted

Regulatory decree No. 2183/91

UPOV Membership

Non-residents
Residents

1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002

100
50
250
200
150
Conference conclusions: […]

Intellectual property protection is crucial for a sustainable contribution of plant breeding and seed supply. An effective system of plant variety protection is a key enabler for investment in breeding and the development of new varieties of plants. A country’s membership of UPOV is an important global signal for breeders to have the confidence to introduce their new varieties in that country. […]
Importance of Plant Variety Protection and UPOV

Export of Kenyan Cut Flowers

Evans Sikinyi, Second World Seed Conference

Figure 2: Export of Kenyan Cut Flowers

Value (Billion Kshs) vs. Volume (Tons)

- PVP Operational
- UPOV Membership

Importance of Plant Variety Protection and UPOV
UPOV

Good shape
High value
Healthy growth
THANK YOU