Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)

Eleventh Session
Madrid, September 16 to 18, 2008

PREPARATORY WORKSHOP

September 15, 2008

PROGRAM

1. **Introduction to UPOV**
2. **Overview of the Technical Working Parties (TWPs)**
3. **Guidance for DUS Examination**
   - General Introduction (document TG/1/3)
   - TGP documents
   - Test Guidelines and characteristics
   - Cooperation
4. **Role of the TWPs and BMT**
5. **Situation in UPOV concerning the possible use of molecular techniques in the DUS Examination**
6. **The Concept of Essentially Derived Varieties**
7. **The Role of UPOV in Variety Identification**
8. **The UPOV website**
9. **Agenda for the BMT session**

UPOV

1. INTRODUCTION TO UPOV

UPOV

UPOV

The International Convention for the Protection of New Varieties of Plants

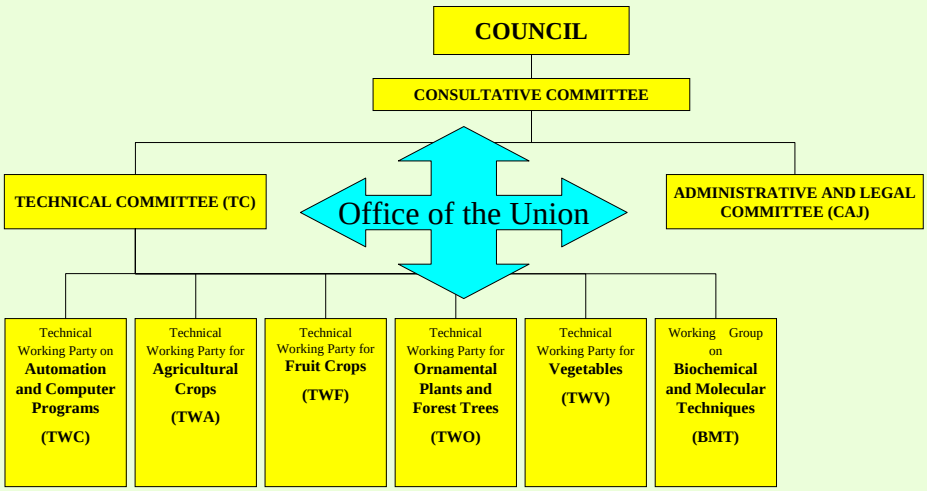
established in 1961

The International Union for the Protection of New Varieties of Plants

Union internationale pour la protection des obtentions végétales

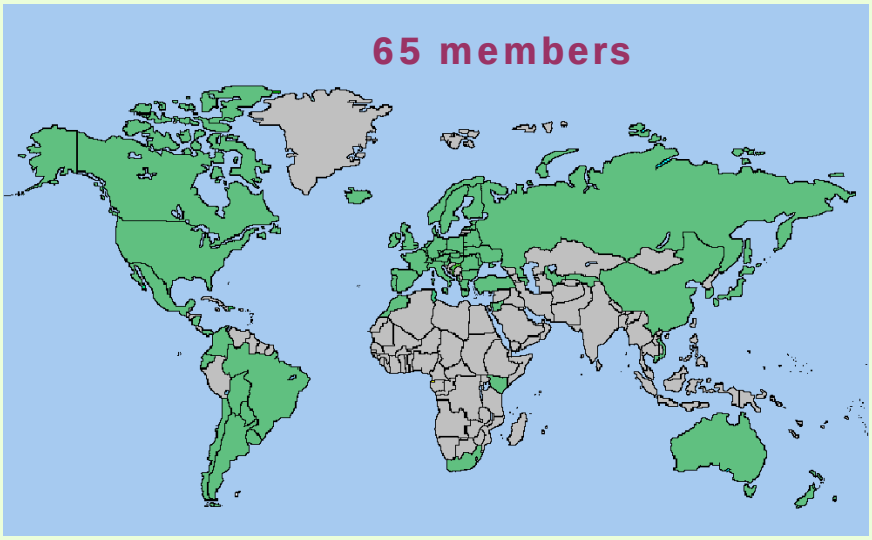
- **Members of the Union**
  - States
  - Intergovernmental Organization(s)
- **Organs established by the Convention**
  - Council
  - Office of the Union
- **Other Bodies**

UPOV Structure



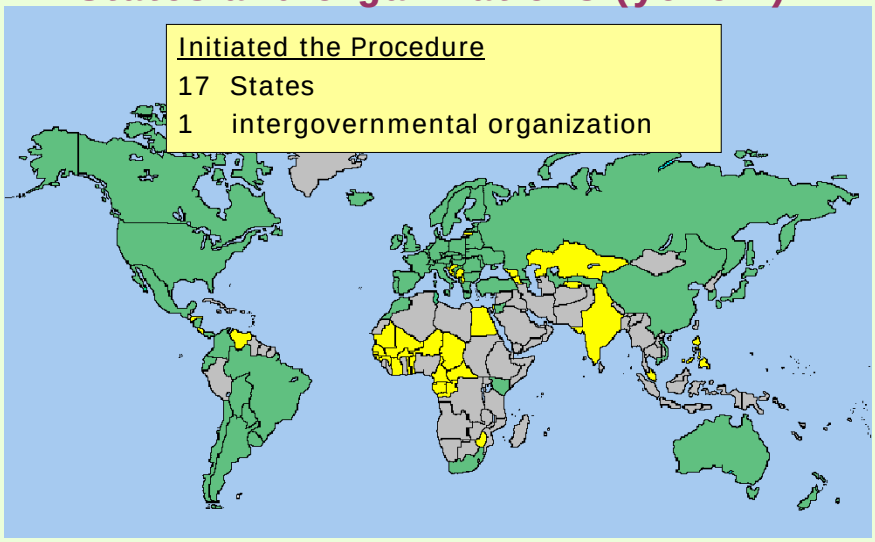
UPOV

UPOV Membership / Territories covered

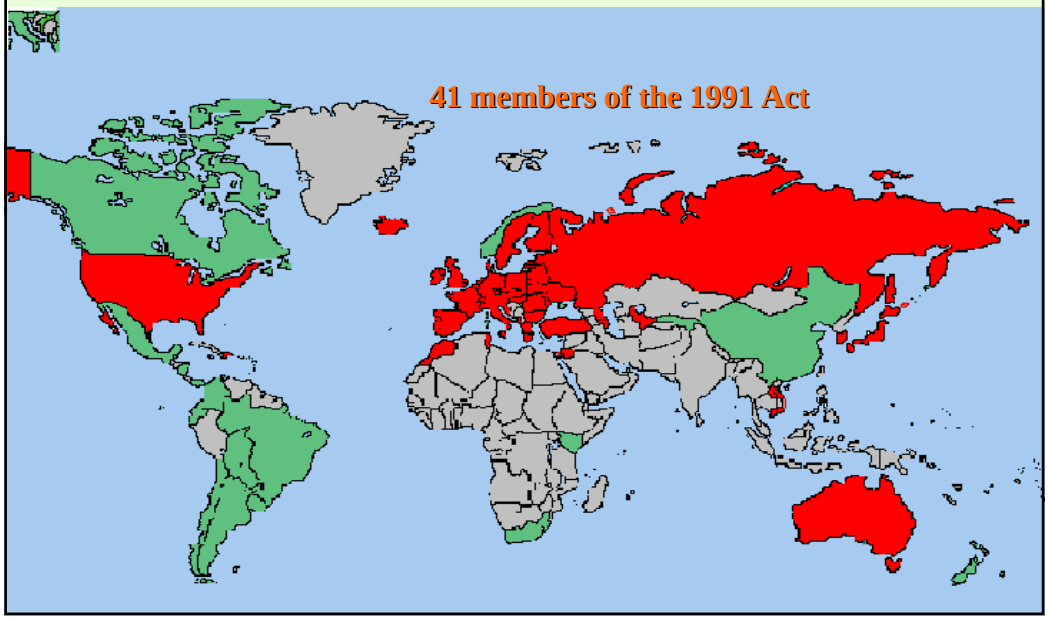


UPOV

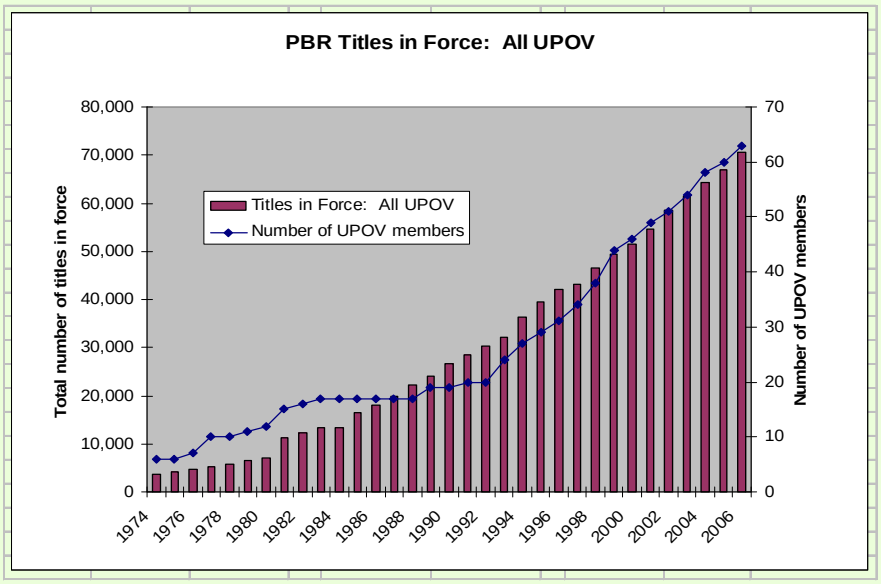
Members of UPOV (green) and initiating States and organizations (yellow)



UPOV Membership / Territories covered



Development of Plant Variety Protection



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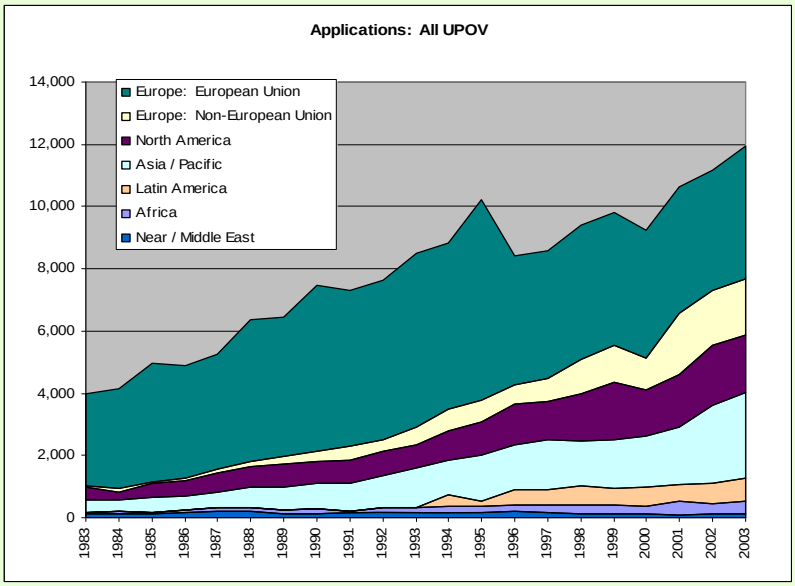
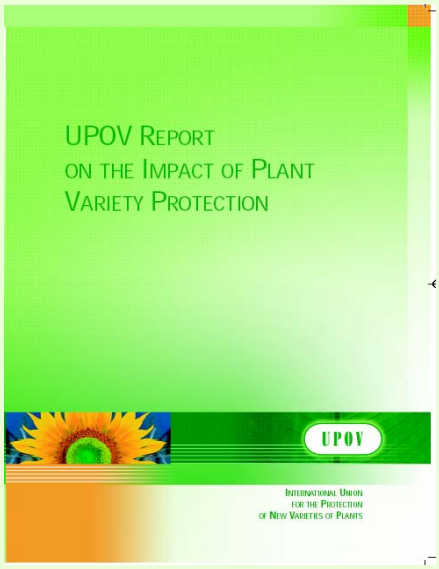


UPOV MISSION STATEMENT

"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*"



Available at: www.upov.int "News & Events"

2. OVERVIEW OF THE UPOV TECHNICAL WORKING PARTIES (THE DUS EXAMINATION)

UPOV

THE CONDITIONS FOR GRANTING A BREEDER'S RIGHT

Criteria to be satisfied

- NOVELTY
- **D**ISTINCTNESS
- **U**NIFORMITY
- **S**TABILITY

} **"DUS"**

UPOV

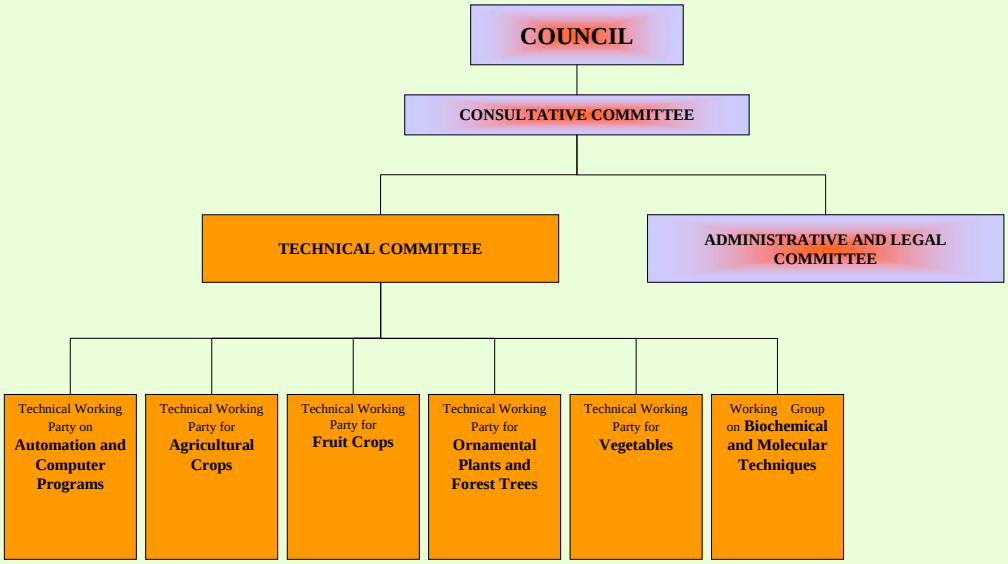
THE CONDITIONS FOR GRANTING A BREEDER'S RIGHT

Other conditions

- VARIETY DENOMINATION
- FORMALITIES
- PAYMENT OF FEES

NO OTHER CONDITIONS!

UPOV Structure



3. GUIDANCE FOR DUS EXAMINATION

Guidance for DUS Examination

facilitates:

BEST PRACTICE (based on experience)

=> good decisions

=> good definition of the object of protection (strong protection)

=> efficiency in method of examination (learn from the best)

HARMONIZATION

=> efficiency

- mutual acceptance of DUS reports (minimize cost of examination for individual authorities)
- mutual recognition of variety descriptions (all parties speak the same “language”)
- simple and cheap system for applicants (minimize cost for breeders)

UPOV provides guidance by:

- General Introduction (document TG/1/3)
- TGP documents
- Test Guidelines
- Cooperation

UPOV provides guidance by:

- **General Introduction (document TG/1/3)**
  ("General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants")

- TGP documents
- Test Guidelines
- Cooperation

UPOV provides guidance by:

- General Introduction (document TG/1/3)

- **TGP documents** (associated to General Introduction)

- Test Guidelines
- Cooperation

TG/1/3 General Introduction

"Associated" TGP Documents

Ref.	Title
TG/00	List of TGP Documents and Latest Issue Dates
TGP/1	General Introduction With Explanations
TGP/2	List of Test Guidelines Adopted by UPOV
TGP/3	Varieties of Common Knowledge
TGP/4	Constitution and Maintenance of Variety Collections
TGP/5	Experience and Cooperation in DUS testing
TGP/6	Arrangements for DUS testing
TGP/7	Development of Test Guidelines
TGP/8	Trial Design and Techniques Used in the Examination of DUS
TGP/9	Examining Distinctness
TGP/10	Examining Uniformity
TGP/11	Examining Stability
TGP/12	Special Characteristics
TGP/13	Guidance for New Types and Species
TGP/14	Glossary of Technical, Botanical and Statistical Terms Used in UPOV Documents
TGP/15	New Types of Characteristics

UPOV provides guidance by:

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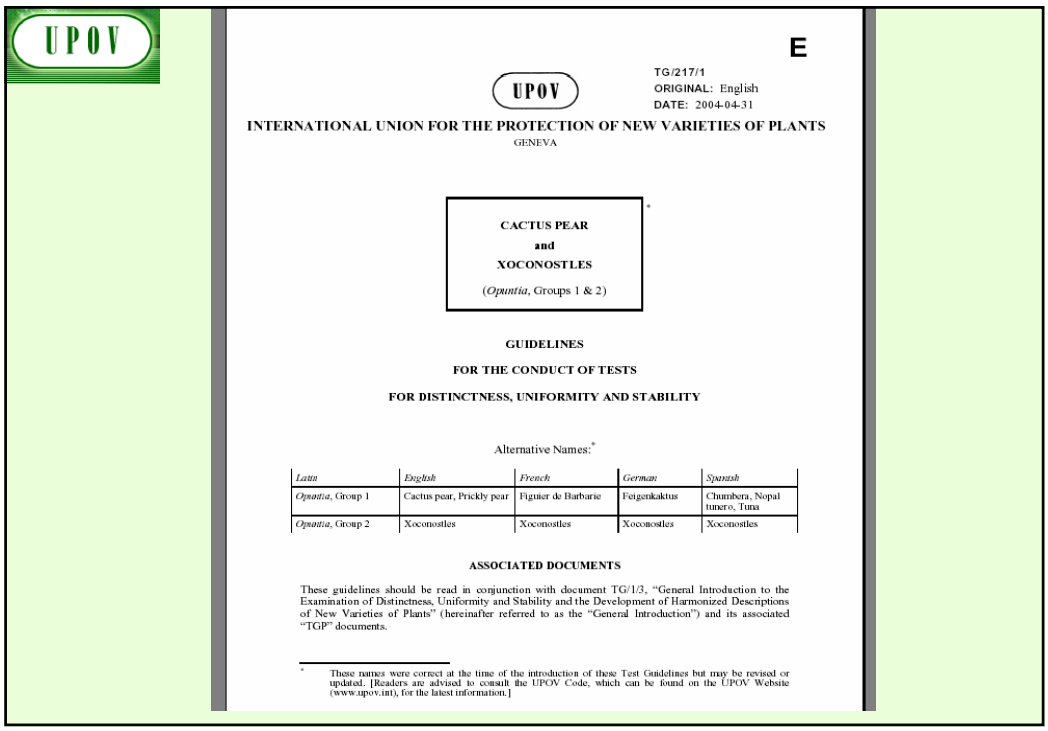
- **Test Guidelines**
- Cooperation



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TG/217/1
ORIGINAL: English
DATE: 2004-04-31

UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

CACTUS PEAR
and
XOCONOSTLES
(*Opuntia*, Groups 1 & 2)

GUIDELINES
FOR THE CONDUCT OF TESTS
FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

Latin	*English*	*French*	*German*	*Spanish*
Opuntia, Group 1	Cactus pear, Prickly pear	Figuier de Barbarie	Feigenkaktus	Chumbera, Nopal tunero, Tuna
Opuntia, Group 2	Xoconostles	Xoconostles	Xoconostles	Xoconostles

ASSOCIATED DOCUMENTS

These guidelines should be read in conjunction with document TG/1/3, "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (hereinafter referred to as the "General Introduction") and its associated "TGP" documents.

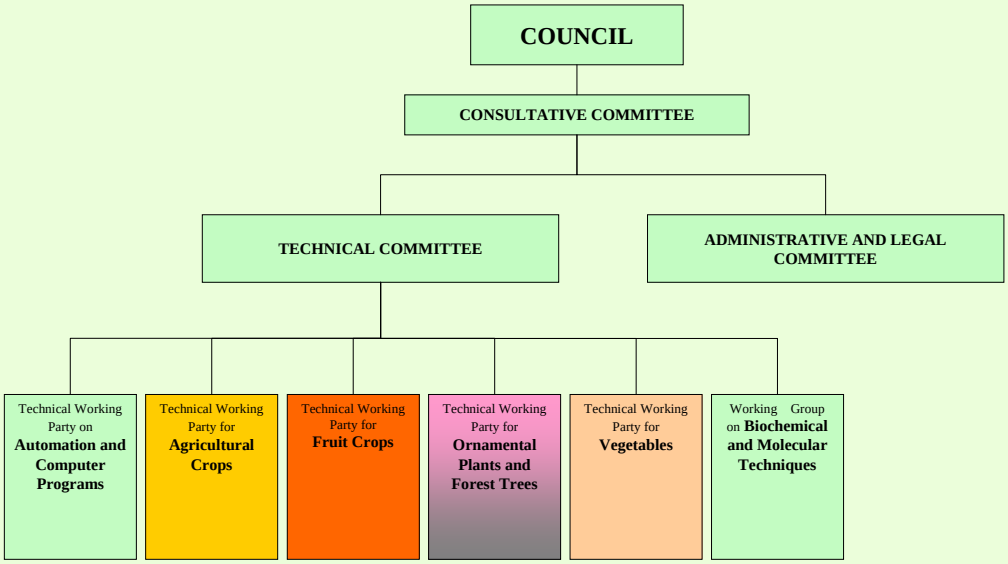
* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

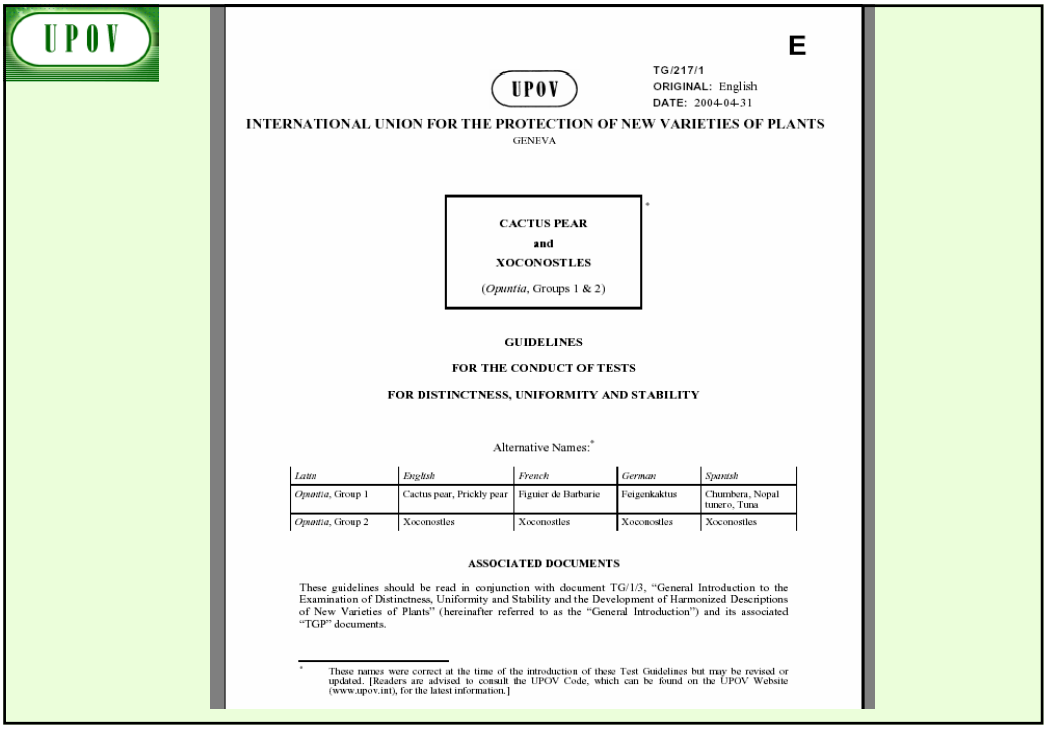
UPOV

Test Guidelines

- **249 Test Guidelines** adopted
- Further **62 to be discussed** in 2008 (19 revisions / 43 new Test Guidelines)

UPOV Structure





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UPOV

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UPOV

10 Chapters of UPOV Test Guidelines

1. Subject of the Test Guidelines
2. Material Required
3. Methods of Examination
4. Assessment of Distinctness, Uniformity and Stability
5. Grouping of Varieties and Organization of the Growing Trial
6. Introduction to the Table of Characteristics
7. **Table of Characteristics**
8. Explanation on the Table of Characteristics
9. Literature
10. Technical Questionnaire

UPOV

"CHARACTERISTICS"

- may have direct commercial relevance
  - Flower color (ornamental)
  - Fruit color
- but **commercial relevance NOT required**
  - Leaf shape

Selection of Characteristics

The basic requirements that a characteristic should fulfill before it is used for DUS testing or producing a variety description are that its expression (TG/1/3: Section 4.2.1) :

(a) **results from a given genotype** or combination of genotypes;

(b) is sufficiently **consistent and repeatable** in a **particular environment**;

(c) exhibits sufficient **variation between varieties** to be able to establish distinctness;

(d) is capable of **precise definition and recognition**;

(e) allows **uniformity requirements** to be fulfilled;

(f) allows **stability requirements** to be fulfilled, meaning that it produces consistent and repeatable results after repeated propagation or, where appropriate, at the end of each cycle of propagation.

Selection of Characteristics

- **Yield ???**
- **Straw strength ???**

Etc.

Selection of Characteristics

Criteria	Fruit: color	Leaf: shape	Yield	Straw strength
(a) results from a given genotype or combination of genotypes	Yes	Yes		
(b) sufficiently consistent and repeatable in a particular environment	Yes	Yes		
(c) exhibits sufficient variation between varieties to be able to establish distinctness	Yes	Yes		
(d) is capable of precise definition and recognition	Yes	Yes		
(e) allows uniformity requirements to be fulfilled	Yes	Yes		
(f) allows stability requirements to be fulfilled	Yes	Yes		
Commercial value	Yes	No		
ACCEPTABILITY	Yes	Yes		

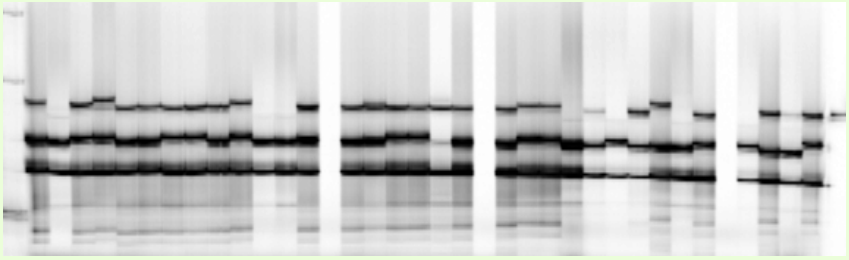
Selection of Characteristics

Criteria	Fruit: color	Leaf: shape	Yield	Straw strength
(a) results from a given genotype or combination of genotypes	Yes	Yes	Yes	Yes
(b) sufficiently consistent and repeatable in a particular environment	Yes	Yes	(No)	(No)
(c) exhibits sufficient variation between varieties to be able to establish distinctness	Yes	Yes	???	???
(d) is capable of precise definition and recognition	Yes	Yes	(No)	???
(e) allows uniformity requirements to be fulfilled	Yes	Yes	???	???
(f) allows stability requirements to be fulfilled	Yes	Yes	???	???
Commercial value	Yes	No	Yes	Yes
ACCEPTABILITY	Yes	Yes	No	No

Special Characteristics: Disease Resistance

Criteria	Disease Resistance
(a) results from a given genotype or combination of genotypes	*Knowledge of nature of genetic control of resistance is important
(b) sufficiently consistent and repeatable in a particular environment	*Standardize conditions (greenhouse / laboratory) & methodology *Standardize inoculum *Ring-test
(c) exhibits sufficient variation between varieties to be able to establish distinctness	*Susceptible / Resistant OR varying degrees of resistance?
(d) is capable of precise definition and recognition	*Define and recognize races and strains
(e) allows uniformity requirements to be fulfilled	see above
(f) allows stability requirements to be fulfilled	see above
	Difficult and expensive

Molecular Techniques?



UPOV provides guidance by:

- General Introduction (document TG/1/3)
- TGP documents
- Test Guidelines

- **Cooperation**

Test Guidelines

- **249 Test Guidelines** adopted

but...

- **>2,500 genera and species** with varieties examined for PBR

UPOV

GENIE Database

(Genus / species)

UPOV

GENIE Database 

Variety denomination related information

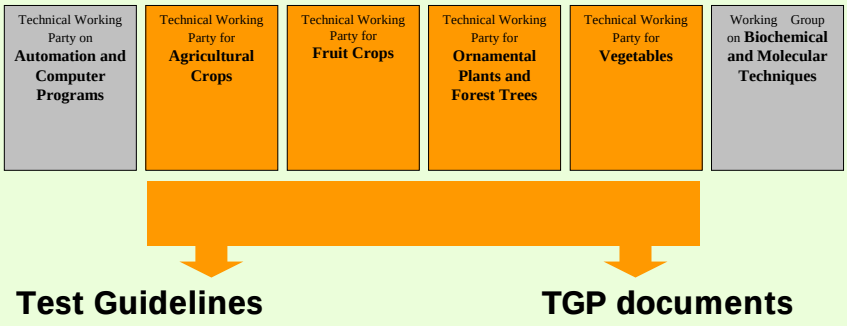
Protection offered by UPOV members

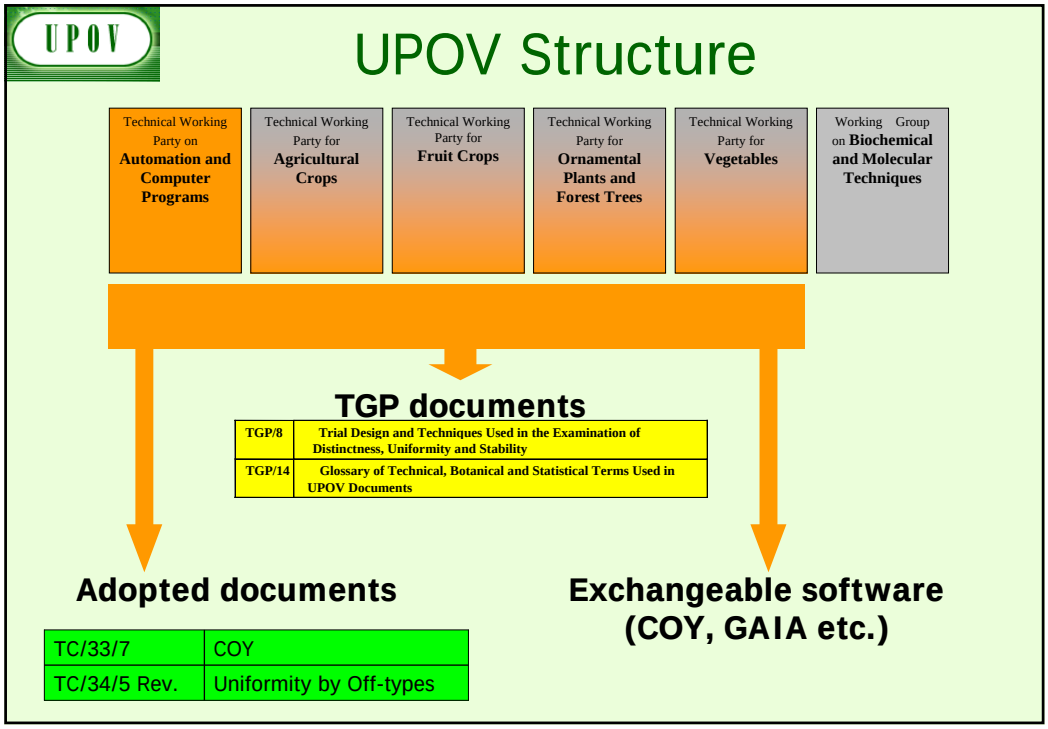
DUS information

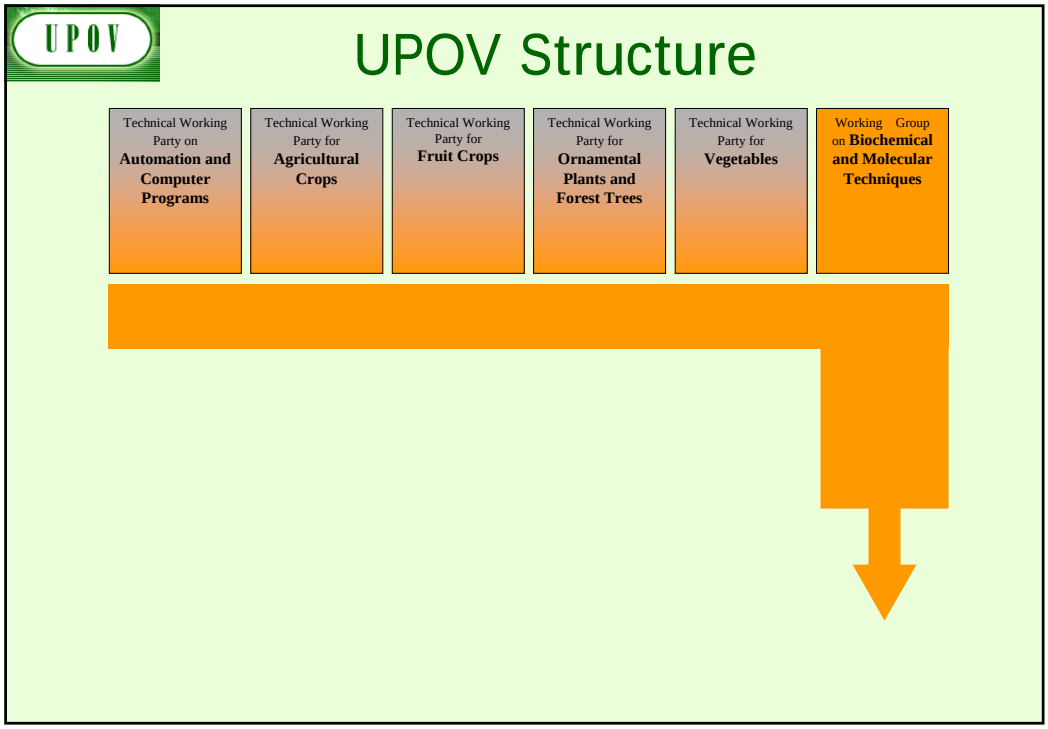
- UPOV Test Guidelines
- practical experience of UPOV (document TC/44/4)
- cooperation in DUS examination (document C/41/5)

4. ROLE OF THE TECHNICAL WORKING PARTIES AND THE BMT

UPOV Structure




UPOV
UPOV Structure
Technical Working Party on Automation and Computer Programs
Technical Working Party for Agricultural Crops
Technical Working Party for Fruit Crops
Technical Working Party for Ornamental Plants and Forest Trees
Technical Working Party for Vegetables
Working Group on Biochemical and Molecular Techniques
TGP documents
TGP/8 Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability
TGP/14 Glossary of Technical, Botanical and Statistical Terms Used in UPOV Documents
Adopted documents
TC/33/7 COY
TC/34/5 Rev. Uniformity by Off-types
Exchangeable software (COY, GAIA etc.)


UPOV
UPOV Structure
Technical Working Party on Automation and Computer Programs
Technical Working Party for Agricultural Crops
Technical Working Party for Fruit Crops
Technical Working Party for Ornamental Plants and Forest Trees
Technical Working Party for Vegetables
Working Group on Biochemical and Molecular Techniques

Role of the BMT

(see document BMT/11/2: Annex, page 2)

The BMT is a group open to DUS experts, biochemical and molecular specialists and plant breeders, whose role is to:

(i) Review general developments in biochemical and molecular techniques;

(ii) Maintain an awareness of relevant applications of biochemical and molecular techniques in plant breeding;

(iii) Consider the possible application of biochemical and molecular techniques in DUS testing and report its considerations to the TC;

(iv) If appropriate, establish guidelines for biochemical and molecular methodologies and their harmonization […];

(v) Consider initiatives from TWPs, for the establishment of crop specific subgroups […];

(vi) Develop guidelines regarding the management and harmonization of databases of biochemical and molecular information, in conjunction with the TWC;

(vii) Receive reports from Crop Subgroups and the BMT Review Group;

(viii) Provide a forum for discussion on the use of biochemical and molecular techniques in the consideration of essential derivation and variety identification.

Role of the BMT

Consider the possible application of biochemical and molecular techniques in DUS testing

(see document BMT/11/2: Annex, page 2)

The BMT is a group open to DUS experts, biochemical and molecular specialists and plant breeders, whose role is to: […]

(iii) Consider the possible application of biochemical and molecular techniques in DUS testing and report its considerations to the TC;

(v) Consider initiatives from TWPs, for the establishment of crop specific subgroups […];

(vii) Receive reports from Crop Subgroups and the BMT Review Group;

=> BMT/11 agenda items 4, 6 and 13 and
=> "Situation in UPOV concerning the possible use of molecular techniques in the DUS Examination" … to follow

Role of the BMT

Guidance and harmonization for a range of applications

(see document BMT/11/2: Annex, page 2)
The BMT is a group open to DUS experts, biochemical and molecular specialists and plant breeders, whose role is to: […]

(iv) **If appropriate, establish guidelines for biochemical and molecular methodologies and their harmonization […];**

(vi) **Develop guidelines regarding the management and harmonization of databases of biochemical and molecular information, in conjunction with the TWC;**

=> BMT/11 agenda items 7 to 10

Role of the BMT

Raise awareness of general developments:

(see document BMT/11/2: Annex, page 2)
The BMT is a group open to DUS experts, biochemical and molecular specialists and plant breeders, whose role is to:

(i) **Review general developments in biochemical and molecular techniques;**

(ii) **Maintain an awareness of relevant applications of biochemical and molecular techniques in plant breeding;**

=> BMT/11 agenda item 5

Role of the BMT

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The BMT is a group open to DUS experts, biochemical and molecular specialists and plant breeders, whose role is to: […]

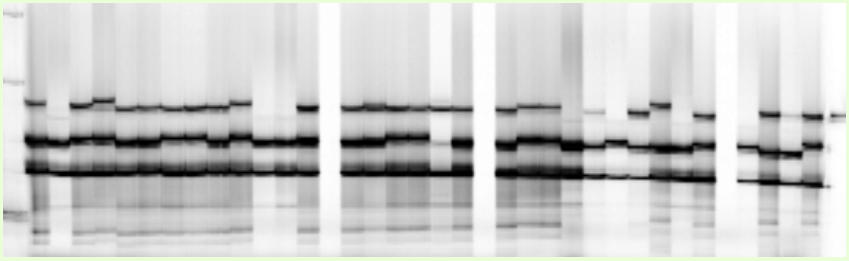
(viii) Provide a forum for discussion on the use of biochemical and molecular techniques in the consideration of essential derivation and variety identification.

=> BMT/11 agenda items 11 and 12 and
=> presentations to follow

5. Situation in UPOV concerning the possible use of molecular techniques in the DUS Examination

UPOV

Molecular Techniques?



UPOV

Legal and other considerations

- **Conformity with the UPOV Convention**
- **Potential impact on the strength of protection**

Technical considerations

- **Reliability and robustness of techniques**
- **Accessibility of the technology**
- **Harmonization of methodologies**
- **Cost of examination**
- **Implications for breeders (e.g. cost and time involved for new uniformity requirements)**

UPOV

Harmonized approach

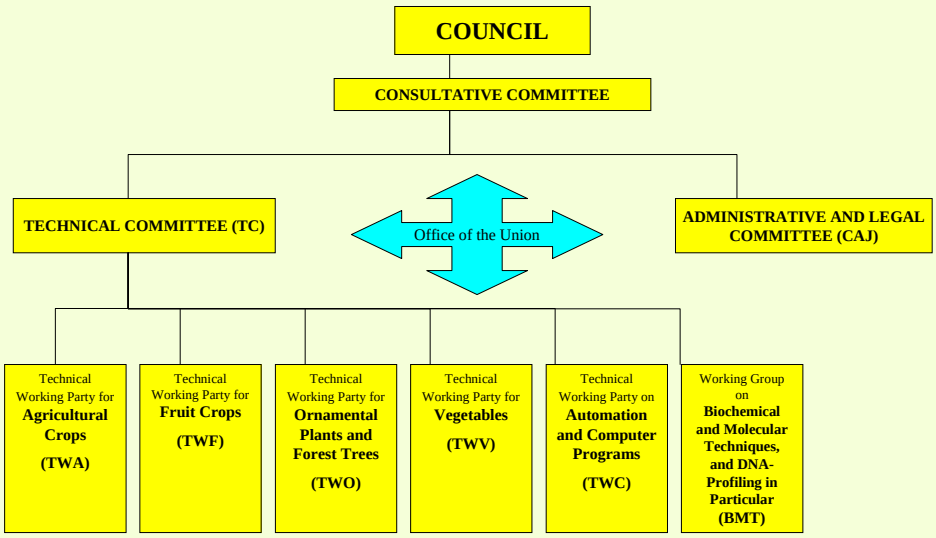
Harmonization

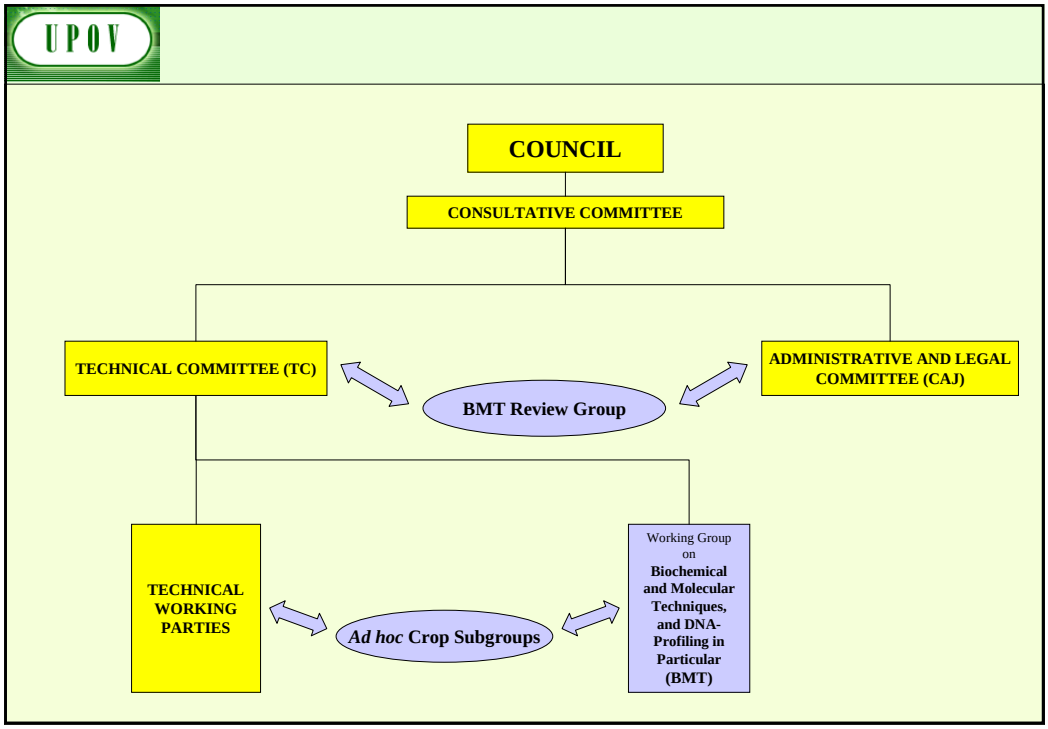
⇒ facilitates cooperation in DUS testing

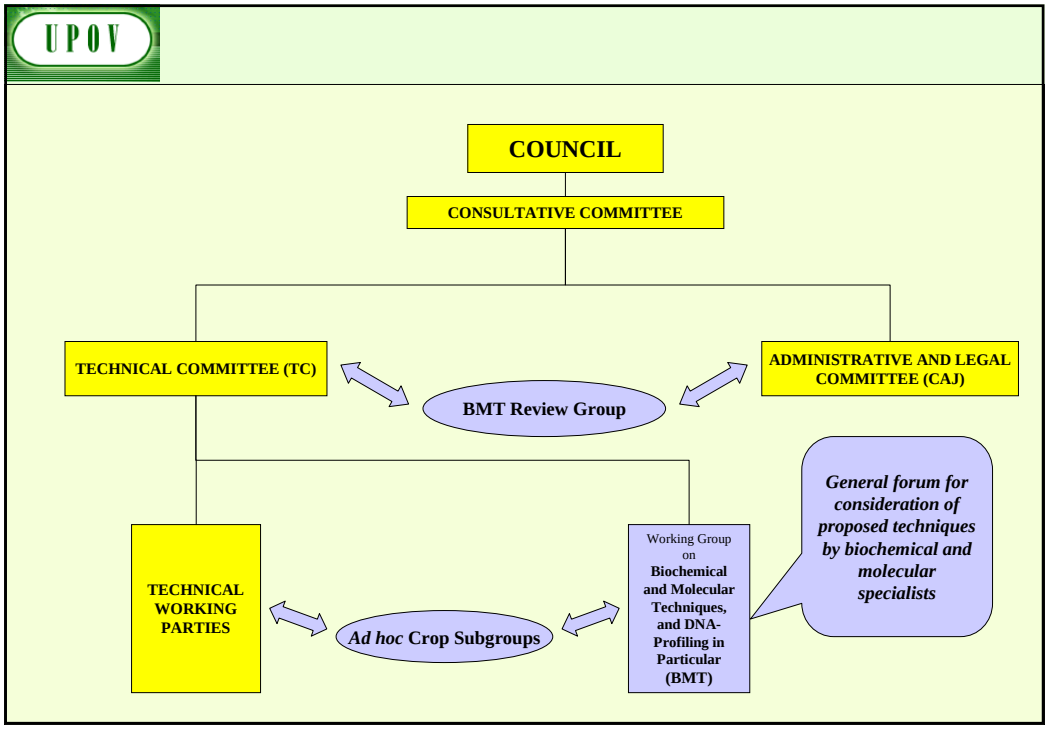
e.g. purchase of DUS reports

⇒ internationally recognized variety descriptions (effective protection)

UPOV




UPOV
COUNCIL
CONSULTATIVE COMMITTEE
TECHNICAL COMMITTEE (TC)
BMT Review Group
ADMINISTRATIVE AND LEGAL COMMITTEE (CAJ)
TECHNICAL WORKING PARTIES
Ad hoc Crop Subgroups
Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)


UPOV
COUNCIL
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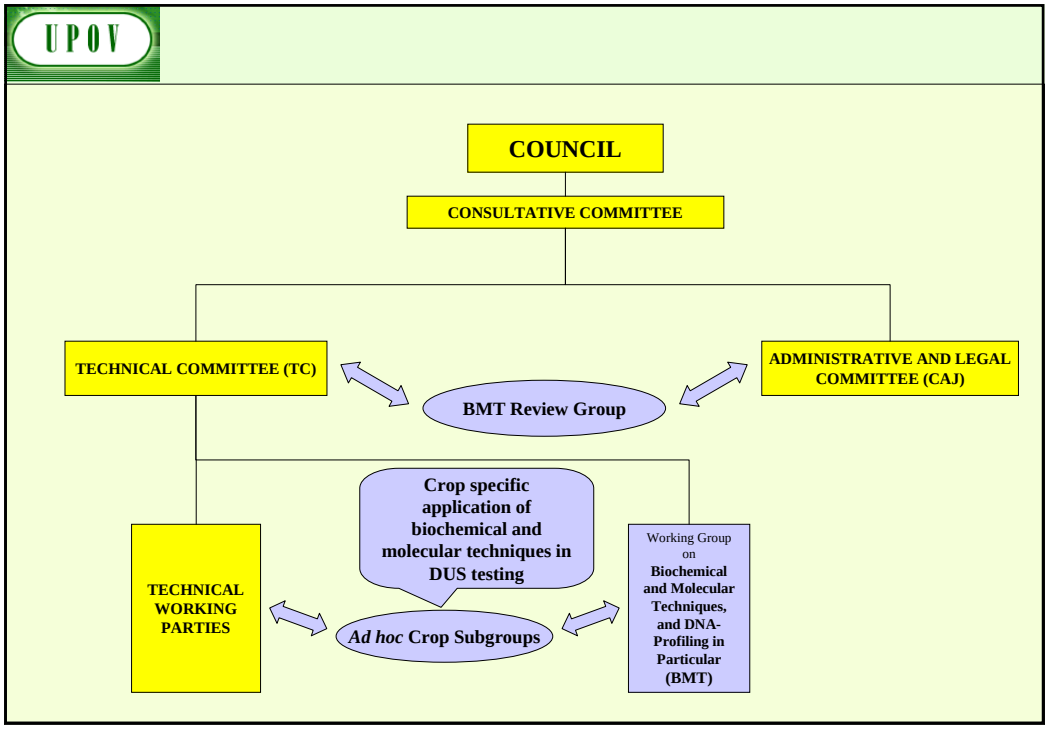
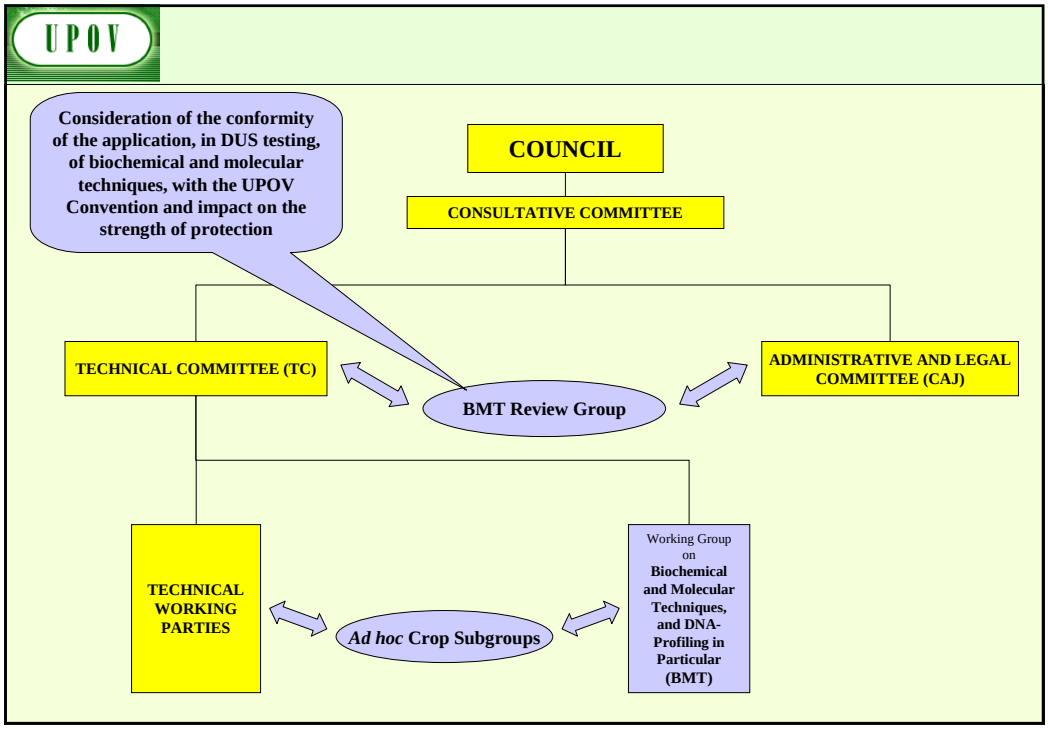
TECHNICAL WORKING PARTIES
Ad hoc Crop Subgroups
Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)
General forum for consideration of proposed techniques by biochemical and molecular specialists


UPOV
COUNCIL
CONSULTATIVE COMMITTEE
TECHNICAL COMMITTEE (TC)
BMT Review Group
ADMINISTRATIVE AND LEGAL COMMITTEE (CAJ)
Crop specific application of biochemical and molecular techniques in DUS testing
TECHNICAL WORKING PARTIES
Ad hoc Crop Subgroups
Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)


UPOV
Consideration of the conformity of the application, in DUS testing, of biochemical and molecular techniques, with the UPOV Convention and impact on the strength of protection
COUNCIL
CONSULTATIVE COMMITTEE
TECHNICAL COMMITTEE (TC)
BMT Review Group
ADMINISTRATIVE AND LEGAL COMMITTEE (CAJ)
TECHNICAL WORKING PARTIES
Ad hoc Crop Subgroups
Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)

UPOV

The options:

- ***Option 1:***

  Molecular Markers as predictors of Traditional Characteristics:

  (a) gene specific marker

- ***Option 2:***

  Calibration of Molecular Markers against Traditional Characteristics in the management of Reference collections

- ***Option 3:***

  New system

UPOV

OPTION 1 (a)

Molecular Markers as predictors of Traditional Characteristics:

(a) gene specific marker

UPOV

View of the BMT Review Group, Technical Committee, Administrative and Legal Committee

Option 1(a) for a gene specific marker of a phenotypic characteristic:

Proposal: gene specific marker for herbicide tolerance introduced by genetic modification

was, on the basis of the assumptions in the proposal, acceptable within the terms of the UPOV Convention and would not undermine the effectiveness of protection offered under the UPOV system.

UPOV

Assumptions for a gene specific marker:

(a) **DUS examination**: same no. of plants, growing cycles, DUS criteria;

(b) **Linkage**: ensure that the marker is a reliable predictor;

(c) **Different markers** for same gene would be treated as different methods for examining the **same characteristic**;

(d) **Different genes** would be treated as different methods for examining the **same characteristic**;

(e) **Different markers** linked to **different regulatory elements** for the **same gene** would all be treated as different methods for examining the **same characteristic**. (further consideration would be given to this matter at a later stage)

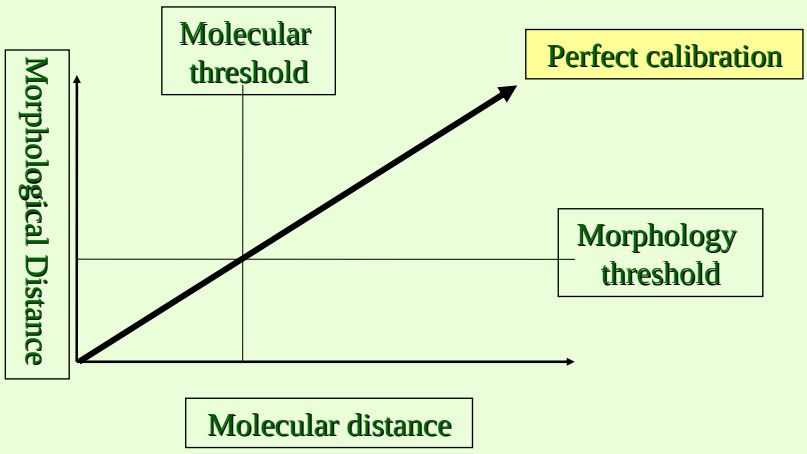
UPOV

OPTION 2

Calibration of Molecular Markers
against Traditional Characteristics
in the management of Reference collections

UPOV

Option 2: Calibration of threshold levels



UPOV

View of the BMT Review Group, Technical Committee, Administrative and Legal Committee

Option 2: Calibration of threshold levels for molecular characteristics against the minimum distance in traditional characteristics

Proposal: Option 2 for Maize, Oilseed Rape and Rose

where used for the management of reference collections was, on the basis of the assumptions in the proposals, acceptable within the terms of the UPOV Convention and would not undermine the effectiveness of protection offered under the UPOV system

- whilst recognizing the need to improve the relationship between morphological and molecular distances.

UPOV

Assumptions for calibration of threshold levels :

(a) **Uniformity and Stability**:

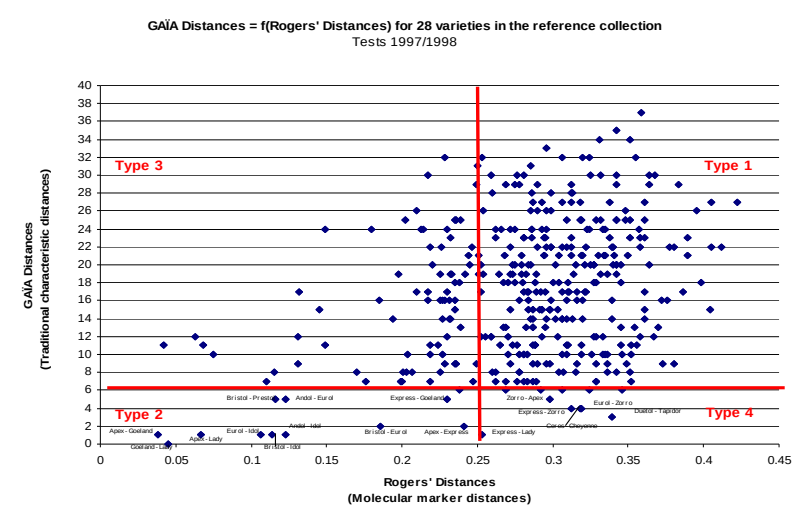
(i) [molecular] **differences** calculated between varieties **take into account the variation within varieties;**

(ii) suitable **uniformity standards** could be developed for molecular markers **without requiring varieties**, in general, **to be more uniform**

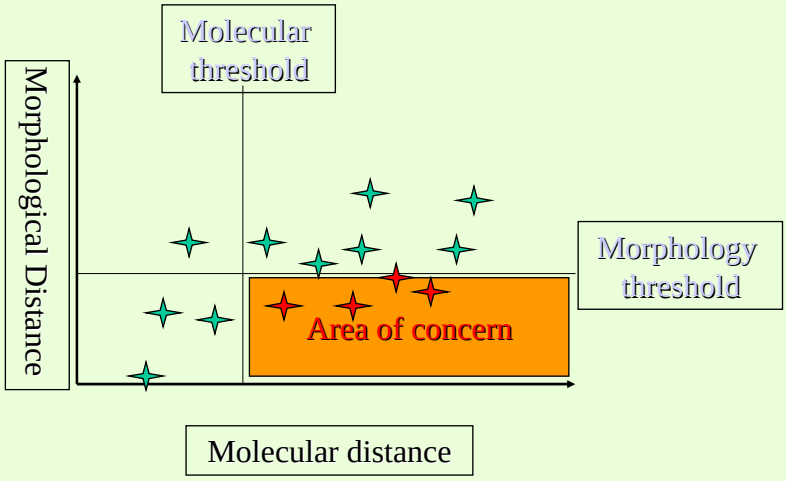
(b) would only be used for the establishment of a **"Distinctness plus"** threshold in the **management of reference collections**;

(c) would meet all the **normal requirements for any characteristic** to be used in the DUS examination and, in particular, would be checked to ensure they are **sufficiently consistent and repeatable**.

Option 2: Oilseed Rape



Option 2: Calibration of threshold levels



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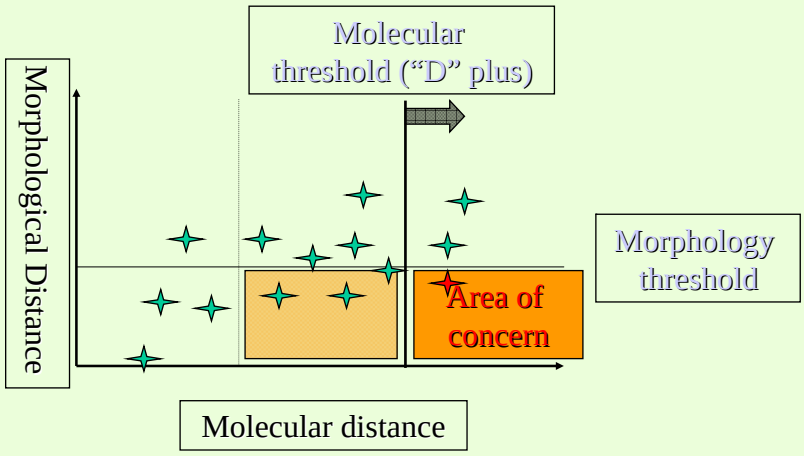
Option 2: Management of Reference Collections ("Distinctness plus")



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OPTION 3

New system

UPOV

View of the BMT Review Group, Technical Committee, Administrative and Legal Committee

Option 3: New system

Proposal: Option 3 for Rose and Wheat

no consensus on the acceptability of the Option 3 proposals within the terms of the UPOV Convention and no consensus on whether they would undermine the effectiveness of protection offered under the UPOV system.

- concerns were raised that, in these proposals, using this approach, it might be possible to use a limitless number of markers to find differences between varieties. The concern was also raised that differences would be found at the genetic level which were not reflected in morphological characteristics

UPOV

Harmonized approach

Harmonization

⇒ facilitates cooperation in DUS testing

e.g. purchase of DUS reports

⇒ internationally recognized variety descriptions (effective protection)

UPOV

6. THE CONCEPT OF ESSENTIALLY DERIVED VARIETIES

UPOV

"OTHER" VARIETIES COVERED BY THE BREEDER'S RIGHT (1991 Act: Article 14(5))

VARIETIES:

- **not** clearly **distinguishable**
- whose production **requires the repeated use** of the protected variety
- which are **essentially derived** from the protected variety

UPOV

ESSENTIAL DERIVATION

PURPOSE:

To ensure sustainable plant breeding development by:

- providing effective protection for the classical breeder and
- encouraging cooperation between classical breeders and developers of new technologies such as genetic modification

UPOV

Essentially Derived Varieties (EDV's)

Article 14(5):

(a) The provisions of paragraphs (1) to (4) shall also apply in relation to

(i) **varieties which are essentially derived** from the protected variety, where the protected variety is not itself an essentially derived variety,

Essentially Derived Varieties

...a **variety shall be deemed to be essentially derived** from another variety ("the initial variety") **when**

(i) it is **predominantly derived from the initial variety**, or from a variety that is itself predominantly derived from the initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety,

(ii) **it is clearly distinguishable** from the initial variety and

(iii) **except for the differences which result from the act of derivation, it conforms to the initial variety in the expression of the essential characteristics** that result from the genotype or combination of genotypes of the initial variety.

Essentially Derived Varieties (EDV's)

May be obtained for example by:

- selection of a natural or induced mutant
- selection of a somaclonal variant
- selection of a variant individual from plants of the initial variety
- back-crossing
- transformation by genetic engineering

UPOV

Essentially Derived Varieties

Patented genetic element

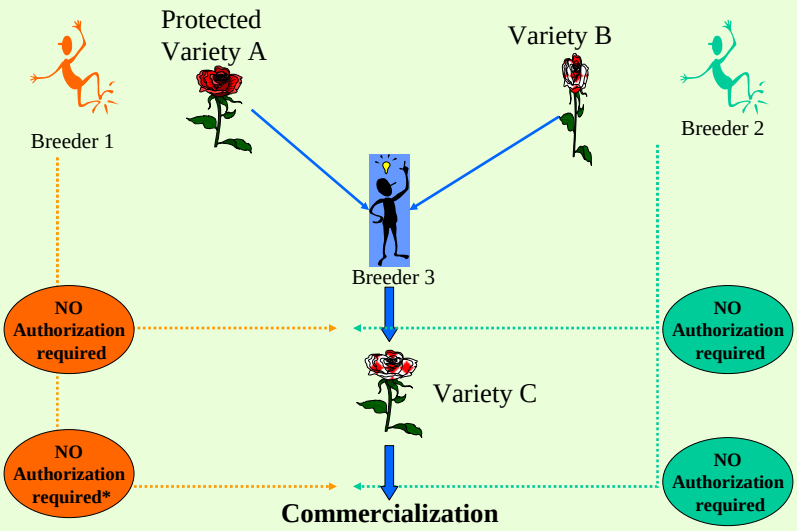
Protected plant variety

>===<

New Variety (?)
Essentially Derived Variety (?)

UPOV

THE BREEDER'S EXEMPTION: *Example*



*except for: **essentially derived varieties (1991 Act);**
varieties which require repeated use of a protected variety (variety A); and
varieties not clearly distinguishable from a protected variety (variety A).

UPOV

Essentially Derived Varieties (EDV's)

Can EDVs be protected ?

YES

Can EDVs be commercially exploited?

AUTHORIZATION NEEDED

It requires the authorization of the PBR holder of the initial variety

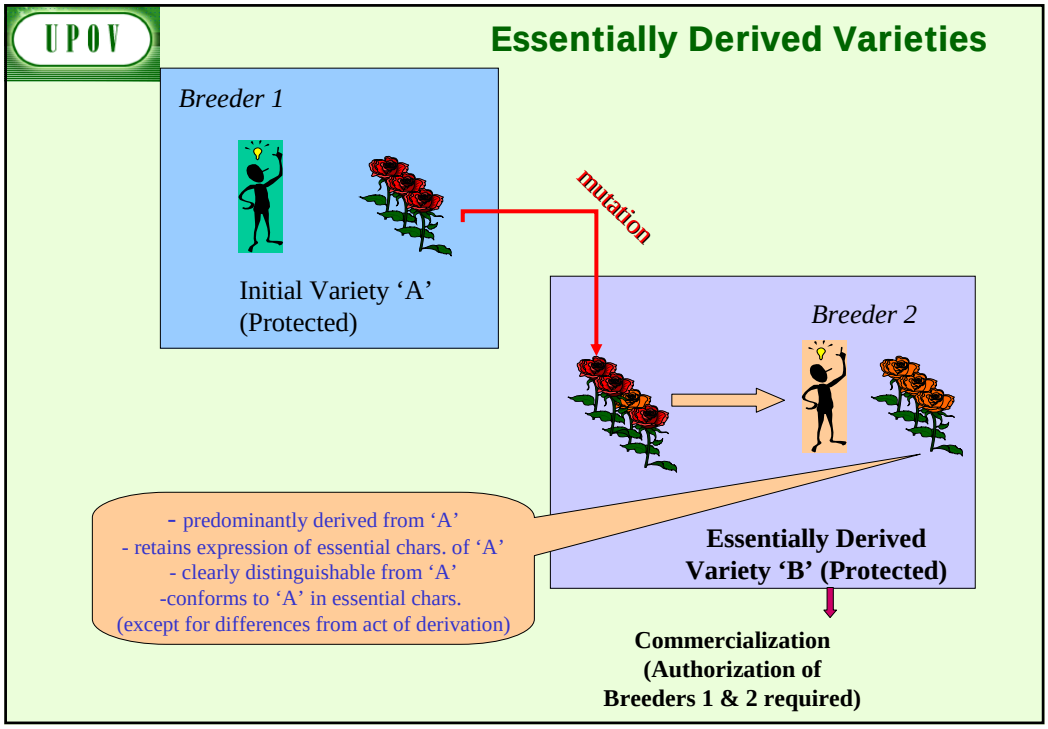
UPOV

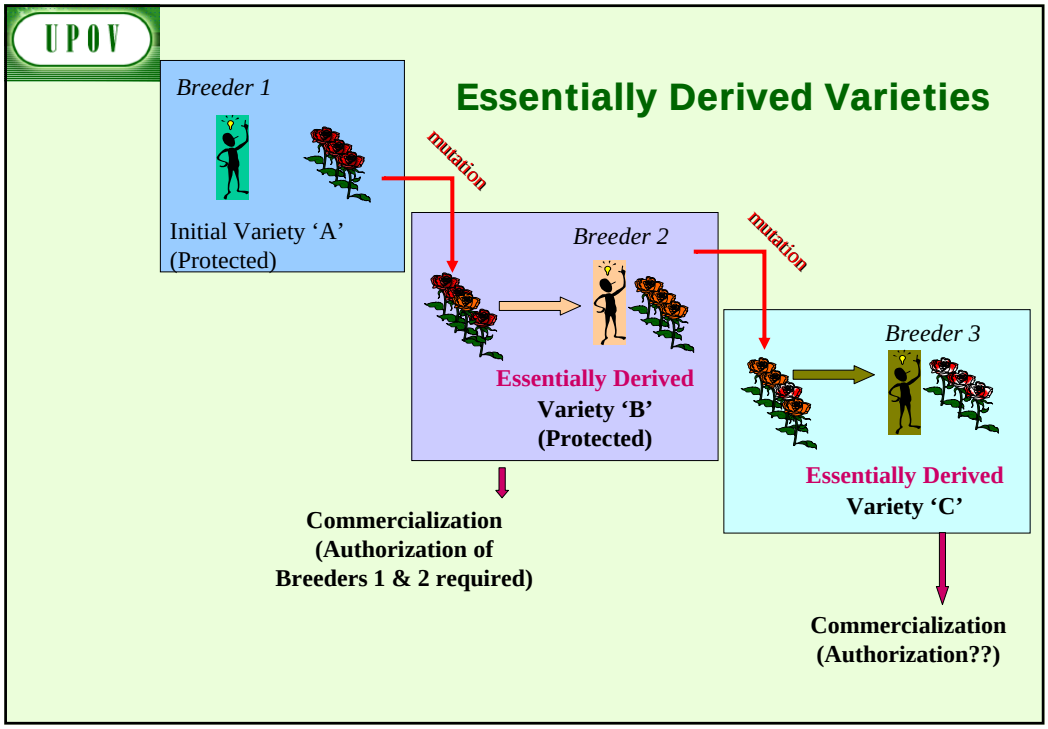
Essentially Derived Varieties (EDV's)

Article 14(5):

(a) The provisions of paragraphs (1) to (4) shall also apply in relation to

(i) **varieties which are essentially derived** from the protected variety, where the protected variety is not itself an essentially derived variety,


UPOV
Essentially Derived Varieties
Breeder 1
Initial Variety 'A'
(Protected)
mutation
Breeder 2
- predominantly derived from 'A'
- retains expression of essential chars. of 'A'
- clearly distinguishable from 'A'
-conforms to 'A' in essential chars.
(except for differences from act of derivation)
Essentially Derived
Variety 'B' (Protected)
Commercialization
(Authorization of
Breeders 1 & 2 required)


UPOV
Breeder 1
Essentially Derived Varieties
mutation
Initial Variety 'A'
(Protected)
Breeder 2
mutation
Breeder 3
Essentially Derived
Variety 'B'
(Protected)
Essentially Derived
Variety 'C'
Commercialization
(Authorization of
Breeders 1 & 2 required)
Commercialization
(Authorization??)

UPOV

Essentially Derived Varieties

...a variety shall be deemed to be essentially derived from another variety ("the initial variety") when

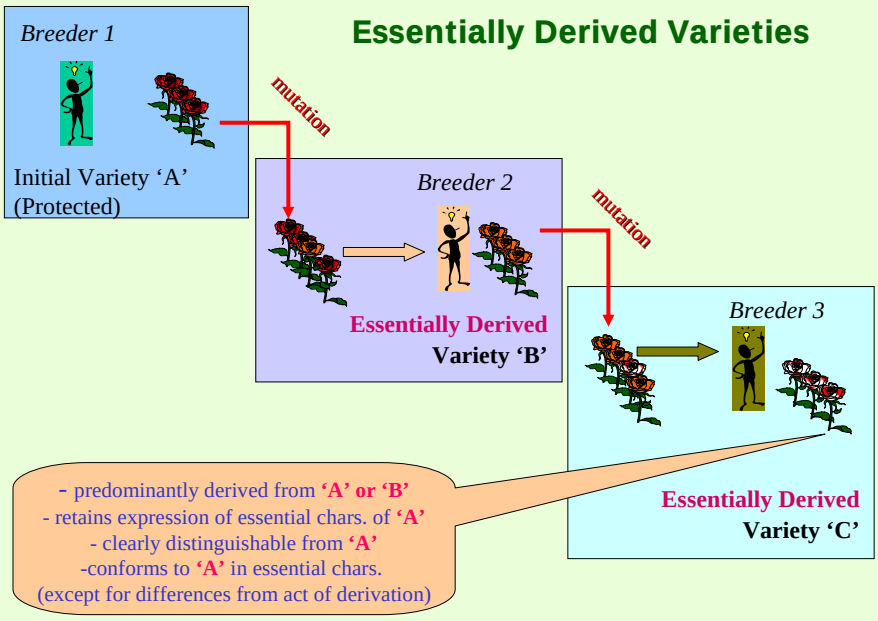
(i) it is **predominantly derived from the initial variety**, or **from a variety that is itself predominantly derived from the initial variety**, while retaining the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety,

(ii) it is **clearly distinguishable from the INITIAL variety** and

(iii) except for the differences which result from the act of derivation, **it conforms to the INITIAL variety** in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety.

UPOV

Essentially Derived Varieties



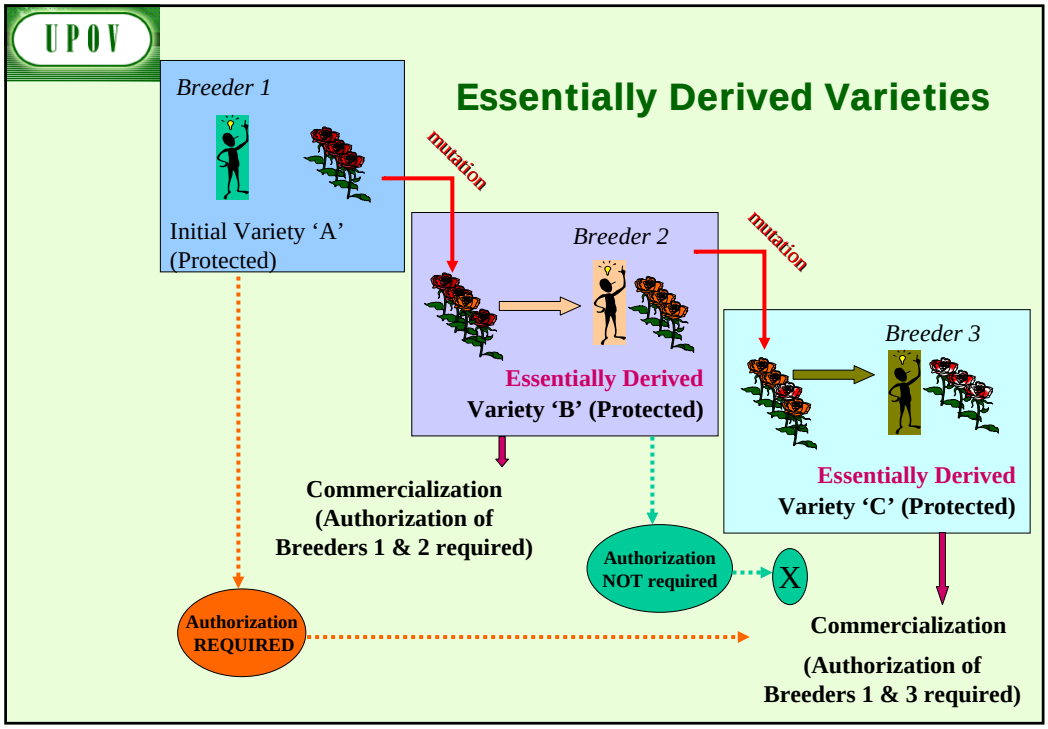
UPOV

Essentially Derived Varieties (EDV's)

Article 14(5):

(a) The provisions of paragraphs (1) to (4) shall also apply in relation to

(i) **varieties which are essentially derived from the protected variety, where the protected variety is not itself an essentially derived variety,**



UPOV

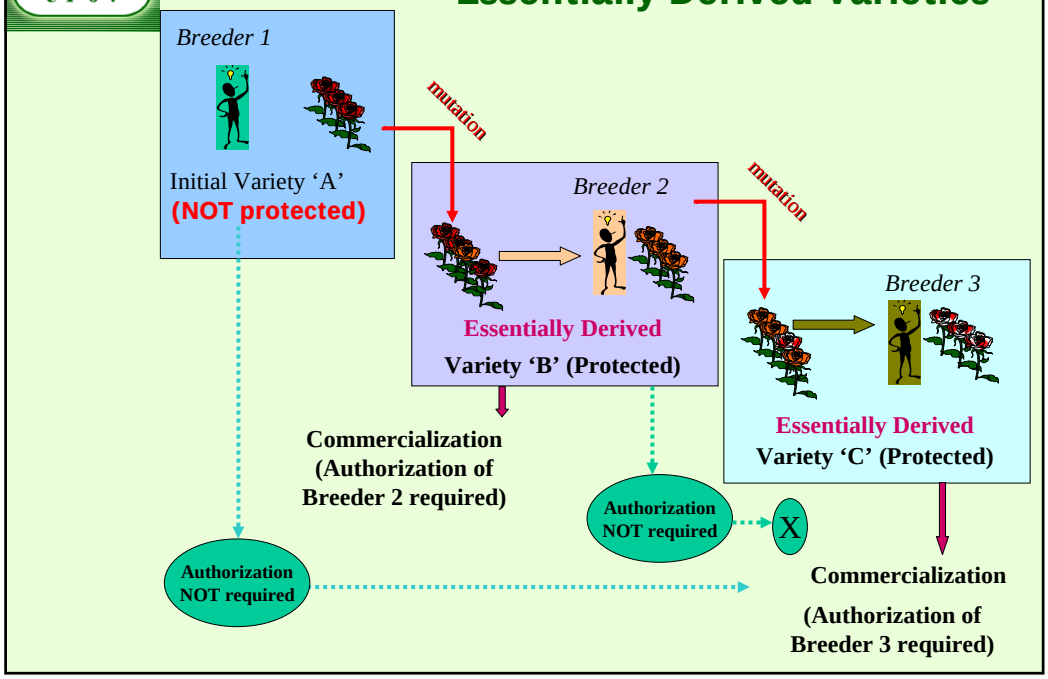
Essentially Derived Varieties (EDV's)

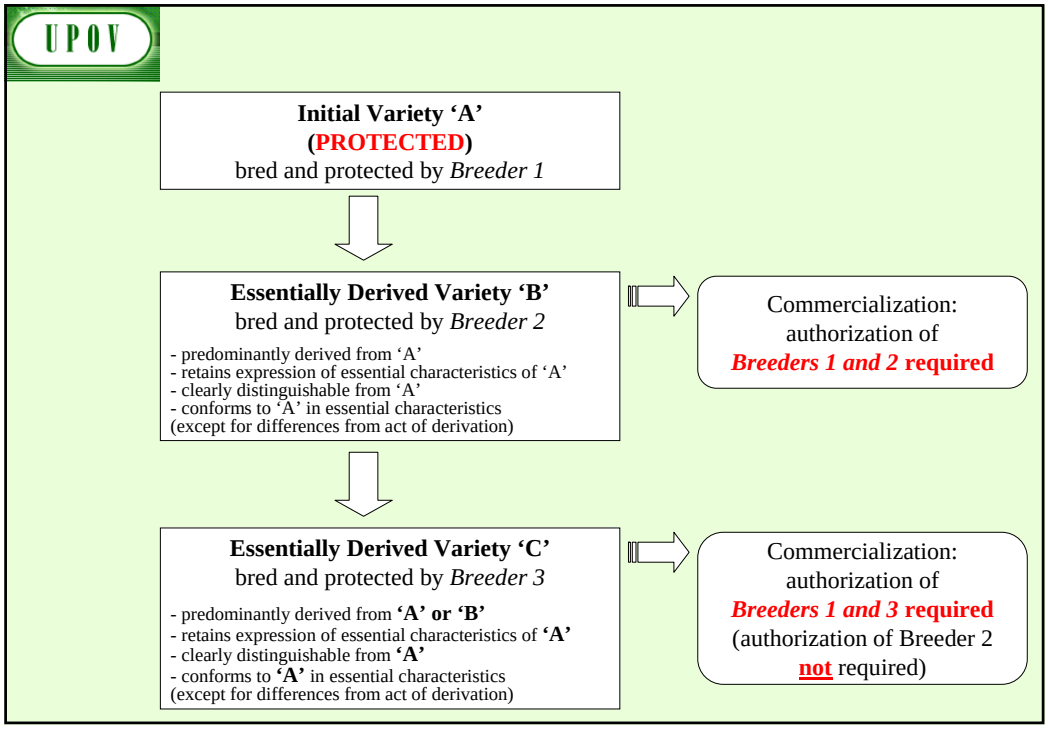
...a variety shall be deemed to be essentially derived from another variety ("the **initial variety**") when ...

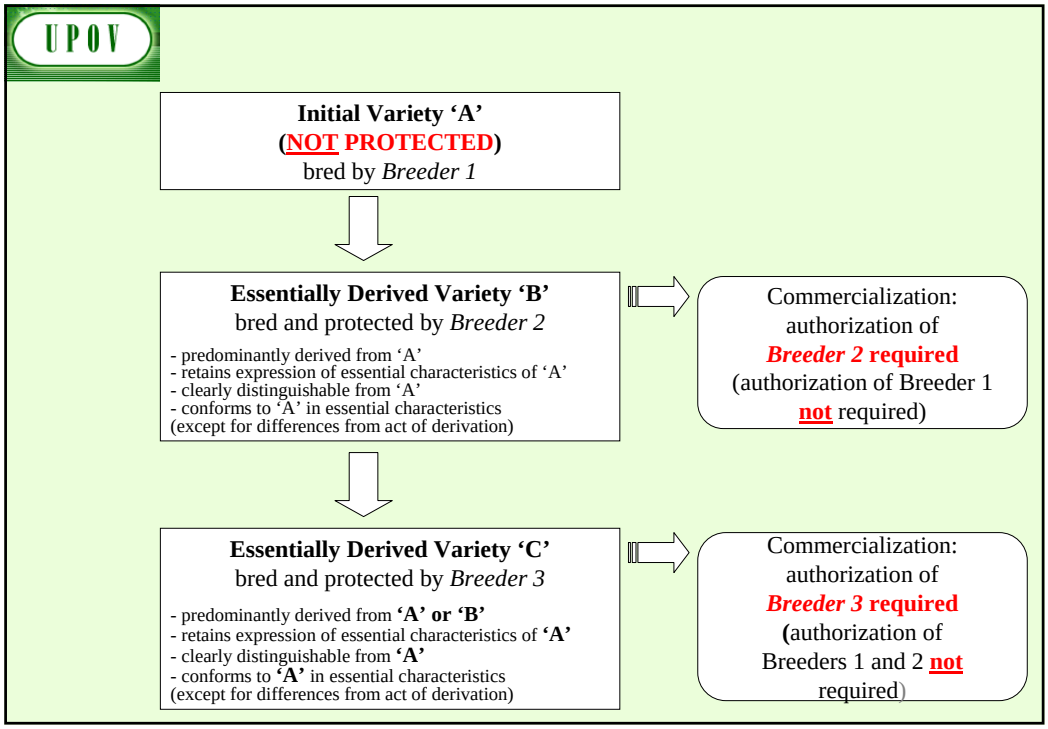
INITIAL variety
is <u>not</u> restricted to
PROTECTED variety

UPOV

Essentially Derived Varieties




UPOV
Initial Variety 'A'
(PROTECTED)
bred and protected by Breeder 1
Essentially Derived Variety 'B'
bred and protected by Breeder 2
- predominantly derived from 'A'
- retains expression of essential characteristics of 'A'
- clearly distinguishable from 'A'
- conforms to 'A' in essential characteristics
(except for differences from act of derivation)
Commercialization:
authorization of
Breeders 1 and 2 required
Essentially Derived Variety 'C'
bred and protected by Breeder 3
- predominantly derived from 'A' or 'B'
- retains expression of essential characteristics of 'A'
- clearly distinguishable from 'A'
- conforms to 'A' in essential characteristics
(except for differences from act of derivation)
Commercialization:
authorization of
Breeders 1 and 3 required
(authorization of Breeder 2
not required)


UPOV
Initial Variety 'A'
(NOT PROTECTED)
bred by Breeder 1
Essentially Derived Variety 'B'
bred and protected by Breeder 2
- predominantly derived from 'A'
- retains expression of essential characteristics of 'A'
- clearly distinguishable from 'A'
- conforms to 'A' in essential characteristics
(except for differences from act of derivation)
Commercialization:
authorization of
Breeder 2 required
(authorization of Breeder 1
not required)
Essentially Derived Variety 'C'
bred and protected by Breeder 3
- predominantly derived from 'A' or 'B'
- retains expression of essential characteristics of 'A'
- clearly distinguishable from 'A'
- conforms to 'A' in essential characteristics
(except for differences from act of derivation)
Commercialization:
authorization of
Breeder 3 required
(authorization of
Breeders 1 and 2 not
required)

UPOV

Essentially Derived Varieties

- **decision on whether to grant protection to a variety does not take into account whether the variety is essentially derived or not**: provided the conditions for protection are fulfilled (novelty, DUS, variety denomination, compliance with formalities and payment of fees) the variety will be granted protection.
- if it is **subsequently concluded that the variety is an EDV**, the **breeder of that EDV still has all the rights conferred by the UPOV Convention**. However, the **breeder of the INITIAL VARIETY will *also* have rights** in that variety. Thus, in the case of an essentially derived variety, the authorization of **both** the breeder of the essentially derived variety and the breeder of the initial variety is required for its commercialization.

UPOV

Essentially Derived Varieties

- with regard to establishing **whether a variety is an essentially derived variety**, a common view expressed by members of the UPOV is that the existence of a relationship of essential derivation between protected varieties **is a matter for the holders of plant breeders' rights in the varieties concerned**.

- UPOV has established a section on its website where **case law** relevant to plant breeders' rights, including case law **concerning essentially derived varieties**, is published.

UPOV

"The BMT is a group open to DUS experts, biochemical and molecular specialists and plant breeders, whose role is to:

– [...]

"(viii) Provide a **forum for discussion on the use of biochemical and molecular techniques in the consideration of essential derivation** and variety identification."

UPOV

7. THE ROLE OF UPOV IN VARIETY IDENTIFICATION

UPOV

VARIETY IDENTIFICATION

"The BMT is a group open to DUS experts, biochemical and molecular specialists and plant breeders, whose role is to:

– [...]

"(viii) Provide a **forum for discussion on the use of biochemical and molecular techniques in the consideration of** essential derivation and **variety identification**."

UPOV

VARIETY IDENTIFICATION

(March 2007)

- The Technical Committee invited the **BMT Crop Subgroups to develop proposals concerning the possible use of molecular tools for variety identification** […].

UPOV

BMT Forum

"BREEDERS' DAY"
at BMT/11, September 2008, Spain

Use of molecular techniques in:

- **variety identification**
- **essential derivation**

UPOV

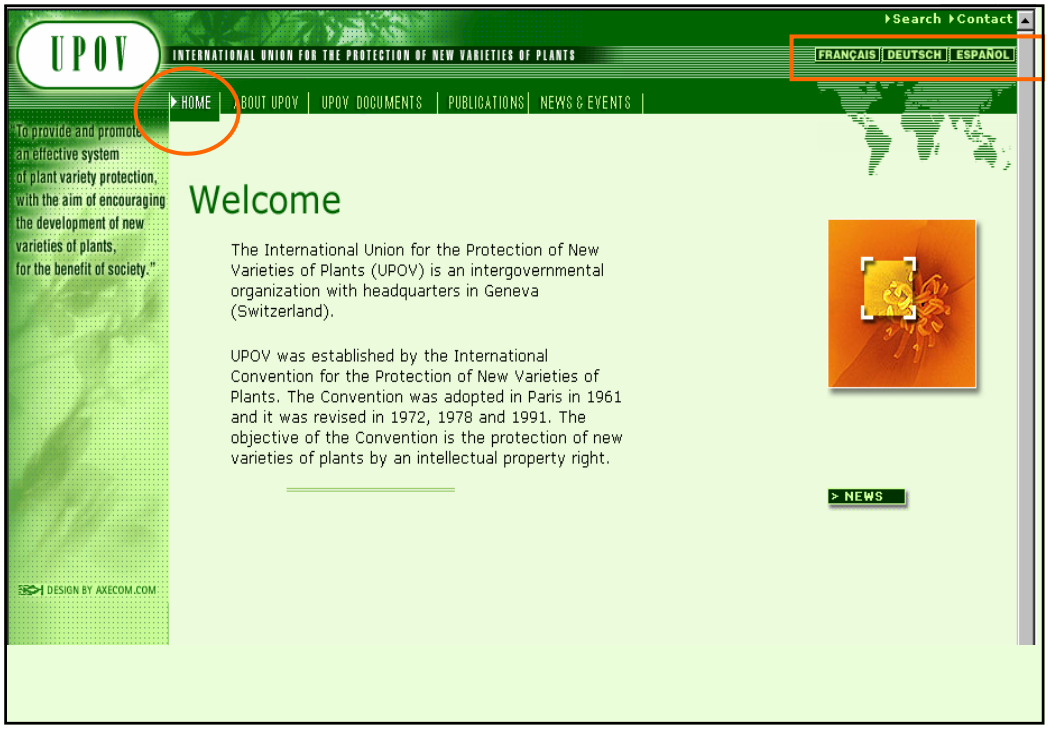
8. THE UPOV WEBSITE

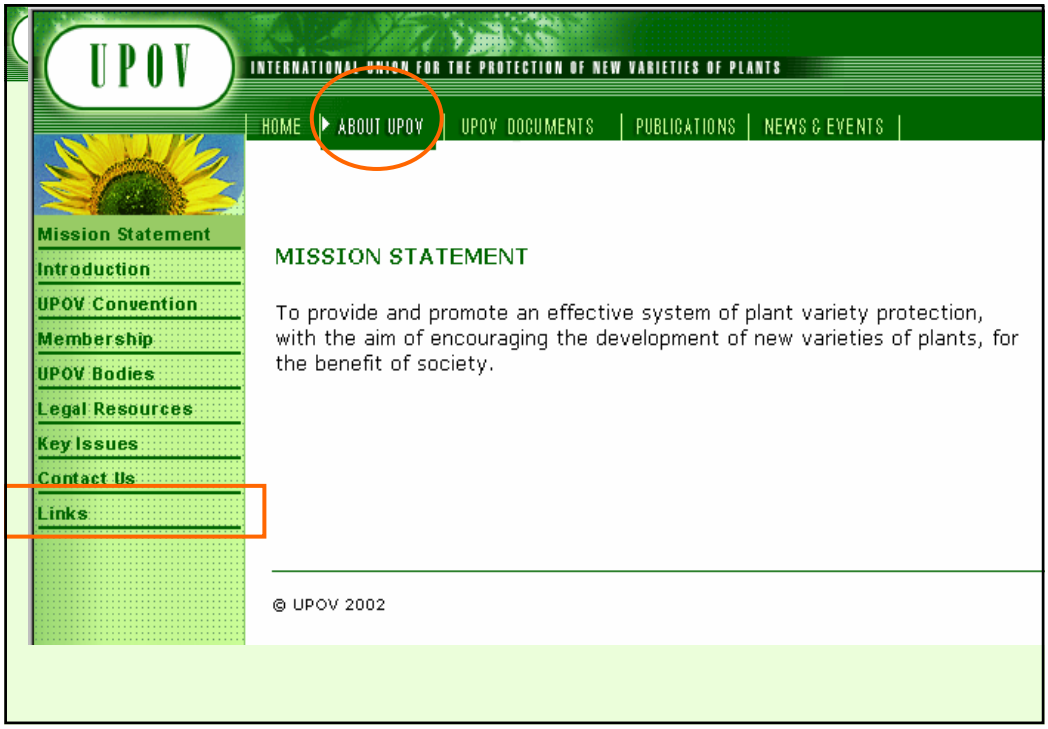
UPOV

UPOV Website

http://www.upov.int

(e-mail: upov.mail@upov.int)

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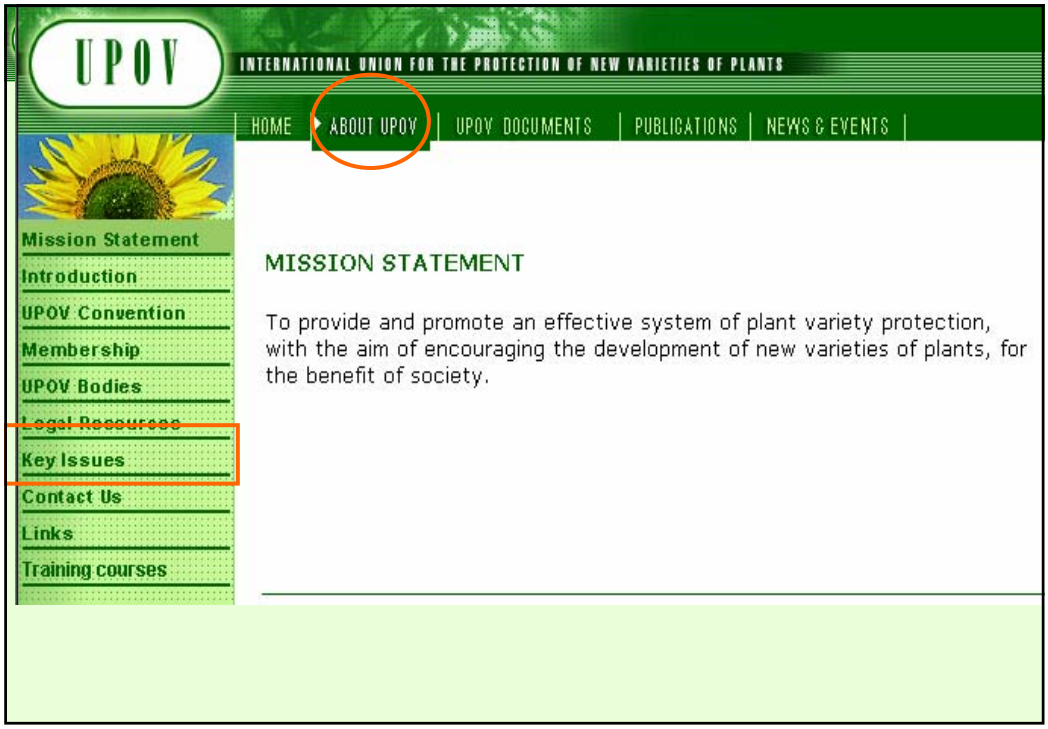
MISSION STATEMENT
To provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.
© UPOV 2002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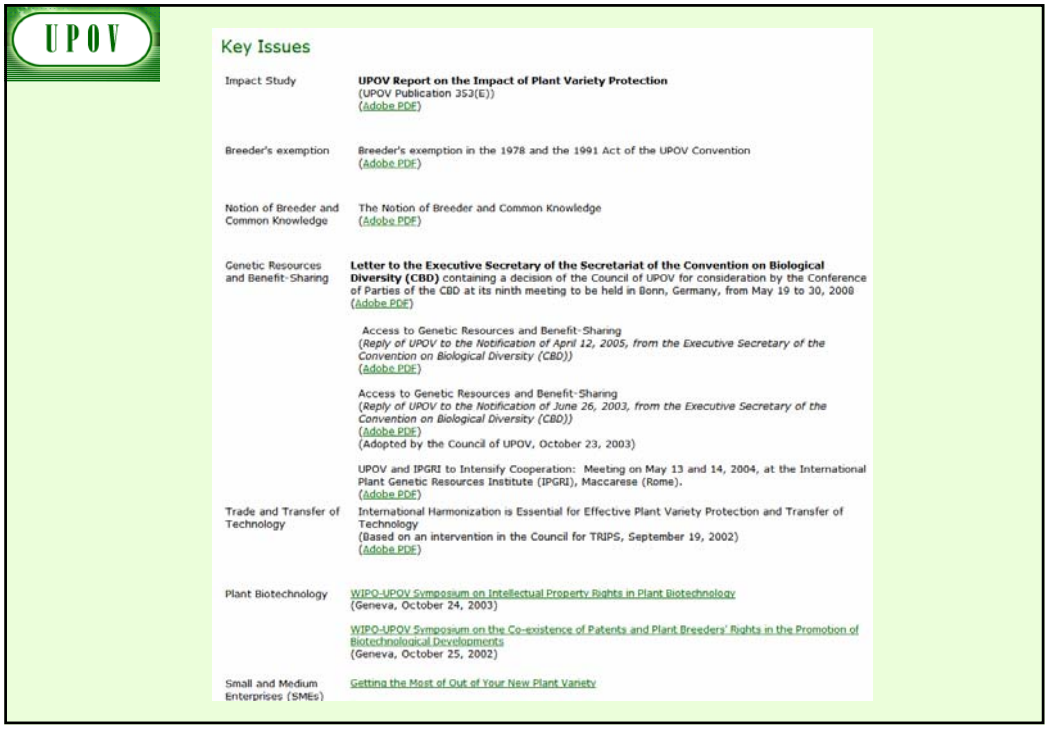
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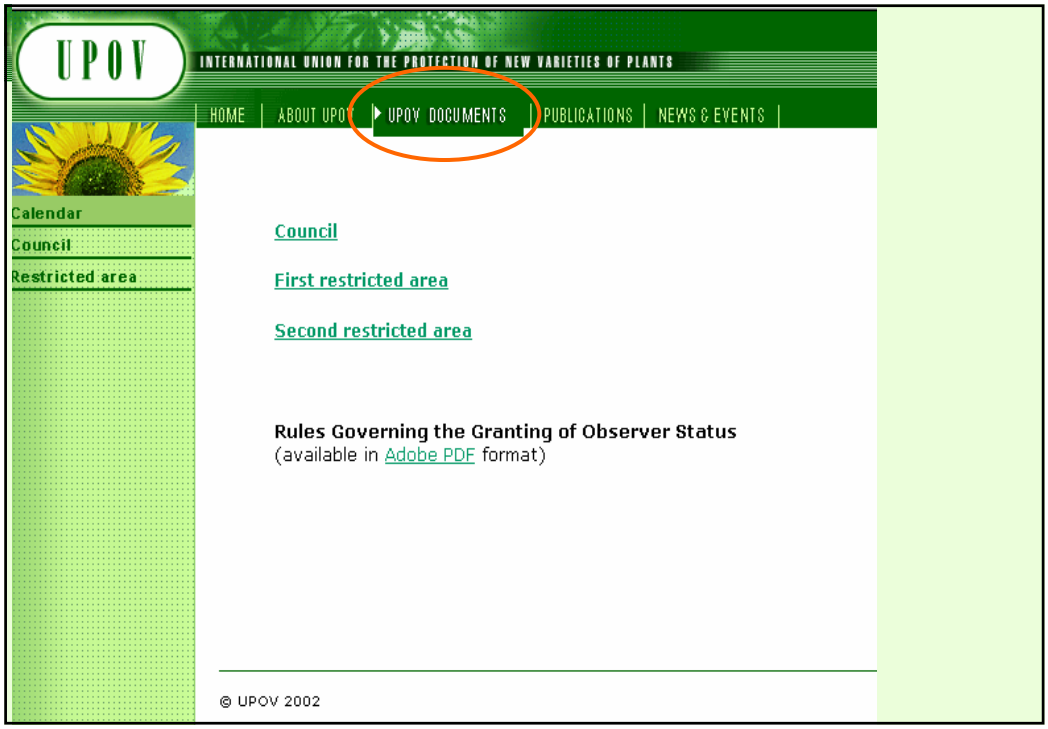
Key Issues
Impact Study
UPOV Report on the Impact of Plant Variety Protection
(UPOV Publication 353(E))
(Adobe PDF)
Breeder's exemption
Breeder's exemption in the 1978 and the 1991 Act of the UPOV Convention
(Adobe PDF)
Notion of Breeder and Common Knowledge
The Notion of Breeder and Common Knowledge
(Adobe PDF)
Genetic Resources and Benefit-Sharing
Letter to the Executive Secretary of the Secretariat of the Convention on Biological Diversity (CBD) containing a decision of the Council of UPOV for consideration by the Conference of Parties of the CBD at its ninth meeting to be held in Bonn, Germany, from May 19 to 30, 2008
(Adobe PDF)
Access to Genetic Resources and Benefit-Sharing
(Reply of UPOV to the Notification of April 12, 2005, from the Executive Secretary of the Convention on Biological Diversity (CBD))
(Adobe PDF)
Access to Genetic Resources and Benefit-Sharing
(Reply of UPOV to the Notification of June 26, 2003, from the Executive Secretary of the Convention on Biological Diversity (CBD))
(Adobe PDF)
(Adopted by the Council of UPOV, October 23, 2003)
UPOV and IPGRI to Intensify Cooperation: Meeting on May 13 and 14, 2004, at the International Plant Genetic Resources Institute (IPGRI), Maccarese (Rome).
(Adobe PDF)
Trade and Transfer of Technology
International Harmonization is Essential for Effective Plant Variety Protection and Transfer of Technology
(Based on an intervention in the Council for TRIPS, September 19, 2002)
(Adobe PDF)
Plant Biotechnology
WIPO-UPOV Symposium on Intellectual Property Rights in Plant Biotechnology
(Geneva, October 24, 2003)
WIPO-UPOV Symposium on the Co-existence of Patents and Plant Breeders' Rights in the Promotion of Biotechnological Developments
(Geneva, October 25, 2002)
Small and Medium Enterprises (SMEs)
Getting the Most of Out of Your New Plant Variety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Restricted area
Council
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Second restricted area
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(available in Adobe PDF format)
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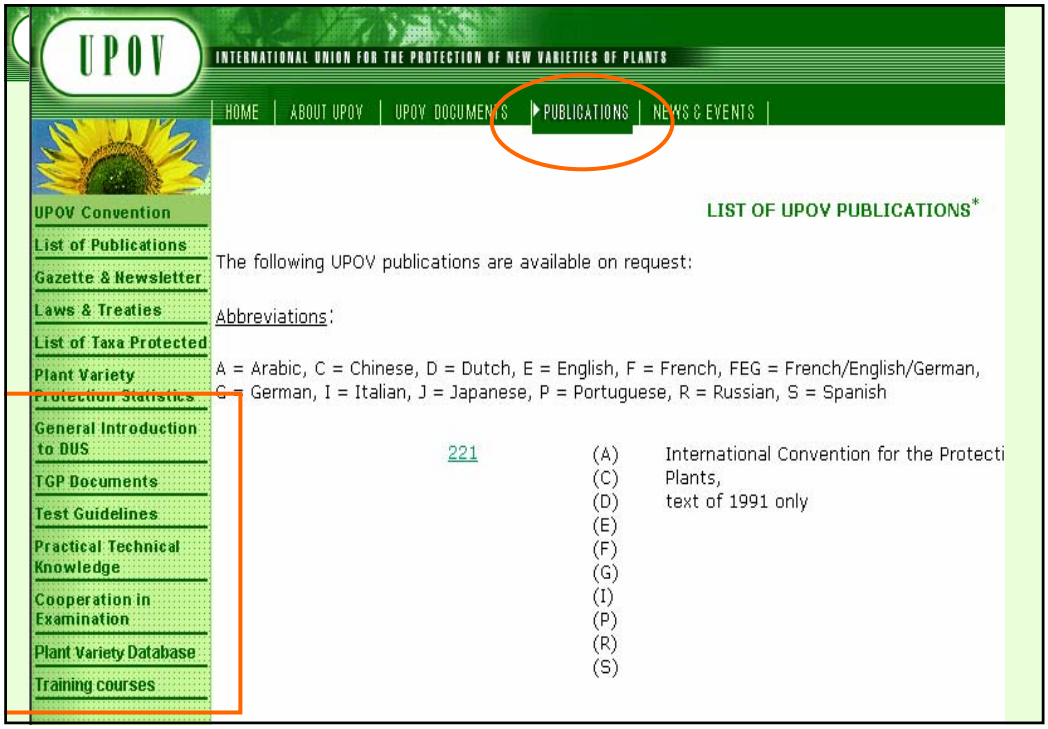
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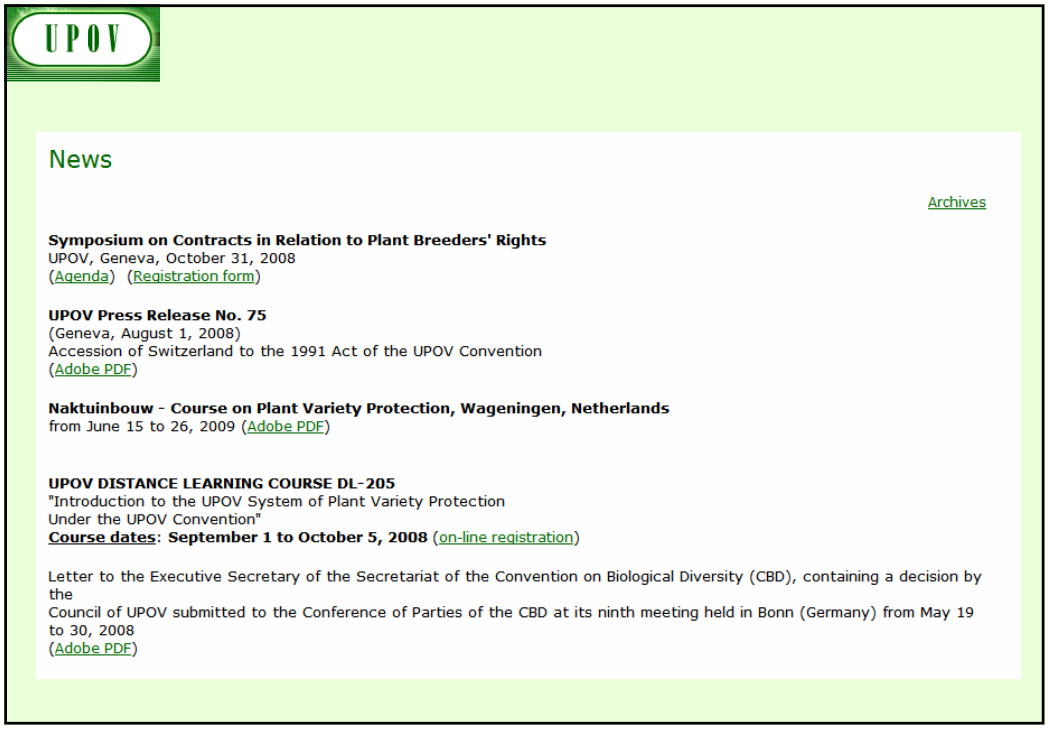
Practical Technical Knowledge
Cooperation in Examination
Plant Variety Database
Training courses
LIST OF UPOV PUBLICATIONS*
The following UPOV publications are available on request:
Abbreviations:
A = Arabic, C = Chinese, D = Dutch, E = English, F = French, FEG = French/English/German,
G = German, I = Italian, J = Japanese, P = Portuguese, R = Russian, S = Spanish
221
(A)
(C)
(D)
(E)
(F)
(G)
(I)
(P)
(R)
(S)
International Convention for the Protecti
Plants,
text of 1991 only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News
Archives
Symposium on Contracts in Relation to Plant Breeders' Rights
UPOV, Geneva, October 31, 2008
(Agenda) (Registration form)
UPOV Press Release No. 75
(Geneva, August 1, 2008)
Accession of Switzerland to the 1991 Act of the UPOV Convention
(Adobe PDF)
Naktuinbouw - Course on Plant Variety Protection, Wageningen, Netherlands
from June 15 to 26, 2009 (Adobe PDF)
UPOV DISTANCE LEARNING COURSE DL-205
"Introduction to the UPOV System of Plant Variety Protection
Under the UPOV Convention"
Course dates: September 1 to October 5, 2008 (on-line registration)
Letter to the Executive Secretary of the Secretariat of the Convention on Biological Diversity (CBD), containing a decision by the
Council of UPOV submitted to the Conference of Parties of the CBD at its ninth meeting held in Bonn (Germany) from May 19 to 30, 2008
(Adobe PDF)

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9. AGENDA
FOR THE BMT SESSION

UPOV

THANK YOU