UPOV

**TECHNICAL WORKING PARTY**

**FOR AGRICULTURAL CROPS**

Thirty-eight Session
Seoul, Rep. of Korea 2009

# PREPARATORY WORKSHOP

August 30, 2009

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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**

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## PROGRAM

1. Introduction to UPOV
2. Introduction to the Technical Working Parties
3. Overview of the General Introduction (document TG/1/3 and TGP documents)
4. Test Guidelines (document TGP/7)
   - (a) Introduction
   - (b) Guidance on drafting characteristics
   - (c) Method of observation (VCM; G/S)
   - (d) Asterisked, grouping and TQ characteristics
   - (e) Example varieties
   - (f) The process for developing UPOV Test Guidelines
5. UPOV databases
6. The UPOV website
7. Agenda for the TWP meeting
8. Feedback

EXERCISES

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UPOV

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

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## 1. INTRODUCTION TO UPOV

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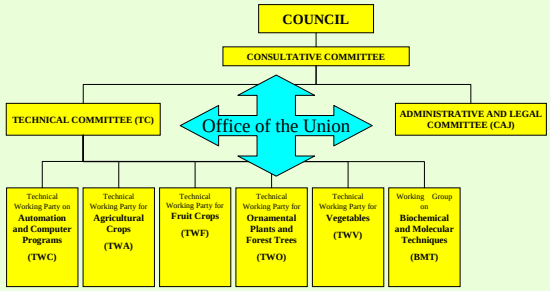
## UPOV Structure

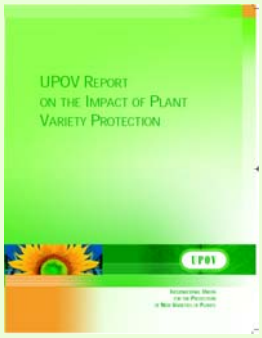


## UPOV Membership / Territories covered
## 67 members


## UPOV MISSION STATEMENT

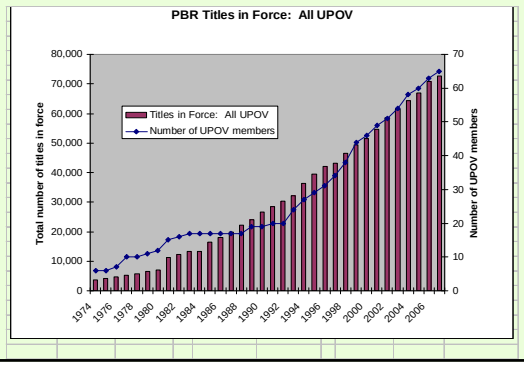
"To provide and promote an *effective system* of plant variety protection, with the aim of encouraging the development of *new varieties of plants*, for the *benefit of society*"

## Members of UPOV (green) and initiating States and organizations (brown)




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

## Development of Plant Variety Protection




## 2. INTRODUCTION TO THE UPOV TECHNICAL WORKING PARTIES (THE DUS EXAMINATION)

## THE CONDITIONS FOR GRANTING A BREEDER'S RIGHT

*Criteria to be satisfied*

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

**"DUS"**

## 3. OVERVIEW OF THE GENERAL INTRODUCTION

## (DOCUMENT TG/1/3 AND TGP DOCUMENTS)

## GUIDANCE FOR DUS EXAMINATION

## THE CONDITIONS FOR GRANTING A BREEDER'S RIGHT

*Other conditions*

- VARIETY DENOMINATION
- FORMALITIES
- PAYMENT OF FEES

**NO OTHER CONDITIONS!**

## Guidance for DUS Examination

**facilitates:**

**BEST PRACTICE (based on experience)**

=> good decisions

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

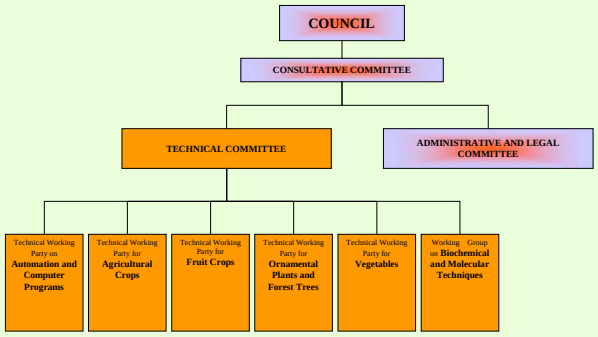
=> efficiency in method of examination (learn from the best)

**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 Structure




## UPOV provides guidance by:

- The "General Introduction" (TG/1/3)
  - General technical principles
  - Organization of DUS Testing
  - Associated "TGP" Documents (e.g. statistical methods)

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:

- The "General Introduction" (TG/1/3)
  - General technical principles
  - Organization of DUS Testing
  - Associated "TGP" Documents (e.g. statistical methods)

AND

- **"Test Guidelines"**
  - **Species/Crop-specific recommendations developed by crop experts**
  - **TGP/7 "Development of Test Guidelines" adopted**

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

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

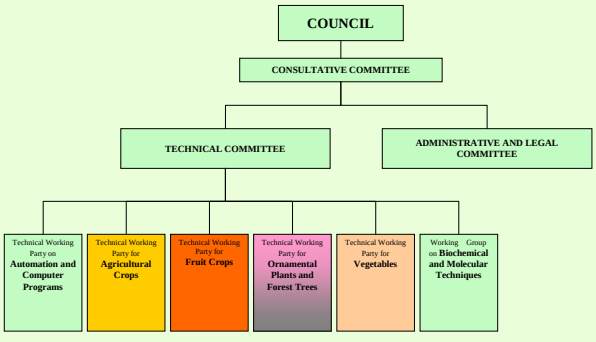
These guidelines should be read in conjunction with document TG/1/3, "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (hereinafter referred to as the "General Introduction") and its associated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

# 4. TEST GUIDELINES

## (a) Introduction

## UPOV Structure



# TGP/7
# "Development of Test Guidelines"

## 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

**1. Introduction**

**2. Procedure for the Introduction and Revision of UPOV Test Guidelines**

**3. Guidance for Drafting Test Guidelines**

- The **TG Template**
- **Additional Standard Wording** for the TG Template
- **Guidance Notes** for the TG Template

## 4. TEST GUIDELINES

## (b) Guidance on drafting characteristics

- **selection of characteristics**
- **types of expression (QL, QN, PQ)**
- **states of expression / notes**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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

DRAFT

[MAIN COMMON NAME]

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

## "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

| Criteria | Fruit: color | Leaf: shape | Yield |
|---|---|---|---|
| (a) results from a given genotype or combination of genotypes | Yes | Yes | Yes |
| (b) sufficiently consistent and repeatable in a particular environment | Yes | Yes | (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 |
| ACCEPTABILITY | Yes | Yes | No |

## Selection of Characteristics

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

**Etc.**

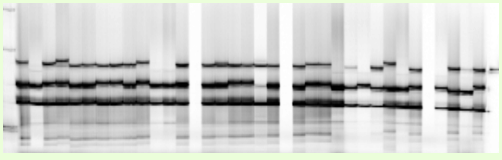
## Special Characteristics: Disease Resistance

| 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<br>*Standardize inoculum<br>*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* |

## Selection of Characteristics

| Criteria | Fruit: color | Leaf: shape | Yield |
|---|---|---|---|
| (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 | |

## Molecular Techniques?



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# TYPE OF EXPRESSION OF CHARACTERISTICS (**QL, QN, PQ**):

*and consequences for consideration of* ***distinctness***

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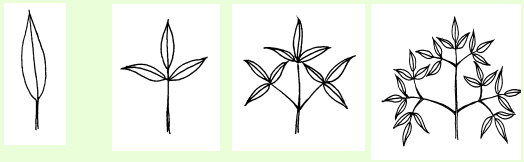
## Qualitative characteristic

Clematis: Leaf: type



1 simple | 2 ternate | 3 biternate | 4 triternate

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7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

| Char. No. | English | français | Deutsch | español | Example Varieties Exemples Beispielsorten Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|
| 1. (*) (+) | **Plant: growth habit** | **Plante : port** | **Pflanze: Wuchsform** | **Planta: porte** | | |
| QN | upright | dressé | aufrecht | erecto | Imuppuk | 1 |
| | semi-upright | semi dressé | halbaufrecht | semierecto | D0158-1 | 2 |
| | spreading | étalé | breitwüchsig | abierto | Summem 03 | 3 |
| | semi-trailing | semi-étalé | halbhängend | semirrastrero | Imupaf | 4 |
| | trailing | coureur | hängend | rastrero | Organza | 5 |
| 2. (*) | **Plant: height** | **Plante : hauteur** | **Pflanze: Höhe** | **Planta: altura** | | |
| QN | short | basse | niedrig | baja | Yateye | 3 |
| | medium | moyenne | mittel | media | D0158-1 | 5 |
| | tall | haute | hoch | alta | Imuppuk | 7 |

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## **Qualitative** Characteristics: **distinctness**

In qualitative characteristics, the difference between two varieties may be considered clear if one or more characteristics have expressions that fall into **two different states in the Test Guidelines**. Varieties should not be considered distinct for a qualitative characteristic if they have the same state of expression.

(e.g. sex of plant: dioecious female (1), dioecious male (2), monoecious unisexual (3), monoecious hermaphrodite (4)).

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## **QUALITATIVE** Characteristics

"Qualitative characteristics" are those that are **expressed in discontinuous states** (e.g. sex of plant: dioecious female (1), dioecious male (2), monoecious unisexual (3), monoecious hermaphrodite (4)).

These states are self-explanatory and independently meaningful. All states are necessary to describe the full range of the characteristic, and every form of expression can be described by a single state. The order of states is not important. As a rule, the **characteristics are not influenced by environment**.

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## **QUANTITATIVE** Characteristics

"Quantitative characteristics" are those where the expression covers the full range of variation from one extreme to the other. The **expression can be recorded on a one-dimensional, continuous or discrete, linear scale**. The range of expression is divided into a number of states for the purpose of description (e.g. length of stem: very short (1), short (3), medium (5), long (7), very long (9)). The division seeks to provide, as far as is practical, an even distribution across the scale. The Test Guidelines do not specify the difference needed for distinctness. The states of expression should, however, be meaningful for DUS

## **Quantitative** Characteristics: **distinctness**

Quantitative characteristics are considered for distinctness according to the method of observation and the features of propagation of the variety concerned...

## **Quantitative** Characteristics: **distinctness**

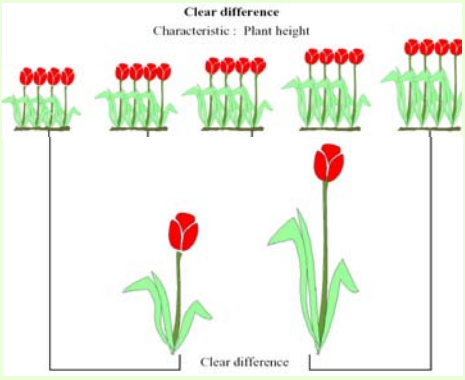
Quantitative characteristics are considered for distinctness according to the method of observation and the features of propagation of the variety concerned.

Test Guidelines (TGP/7 proposed revised text)

Difference of **two Notes to represent a clear difference if** the **comparison** between two varieties is performed **at the level of Notes**:

e.g.

## Quantitative Characteristic



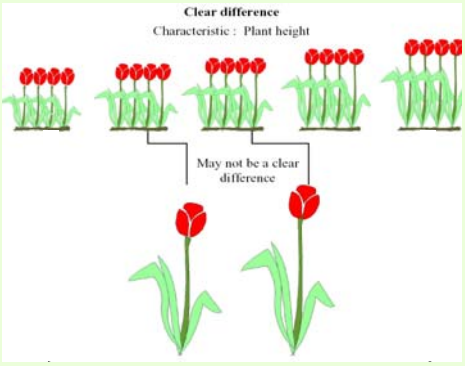

## **Quantitative** Characteristics: **distinctness**

TG/233/1
Dianella Diascia, 2007-03-28
- 9 -

| | English | français | Deutsch | español | Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|
| 6. (*) | (a) **Leaf blade: length** | **Limbe: longueur** | **Blattspreite: Länge** | **Limbo: longitud** | | |
| QN | short | courte | kurz | corto | Codiet, Strawberry Sundae | 3 |
| | medium | moyenne | mittel | medio | Codiuse | 5 |
| | long | longue | lang | largo | Balwhalapa, Balwhawhat | 7 |

**1 to 9 scale**: **Notes 1 and 3**, **Notes 2 and 4**, Notes 3 and 5 **etc.** represent a clear difference

## Quantitative Characteristic




## **Quantitative** Characteristics: **distinctness**

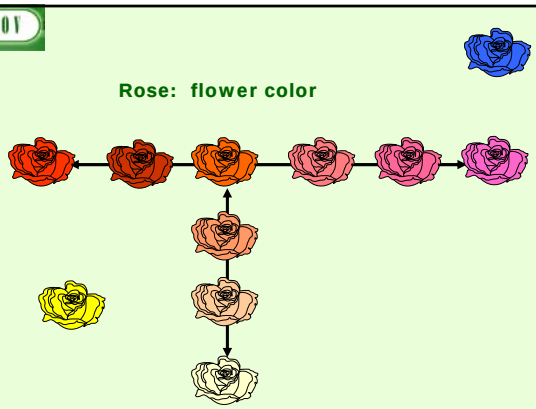
TG/233/1
Dianella Diascia, 2007-03-28
- 9 -

| | English | français | Deutsch | español | Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|
| 5. | **Stem: anthocyanin coloration below inflorescence** | **Tige: pigmentation anthocyanique sous inflorescence** | **Trieb: Anthocyanfärbung unter dem Blütenstand** | **Tallo: pigmentación antociánica por debajo de la inflorescencia** | | |
| QN | absent or weak | absente ou faible | fehlend oder gering | ausente o débil | Heccharm | 1 |
| | medium | moyenne | mittel | media | Heccrace | 2 |
| | strong | forte | stark | fuerte | | 3 |

**1 to 3 scale**: **only Notes 1 and 3** represent a clear difference

**PSEUDO-QUALITATIVE** Characteristics

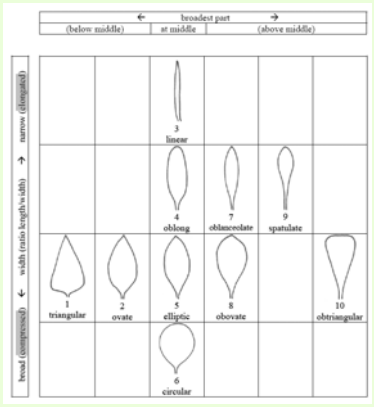
In the case of "pseudo-qualitative characteristics," the **range of expression is at least partly continuous, but varies in more than one dimension** (e.g. shape: ovate (1), elliptic (2), circular (3), obovate (4)) and cannot be adequately described by just defining two ends of a linear range. In a similar way to qualitative (discontinuous) characteristics – hence the term "pseudo-qualitative" – each individual state of expression needs to be identified to adequately describe the range of the characteristic.

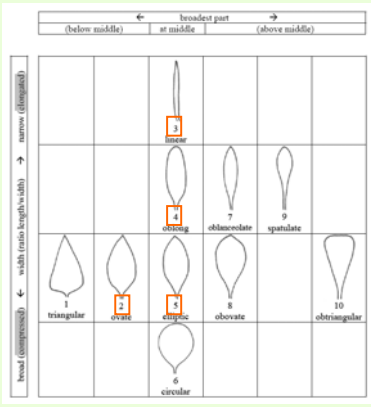



Example

**Pseudo-Qualitative** Characteristics: **distinctness**

A different state in the Test Guidelines may not be sufficient to establish distinctness (see also section 5.5.2.3). However, in certain circumstances, varieties described by the same state of expression may be clearly distinguishable.



## STATES / NOTES for QL, QN ,PQ

## Quantitative Characteristics

weak/strong
short/long
small/large

| Note | State |
|---|---|
| 1 | very weak (or: absent or very weak) |
| 2 | very weak to weak |
| **3** | **weak** |
| 4 | weak to medium |
| **5** | **medium** |
| 6 | medium to strong |
| **7** | **strong** |
| 8 | strong to very strong |
| 9 | very strong |

| Note | State |
|---|---|
| 1 | very small (or: absent or very small) |
| 2 | very small to small |
| **3** | **small** |
| 4 | small to medium |
| **5** | **medium** |
| 6 | medium to large |
| **7** | **large** |
| 8 | large to very large |
| 9 | very large |

## Qualitative Characteristics

(typical example)

| | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|
| **19. VG (*) (+)** | **Inflorescence: type** | | | | | |
| QL | Type 1 |  |  |  | | 1 |
| | Type 2 | | | | | 2 |
| | Type 3 | | | | | 3 |
| | | 1 Type 1 | 2 Type 2 | 3 Type 3 | | |

## Quantitative Characteristics

| **Standard Range Version 1** |
|---|
| 1 very weak (or: absent or very weak) |
| 3 weak |
| 5 medium |
| 7 strong |
| 9 very strong |

| **Standard Range Version 2** |
|---|
| 1 very weak (or: absent or very weak) |
| 3 weak |
| 5 medium |
| 7 strong |
| - |

| **Standard Range Version 3** |
|---|
| - |
| 3 weak |
| 5 medium |
| 7 strong |
| 9 very strong |

| **Standard Range Version 4** |
|---|
| - |
| 3 weak |
| 5 medium |
| 7 strong |
| - |

## Qualitative Characteristics

(special cases)

| Char No. | Method of Examination | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **1. (*)** | **MS C** | **Plant: ploidy** | | | | | |
| QL | | diploid | | | | | 2 |
| | | tetraploid | | | | | 4 |
| **3. (*)** | **VG** | **Stem: anthocyanin coloration** | | | | | |
| QL | | absent | | | | Gumpoong | 1 |
| | | present | | | | Chunpoong, Gopoong | 9 |

## Quantitative Characteristics

| State | Example 1 **Size relative to:** | Example 2 **Angle:** | Example 3 **Position:** | Example 4 **Length in relation to:** |
|---|---|---|---|---|
| **1** | **much smaller** | **very acute** | **at base** | **equal** |
| 3 | moderately smaller | moderately acute | one quarter from base | slightly shorter |
| **5** | **same size** | **right angle** | **in middle** | **moderately shorter** |
| 7 | moderately larger | moderately obtuse | one quarter from apex end | much shorter |
| **9** | **much larger** | **very obtuse** | **at apex** | **very much shorter** |

## Quantitative Characteristics

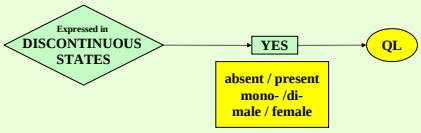
**Limited range**

| State | Example 1<br>**Stem: attitude** |
|---|---|
| 1 | erect |
| 3 | semi-erect |
| 5 | prostrate |

**Condensed range**

| **Example 1** | | **Example 2** | |
|---|---|---|---|
| 1 | e.g. absent or very weak<br>*(absent or very weakly expressed)* | 1 | e.g. absent or weak<br>*(absent or weakly expressed)* |
| 2 | weak<br>*(weakly expressed)* | 2 | moderate (or medium)<br>*(moderately expressed)* |
| 3 | strong<br>*(strongly expressed)* | 3 | strong<br>*(strongly expressed)* |

## QL, QN or PQ?

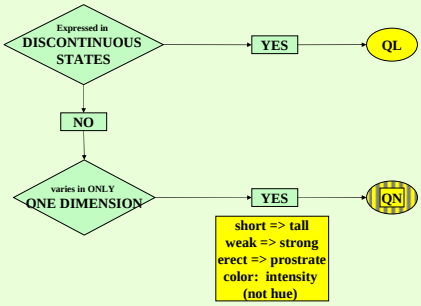



## Pseudo-qualitative Characteristics

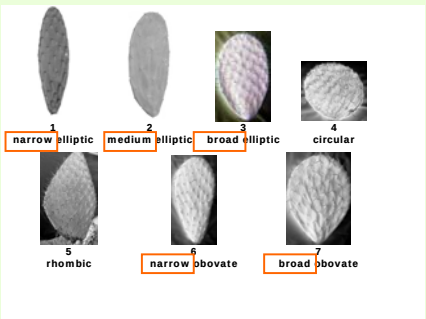
(typical examples)

| | 24. Flower: color of the center | Fleur: couleur du centre | Farbe der Mitte | Flor: color del centro | |
|---|---|---|---|---|---|
| (+) | | | | | |
| PQ | green | vert | grün | verde | 1 |
| | yellow | jaune | gelb | amarillo | 2 |
| | orange | orange | orange | naranja | 3 |
| | pink | rose | rosa | rosa | 4 |
| | red | rouge | rot | rojo | 5 |
| | purple | pourpre | purpura | púrpura | 6 |

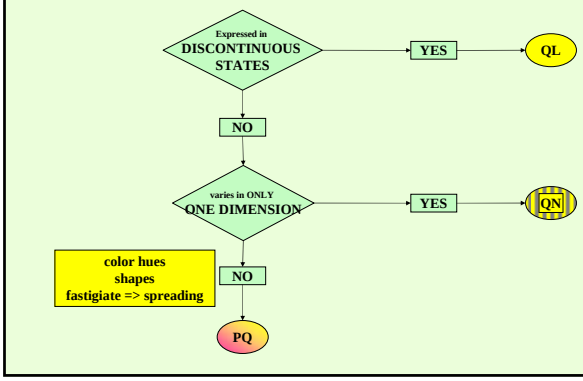
## QL, QN or PQ?



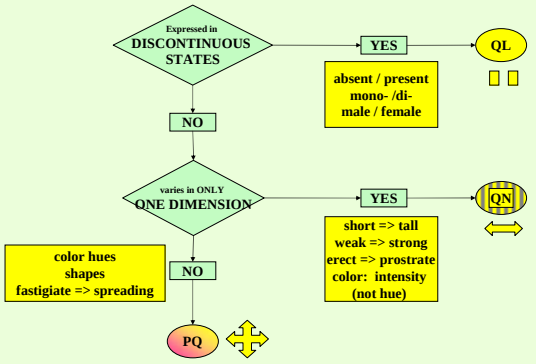

## Opuntia: Shape of Cladode




## QL, QN or PQ?



## QL, QN or PQ?




| | | Note/ Nota |
|---|---|---|
| **1.** | **Plant: ploidy** | |
| | diploid | 2 |
| | tetraploid | 4 |
| | hexaploid | 6 |
| | octoploid | 8 |

## EXERCISE

| | | |
|---|---|---|
| **2.** | **Leaf sheath: anthocyanin coloration** | |
| | absent or very weak | 1 |
| | weak | 3 |
| | medium | 5 |
| | strong | 7 |
| | very strong | 9 |

**(a) What type of Expression?**

**QL: Qualitative**
**QN: Quantitative**
**PQ: Pseudo-qualitative**

**(b) Which Notes represent a clear difference?**

| | | |
|---|---|---|
| **3.** | **Plant: rhizomes** | |
| | absent | 1 |
| | present | 9 |

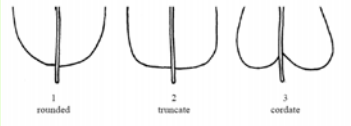
| | | |
|---|---|---|
| **4.** | **Petal: color** | |
| | white | 1 |
| | yellow | 2 |
| | orange | 3 |
| | red | 4 |
| | pink | 5 |
| | purple | 6 |

| | | |
|---|---|---|
| **7.** | **Petal: color** | |
| | RHS Colour Chart (indicate reference number) | |

| | | |
|---|---|---|
| **5.** | **Leaf blade: intensity of green color of upper side** | |
| | light | 3 |
| | medium | 5 |
| | dark | 7 |

| | | |
|---|---|---|
| **8.** | **Leaf blade: profile in cross section** | |
| | straight or weakly concave | 1 |
| | moderately concave | 2 |
| | strongly concave | 3 |

| | | |
|---|---|---|
| **6.** | **Leaf blade: shape of base** | |
| | rounded | 1 |
| | truncate | 2 |
| | cordate | 3 |




## 4. TEST GUIDELINES (document TGP/7)

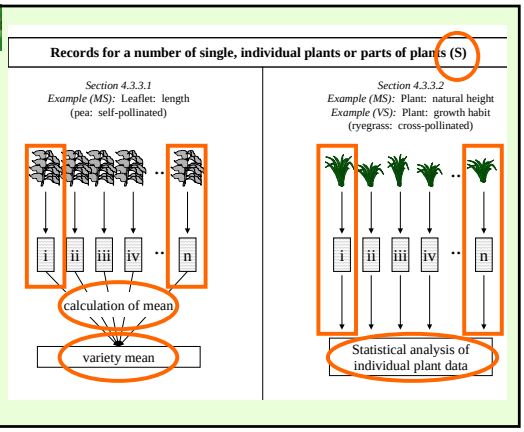
## (c) Method of observation (visual / measurement; single record / several records)

## Method of Observation

**M: Measurement**:
an objective **observation against a calibrated, linear scale** e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.);

**V: Visual observation**:
**includes** observations where the expert uses **reference points** (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts).

"Visual" observation refers to the sensory observations of the expert and, therefore, also **includes smell, taste and touch**.




## Type of Record

(for the purposes of distinctness)

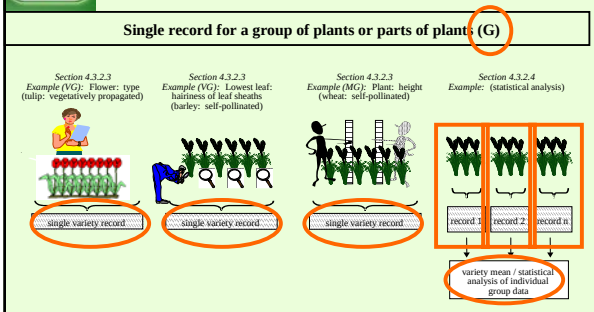
**G**: **single record** for a variety, or a **GROUP of plants** or parts of plants;

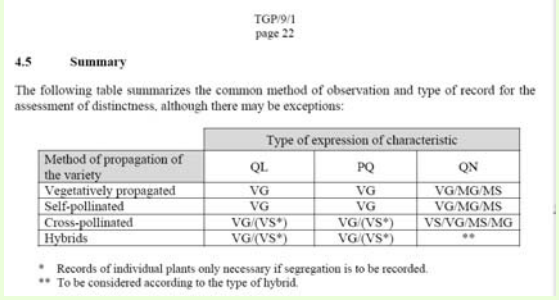
In most cases, "G" provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

**S**: **records** for a number of **SINGLE**, individual **plants** or parts of plants …

## EXERCISE

**MG ?**
**MS ?**
**VG ?**
**VS ?**



TGP/9/1
page 22

**4.5 Summary**

The following table summarizes the common method of observation and type of record for the assessment of distinctness, although there may be exceptions:

| Method of propagation of the variety | Type of expression of characteristic | | |
|---|---|---|---|
| | QL | PQ | QN |
| Vegetatively propagated | VG | VG | VG/MG/MS |
| Self-pollinated | VG | VG | VG/MG/MS |
| Cross-pollinated | VG/(VS*) | VG/(VS*) | VS/VG/MS/MG |
| Hybrids | VG/(VS*) | VG/(VS*) | ** |

* Records of individual plants only necessary if segregation is to be recorded.
** To be considered according to the type of hybrid.

| 1. | | Plant: height (at time of harvest) | |
|---|---|---|---|
| QN | | very short | 1 |
| | | short | 3 |
| | | medium | 5 |
| | | tall | 7 |
| | | very tall | 9 |

| 2. | | Leaf: twisting of tip | |
|---|---|---|---|
| QN | | absent or very weak | 1 |
| | | weak | 3 |
| | | medium | 5 |
| | | strong | 7 |
| | | very strong | 9 |

| 3. | Leaf: undulation of margin of blade | |
|---|---|---|
| QN | absent or very weak | 1 |
| | intermediate | 2 |
| | strong | 3 |

| 4. | Tassel: number of primary lateral branches | |
|---|---|---|
| QN | absent or very few | 1 |
| | few | 3 |
| | medium | 5 |
| | many | 7 |
| | very many | 9 |

| 5. | Leaf: width of blade | |
|---|---|---|
| QN | very narrow | 1 |
| | narrow | 3 |
| | medium | 5 |
| | wide | 7 |
| | very wide | 9 |

| 6. | Plant: time of inflorescence emergence (without vernalization) | |
|---|---|---|
| QN | very early | 1 |
| | early | 3 |
| | medium | 5 |
| | late | 7 |
| | very late | 9 |

| | | |
|---|---|---|
| **7.** | **Plant: vegetative growth habit (without vernalization)** | |
| **QN** | erect | 1 |
| | semi-erect | 3 |
| | medium | 5 |
| | semi-prostrate | 7 |
| | prostrate | 9 |

## Asterisked Characteristic

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

| Char. No. | English | français | Deutsch | español | Example Varieties Exemples Beispielsorten Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|
| (*) | **Plant: growth habit** | **Plante : port** | **Pflanze: Wuchsform** | **Planta: porte** | | |
| QN | upright | dressé | aufrecht | erecto | Inuppink | 1 |
| | semi-upright | semi dressé | halbaufrecht | semierecto | D0158-1 | 2 |
| | spreading | étalé | breitwüchsig | abierto | Summem 03 | 3 |
| | semi-trailing | semi-étalé | halbhängend | semirrastrero | Inupsaf | 4 |
| | trailing | coureux | hängend | rastrero | Organza | 5 |

## 4. TEST GUIDELINES (document TGP/7)

## (d) Asterisked, grouping and TQ characteristics (functional categories)

## Asterisked Characteristic

| Function | Criteria |
|---|---|
| 1.Characteristics that are **important for the international harmonization of variety descriptions**. | 1.Must be a characteristic included in the Test Guidelines.<br><br>2.**Should always be examined** for DUS and included in the variety description **by all members of the Union**<br><br>**EXCEPT** when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.<br><br>3.Must be useful for function 1.<br><br>4.Particular care should be taken before selection of disease resistance characteristics. |

## Standard Test Guidelines Characteristic

| Function | Criteria |
|---|---|
| 1.Characteristics that are **accepted by UPOV for examination of DUS** and from which members of the Union can select those suitable for their particular circumstances. | 1.Must satisfy the criteria for use of any characteristic for DUS as set out in **Chapter 4, section 4.2**.<br><br>2.Must have been **used** to develop a variety description **by at least one member of the Union**.<br><br>3.Where there is a long list of such characteristics and, where considered appropriate, there may be an indication of the extent of use of each characteristic. |

## Grouping Characteristic

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

(a) Plant: growth habit (characteristic 1)
(b) Leaf blade: variegation (characteristic 11)
(c) Upper lobes of corolla: main color (characteristic 24), with the following groups:
- Gr. 1: white
- Gr. 2: yellow
- Gr. 3: orange
- Gr. 4: pink
- Gr. 5: red
- Gr. 6: red purple
- Gr. 7: violet
- Gr. 8: blue

## Grouping Characteristic

| Function | Criteria |
|---|---|
| characteristics in which the **documented states of expression**, even where recorded **at different locations**, can be used either individually or in combination with other such characteristics:<br>**1. to select varieties of common knowledge that can be excluded from the growing trial** used for examination of distinctness, and/or<br>**2. to organize the growing trial so that similar varieties are grouped together** | 1.(a) Qualitative characteristics or<br>(b) Quantitative or pseudo-qualitative characteristics which provide useful discrimination between the varieties of common knowledge from documented states of expression recorded at different locations.<br><br>2.Must be useful for functions 1 and 2.<br><br>3.Should be an **asterisked characteristic** and/or included in the **Technical Questionnaire** or application form. |

TG/13/9
Lettuce/Laitue/Salat/Lechuga, 2004-03-31
- 7 -

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

| | English | français | Deutsch | español | Example Varieties Exemples Beispielsorten Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|
| 1. (*) | **Seed: color** | **Semence: couleur** | **Samen: Farbe** | **Semilla: color** | | |
| | white | blanche | weiß | blanco | Verpia | 1 |
| | yellow | jaune | gelb | amarillo | Durango | 2 |
| | black | noire | schwarz | negro | Kagraner Sommer | 3 |
| 2. (*) (+) | **Seedling: anthocyanin coloration** | **Plantule: pigmentation anthocyanique** | **Keimpflanze: Anthocyanfärbung** | **Plántula: pigmentación antociánica** | | |
| | absent | absente | fehlend | ausente | Verpia | 1 |
| | present | présente | vorhanden | presente | Pirat | 9 |
| 3. | **Seedling: size of cotyledon (fully developed)** | **Plantule: taille du cotylédon (à complet développement)** | **Keimpflanze: Größe des Keimblatts (voll entwickelt)** | **Plántula: tamaño del cotiledón (plenamente desarrollado)** | | |
| | small | petit | klein | pequeño | Romance | 3 |
| | medium | moyen | mittel | medio | Expresse | 5 |
| | large | grand | groß | grande | Verpia | 7 |

## Relationship between functions

(a) **GROUPING CHARACTERISTICS** selected from the Table of Characteristics should, in general, **receive an asterisk** in the Table of Characteristics and be **included in the Technical Questionnaire**.

(b) **TQ CHARACTERISTICS** selected from the Table of Characteristics should, in general, **receive an asterisk** in the Table of Characteristics and be **used as grouping characteristics**. TQ characteristics are **not restricted to** those characteristics used as **grouping characteristics**;

(c) **ASTERISKED CHARACTERISTICS** are **not restricted to** those characteristics selected as **grouping or TQ characteristics**.

TG/219/1
Perilla/Pérille/Perilla/Perilla, 2004-03-31
- 10 -

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| 14. | VG | **Leaf blade: intensity of purplish color of lower side** | **Limbe: intensité de la couleur pourpre de la face inférieure** | **Blattsprite: Intensität der Purpurfarbe der Unterseite** | **Limbo: intensidad del color purpúreo del envés** | | |
| QN | (a) | very light | très claire | sehr hell | muy claro | | 1 |
| | | light | claire | hell | claro | Perlime | 3 |
| | | medium | moyenne | mittel | medio | | 5 |
| | | dark | foncée | dunkel | oscuro | Perro | 7 |
| | | very dark | très foncée | sehr dunkel | muy oscuro | Hora, Purple | 9 |
| 15. | VG | **Leaf blade: profile** | **Limbe: profil** | **Blattsprite: Profil** | **Limbo: perfil** | | |
| QN | (a) | concave | concave | konkav | cóncavo | Perro | 3 |
| | | plane | plan | flach | plano | Pergro, Saeyeupsil | 5 |
| | | convex | convexe | konvex | convexo | | 7 |

## 4. TEST GUIDELINES (document TGP/7)

## (e) Example varieties

Brachyscome/Blaues Gänseblümchen, 2005-04-06
- 7 -

7 Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| 1. (*) (+) | | **Plant: growth type** | **Plante: type de croissance** | **Pflanze: Wuchstyp** | **Planta: tipo de crecimiento** | | |
| QL | (a) | basal clumps | en amas à la base | basale Büschel | en racimos basales | | 1 |
| | | bushy | buissonnant | buschig | arbustivo | | 2 |
| 3. (+) | | **Only varieties with bushy growth type: Plant: predominant attitude of stems** | **Variétés à type de croissance buissonnant uniquement: Plante: port le plus fréquent des tiges** | **Nur Sorten mit buschigem Wuchstyp: Pflanze: vorherrschende Haltung der Triebe** | **Sólo variedades con tipo de crecimiento arbustivo: Planta: porte predominante de los tallos** | | |
| QN | (a) | upright | dressées | aufrecht | erecto | | 1 |
| | | semi upright | demi-dressées | halbaufrecht | semierecto | | 3 |
| | | horizontal | horizontales | waagerecht | horizontal | | 5 |
| 3. | | **Only varieties with bushy growth type: Plant: number of stems** | **Variétés à type de croissance buissonnant uniquement: Plante: nombre de tiges** | **Nur Sorten mit buschigem Wuchstyp: Pflanze: Anzahl Triebe** | **Sólo variedades con tipo de crecimiento arbustivo: Planta: número de tallos** | | |
| QN | (a) | few | peu nombreuses | klein | bajo | | 3 |
| | | medium | moyennement nombreuses | mittel | medio | | 5 |
| | | many | nombreuses | groß | alto | | 7 |
| 4. (*) (+) | | **Plant: height including flowers** | **Plante: hauteur, fleurs comprises** | **Pflanze: Höhe einschließlich Blüten** | **Planta: altura, incluidas las flores** | | |
| QN | (a) | short | basse | niedrig | corta | Mardi Gras | 3 |
| | | medium | moyenne | mittel | media | Breakaday | 5 |
| | | tall | élevée | hoch | larga | Happy Face Pink | 7 |

## Example Varieties: the Objective

Clarify states of expression

- Illustrate characteristics
- Determine the state of expression

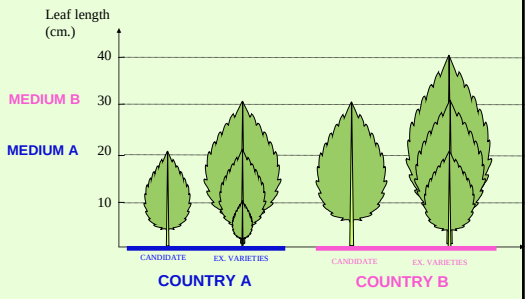
→ Harmonized descriptions

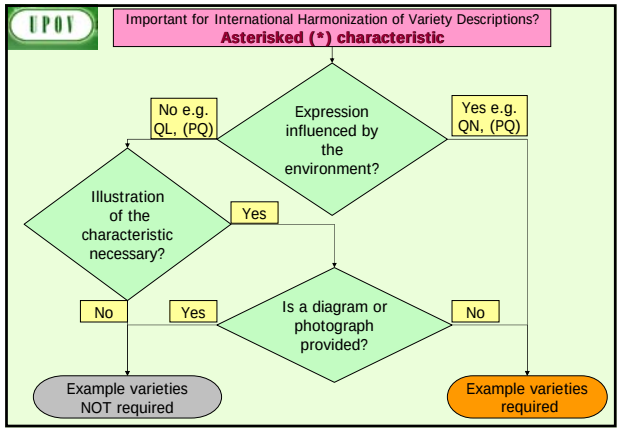
## Example Varieties – the need

**NEED**

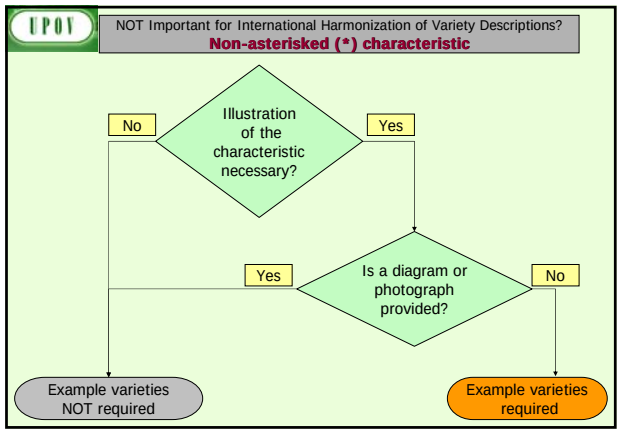
- in characteristics used to **harmonize descriptions**
- and
- which are **influenced by the environment**

## Example Varieties versus Measurements




## Example Varieties –the need



## Example Varieties - availability

**widely and freely available**

- National Authority
- DUS examiners
- Breeders

## Example Varieties number

**All desired characteristics covered with the minimum number of example varieties**

## Example Varieties within the collection

**must show the range of expression in the collection**

- QN
  - **3 : short**
  - **5 : medium**
  - **7 : long**
- PQ:
  - **cover the whole range**

## Example Varieties - agreement

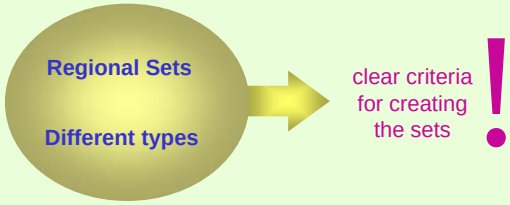
**Proposed by the Leading Expert of the TG (in cooperation with interested experts)**

**Accepted if no objections are presented**

## Example Varieties Fluctuation

**Maintain the expression for the characteristic in relation to the other varieties in the collection**

## Example Varieties - multiple sets



## 4. TEST GUIDELINES (document TGP/7)

## (f) The process for developing UPOV Test Guidelines

### EXAMPLE (New Test Guidelines)

Test Guidelines: ***Plantus magnifica*** **L.**
**(Common name: Alpha)**

Technical Working Party: **TWX**

| | |
|---|---|
| TWX (2005): | Alpha (proj.**1**) |
| TWX (2006): | Alpha (proj.**2**) |
| TWX (2007): | Alpha (proj.**3**) |
| Enlarged Editorial Committee (2008): | Alpha (proj.**4**) |
| Technical Committee (2008): | Alpha (proj.**5**) |
| Final adopted document (2008): | **TG/500/1** |

### Test Guidelines

- **257 Test Guidelines** adopted

but...

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

## 5. UPOV DATABASES

### PRIORITY for UPOV Test Guidelines

**PRIORITY for species or crops with high:**

- **number of authorities receiving PBR applications;**
- **number of PBR applications;**
- **number of foreign applications received by UPOV members;**
- **economic importance;**
- **level of breeding activity**

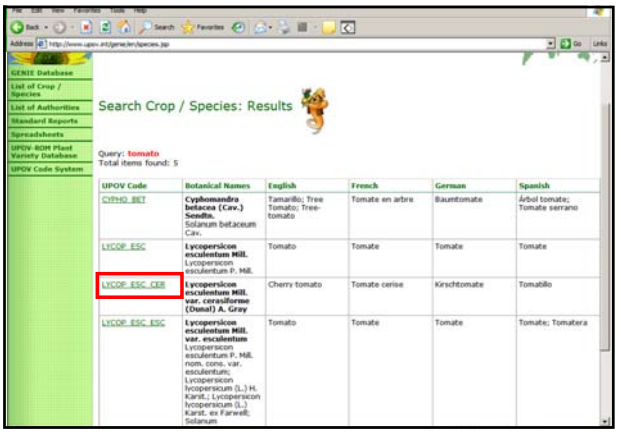
### Article 20 of the 1991 Act (Variety denominations)

(2) [*Characteristics of the* ***denomination***]

In particular, it **must be different from every denomination** which designates, in the territory of any Contracting Party, **an existing variety** of the same plant species or of a closely related species.

## GENIE Database

(Genus / species)



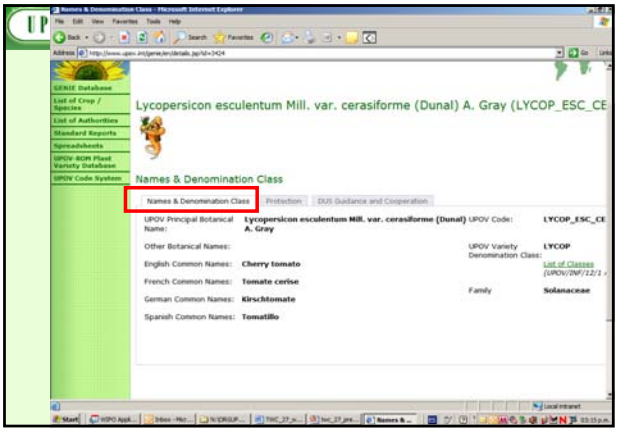

## GENIE Database

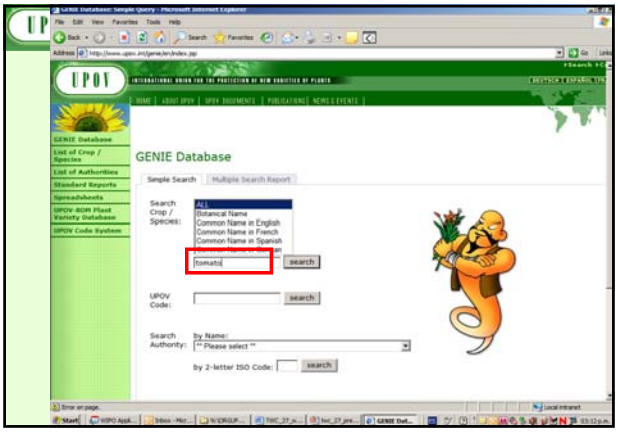
Variety denomination related information

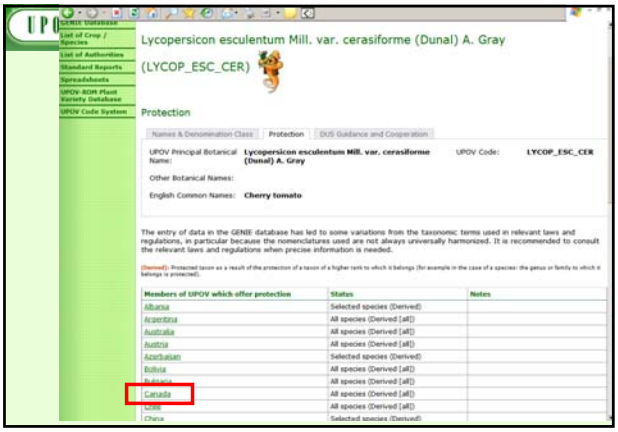
Protection offered by UPOV members

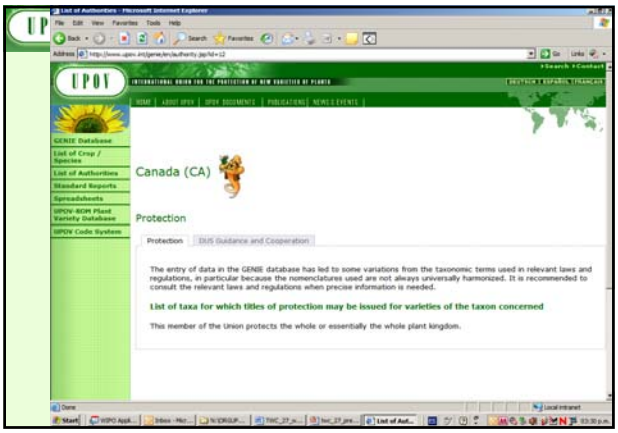
**DUS information**

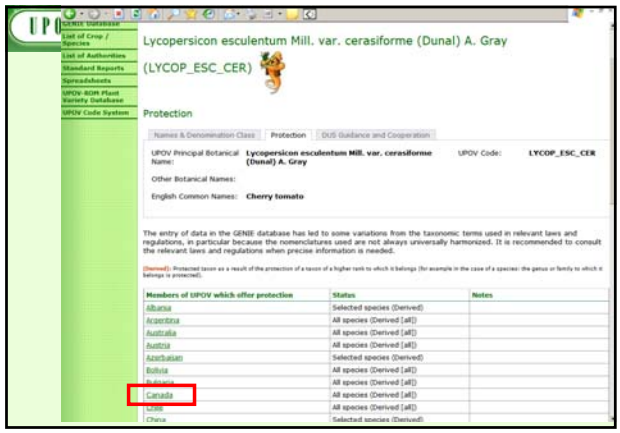
- UPOV Test Guidelines
- practical experience of UPOV (document TC/44/4)
- cooperation in DUS examination (document C/41/5)

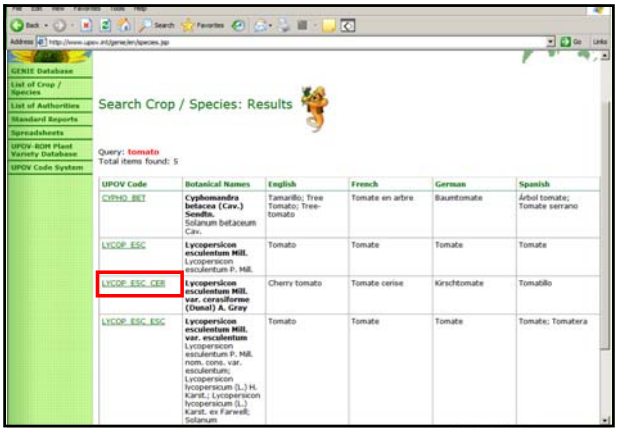


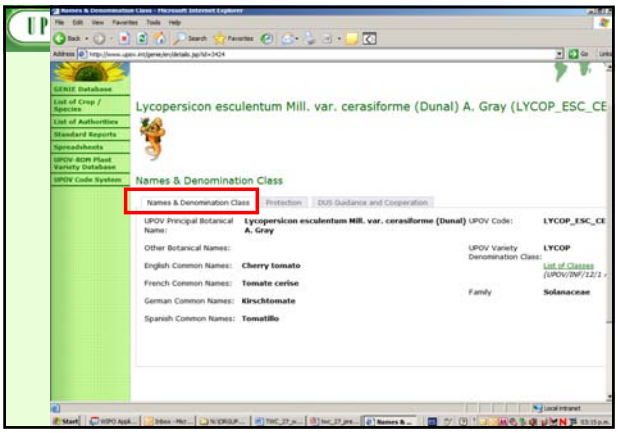



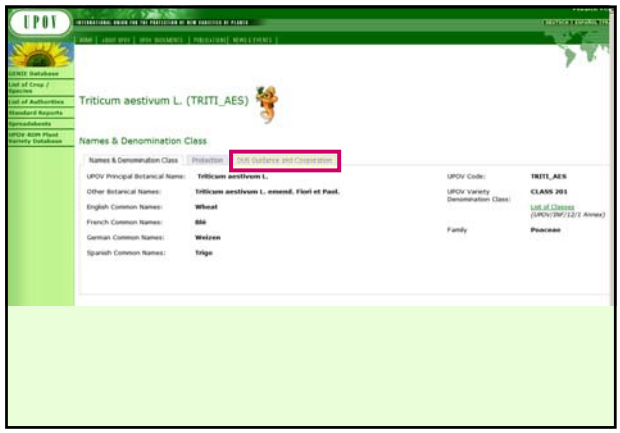

Canada (CA)
Protection
List of taxa for which titles of protection may be issued for varieties of the taxon concerned
This member of the Union protects the whole or essentially the whole plant kingdom.

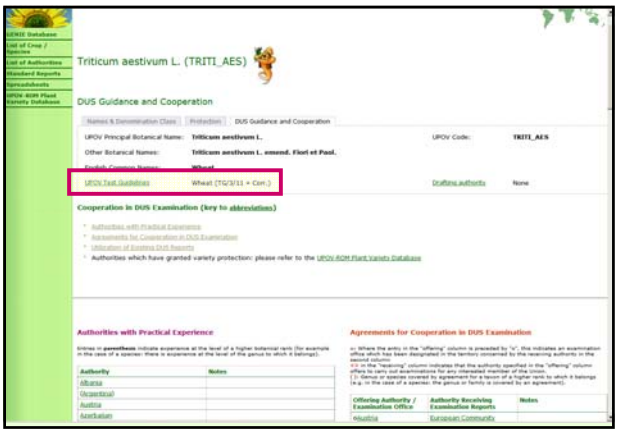

Lycopersicon esculentum Mill. var. cerasiforme (Dunal) A. Gray
(LYCOP_ESC_CER)
Protection
Canada


Search Crop / Species: Results
Query: tomato
Total items found: 5
LYCOP_ESC_CER

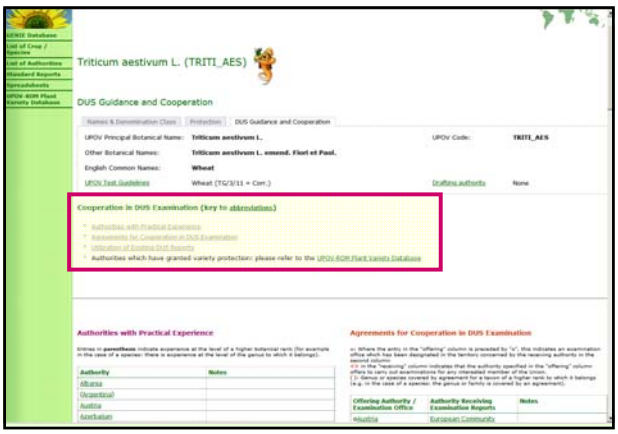

Canada (CA)
Protection
List of taxa for which titles of protection may be issued for varieties of the taxon concerned
This member of the Union protects the whole or essentially the whole plant kingdom.

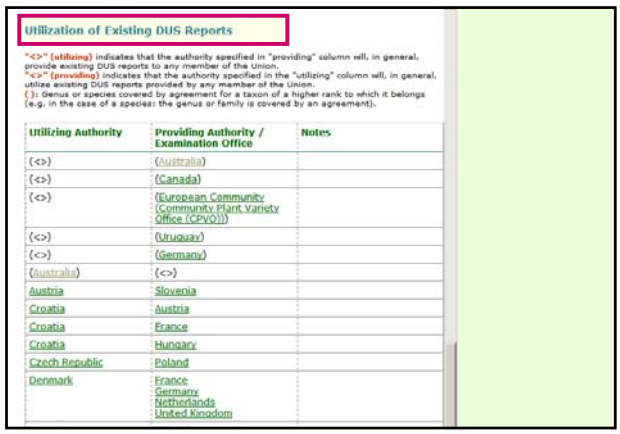

Lycopersicon esculentum Mill. var. cerasiforme (Dunal) A. Gray (LYCOP_ESC_CE
Names & Denomination Class
Cherry tomato
Tomate cerise
Kirschtomate
Tomatillo
Solanaceae


Triticum aestivum L. (TRITI_AES)
Names & Denomination Class
Wheat
Blé
Weizen
Trigo
Poaceae


Triticum aestivum L. (TRITI_AES)
DUS Guidance and Cooperation
Cooperation in DUS Examination (key to abbreviations)
Authorities with Practical Experience
Agreements for Cooperation in DUS Examination


Authorities with Practical Experience
Agreements for Cooperation in DUS Examination


Triticum aestivum L. (TRITI_AES)
DUS Guidance and Cooperation
Cooperation in DUS Examination (key to abbreviations)
Authorities with Practical Experience
Agreements for Cooperation in DUS Examination


Utilization of Existing DUS Reports
"<>" (utilizing) indicates that the authority specified in "providing" column will, in general, provide existing DUS reports to any member of the Union.
"<>" (providing) indicates that the authority specified in the "utilizing" column will, in general, utilize existing DUS reports provided by any member of the Union.
{}: Genus or species covered by agreement for a taxon of a higher rank to which it belongs (e.g. in the case of a species: the genus or family is covered by an agreement).
Utilizing Authority
Providing Authority / Examination Office
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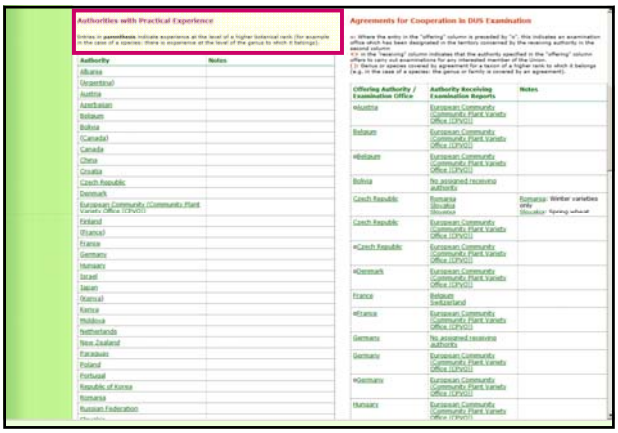
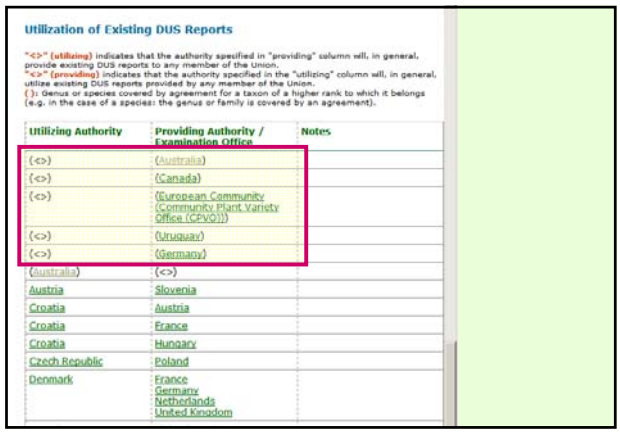

Authorities with Practical Experience
Agreements for Cooperation in DUS Examination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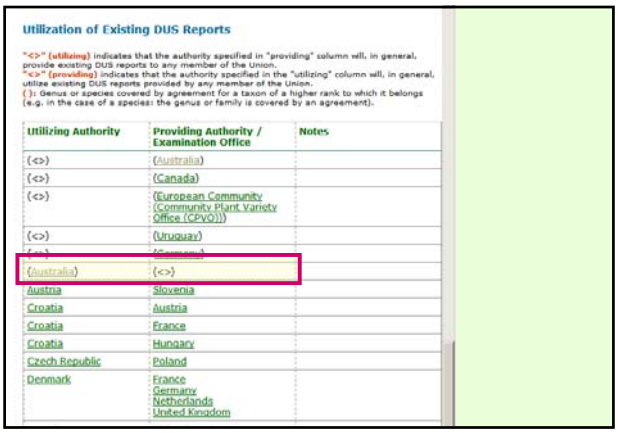
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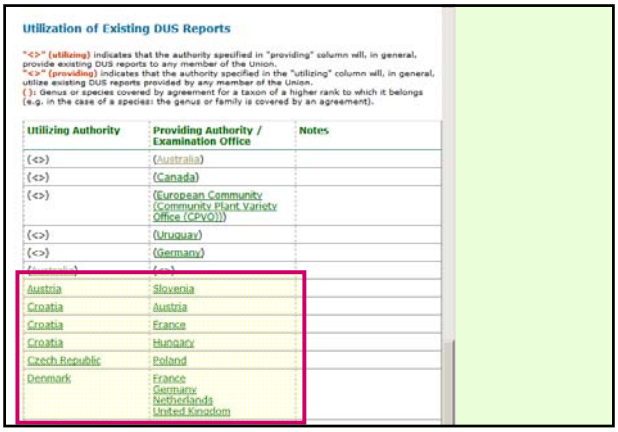
Providing Authority / Examination Office
Notes
(<>) (Australia)
(<>) (Canada)
(<>) (European Community (Community Plant Variety Office (CPVO)))
(<>) (Uruguay)
(Australia) (<>)
Austria Slovenia
Croatia Austria
Croatia France
Croatia Hungary
Czech Republic Poland
Denmark France Germany Netherlands United Kingdom


UPOV
UPOV Website
http://www.upov.int
(e-mail: upov.mail@upov.int)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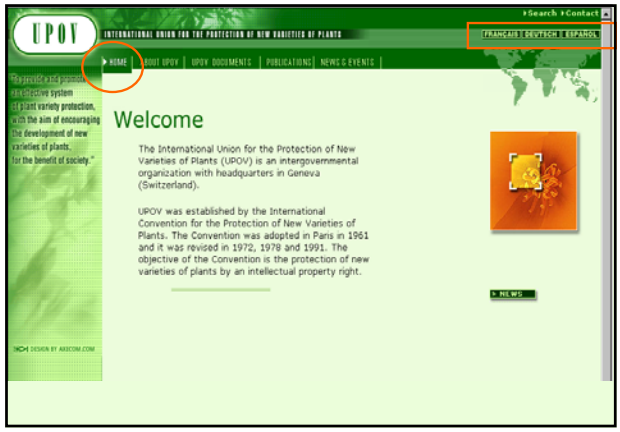
Denmark France Germany Netherlands United Kingdom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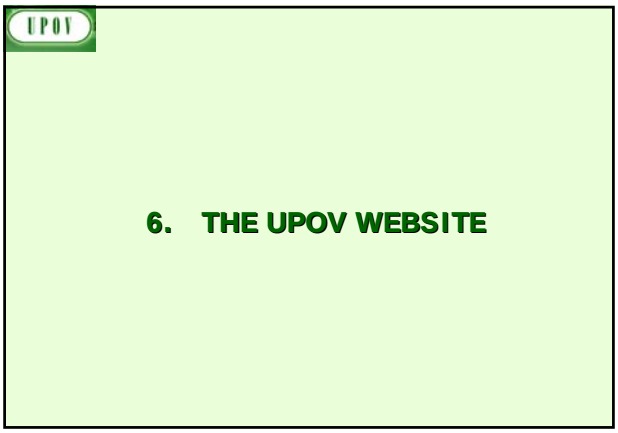
The International Union for the Protection of New Varieties of Plants (UPOV) is an intergovernmental organization with headquarters in Geneva (Switzerland).
UPOV was established by the International Convention for the Protection of New Varieties of Plants. The Convention was adopted in Paris in 1961 and it was revised in 1972, 1978 and 1991. The objective of the Convention is the protection of new varieties of plants by an intellectual property right.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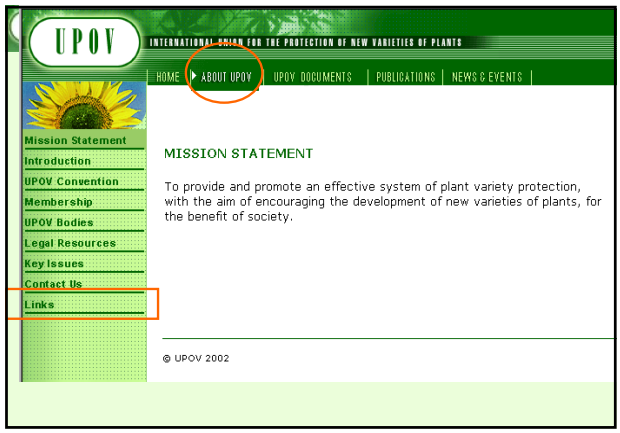
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To provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.
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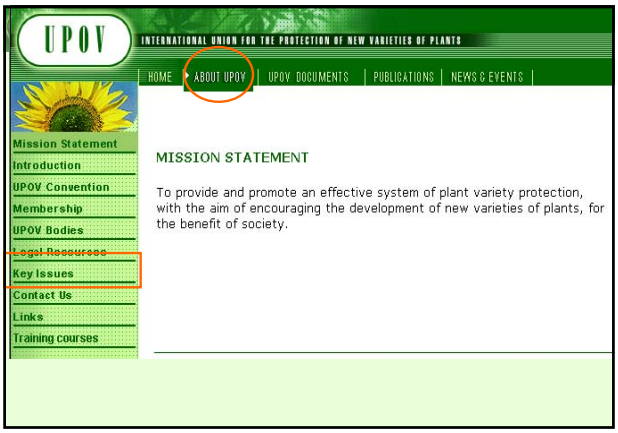
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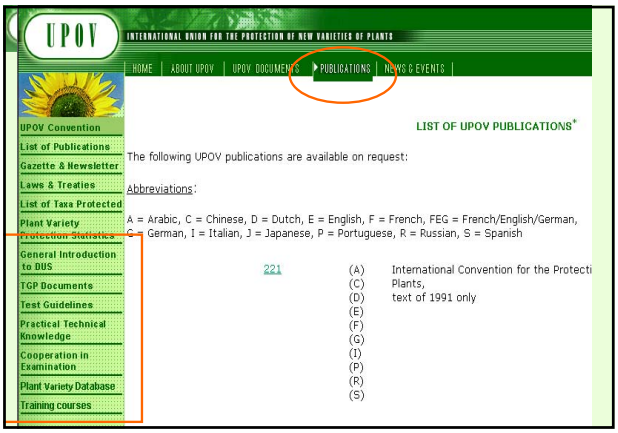
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Plant Variety Database
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LIST OF UPOV PUBLICATIONS*
The following UPOV publications are available on request:
Abbreviations:
A = Arabic, C = Chinese, D = Dutch, E = English, F = French, FEG = French/English/German,
G = German, I = Italian, J = Japanese, P = Portuguese, R = Russian, S = Spanish
221
(A) International Convention for the Protecti
(C) Plants,
(D) text of 1991 only
(E)
(F)
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(P)
(R)
(S)


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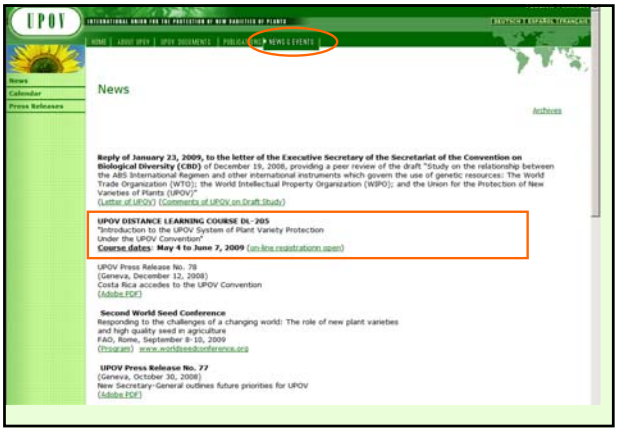
UPOV Report on the Impact of Plant Variety Protection
Breeder's exemption
Breeder's exemption in the 1978 and the 1991 Act of the UPOV Convention
Notion of Breeder and Common Knowledge
The Notion of Breeder and Common Knowledge
Genetic Resources and Benefit-Sharing
Reply of January 23, 2009, to the letter of the Executive Secretary of the Secretariat of the Convention on Biological Diversity (CBD) of December 19, 2008, providing a peer review of the draft "Study on the relationship between the ABS International Regimen and other international instruments which govern the use of genetic resources: The World Trade Organization (WTO); the World Intellectual Property Organization (WIPO); and the Union for the Protection of New Varieties of Plants (UPOV)"
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
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))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UPOV DISTANCE LEARNING COURSE DL-205
"Introduction to the UPOV System of Plant Variety Protection Under the UPOV Convention"
Course dates: May 4 to June 7, 2009
UPOV Press Release No. 78
(Geneva, December 12, 2008)
Costa Rica accedes to the UPOV Convention
Second World Seed Conference
Responding to the challenges of a changing world: The role of new plant varieties and high quality seed in agriculture
FAO, Rome, September 8-10, 2009
UPOV Press Release No. 77
(Geneva, October 30, 2008)
New Secretary-General outlines future priorities for UPOV


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(available in Adobe PDF format)
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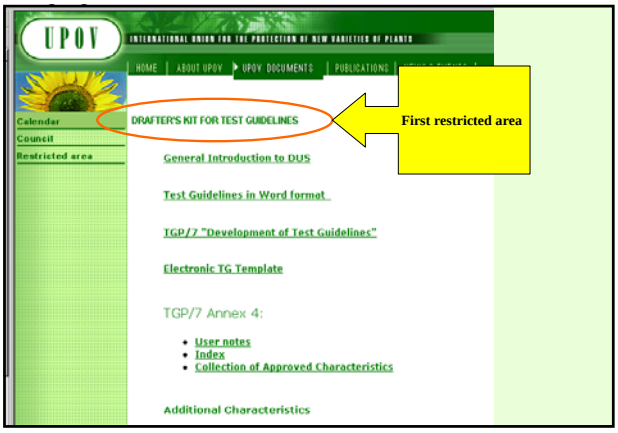
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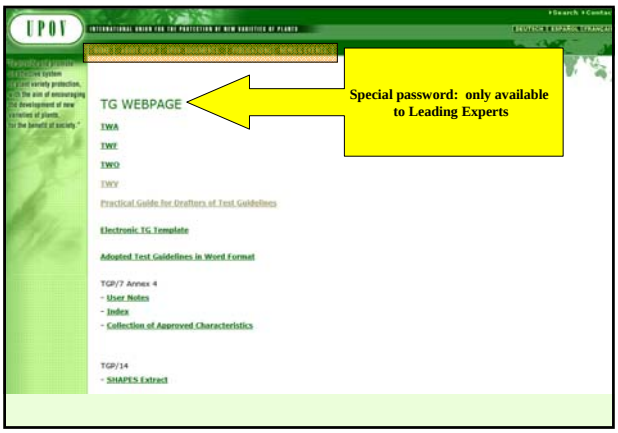


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**THANK YOU**

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## 7. AGENDA for the TWP Session

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## 8. FEEDBACK