

UPOV

**TECHNICAL WORKING PARTY
FOR AGRICULTURAL CROPS**

Thirty-seventh Session
Nelspruit, South Africa, 2008

PREPARATORY WORKSHOP

July 13, 2008

UPOV

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 (V/M; G/S)
 - (d) Asterisked, grouped and TQ characteristics
 - (e) Example varieties
 - (f) The process for developing UPOV Test Guidelines
5. The UPOV website
6. Agenda for the TWP meeting

UPOV

1. INTRODUCTION TO UPOV

UPOV

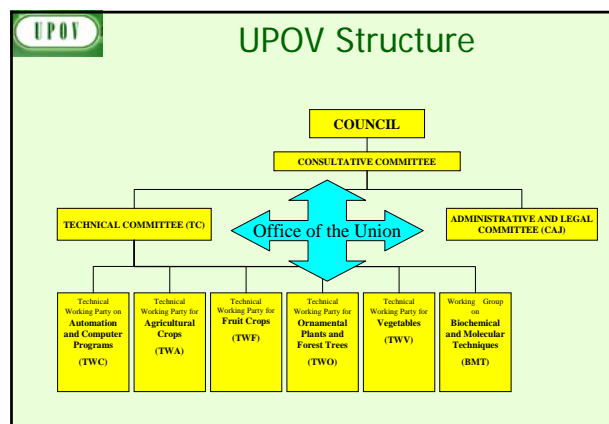
**The International Convention for the
Protection of New Varieties of Plants**
established in 1961

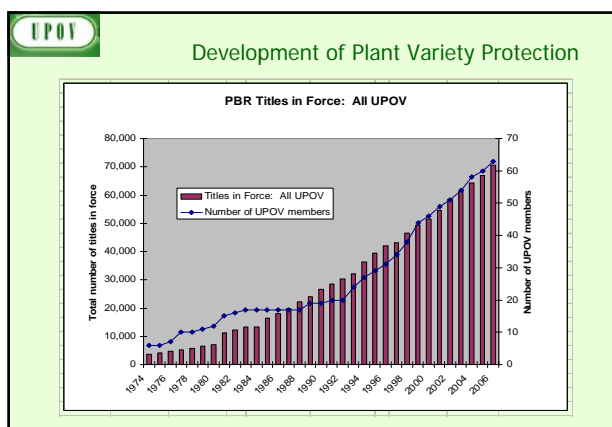
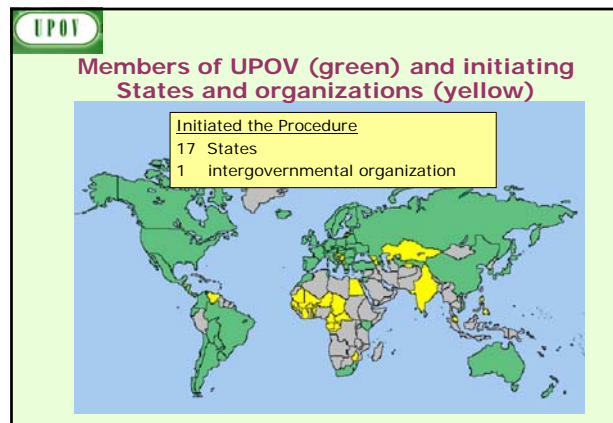
**The International Union for the Protection
of New Varieties of Plants**

**Union internationale pour la
protection des obtentions végétales**

UPOV

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





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**"*



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

THE CONDITIONS FOR GRANTING A BREEDER'S RIGHT

Criteria to be satisfied

- NOVELTY
- **DISTINCTNESS**
- **UNIFORMITY**
- **STABILITY**



"DUS"

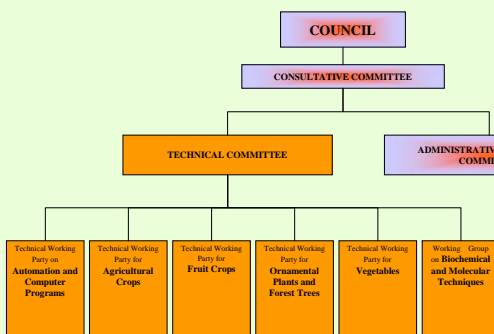
THE CONDITIONS FOR GRANTING A BREEDER'S RIGHT

Other conditions

- VARIETY DENOMINATION
- FORMALITIES
- PAYMENT OF FEES

NO OTHER CONDITIONS!

UPOV Structure



3. OVERVIEW OF THE GENERAL INTRODUCTION

(DOCUMENT TG/1/3 AND TGP DOCUMENTS)

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:

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

UPOV	
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	
PROGRAM	
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4. TEST GUIDELINES

(a) Introduction

- 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/21/11
ORIGINAL: English
DATE: 2004-04-11

E

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

CACTUS PEAR
and
KUCUNONILES

(Specific Groups 1 & 2)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:

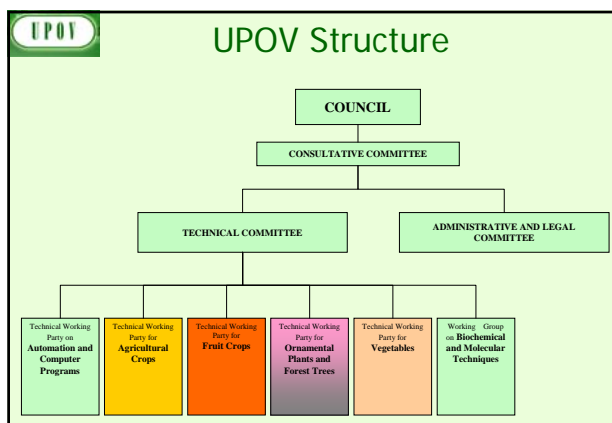
Latin	English	French	German	Spanish
Specific Group 1	Cactus pear, Prickly pear	Figuer de Barbarie	Figuetbaum	Chumbera, Nopal
Specific Group 2	Kucunoniles	Kucunoniles	Kucunoniles	Kucunoniles

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 International Descriptions of New Varieties of Plants" (hereinafter referred to as the "General Introduction") and its associated "TGP" documents.

These guidelines were revised at the time of the introduction of these Test Guidelines for use by member states. (Revisions are subject to review by the UPOV Council, which can be found on the UPOV Website www.upov.int for the latest information.)

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



TGP/7 "Development of Test Guidelines"

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

- ## 1. Introduction
- Purpose of document TGP/7:
- ♣to provide guidance on the development of **UPOV TEST GUIDELINES**
 - ♣to provide guidance on the development of **INDIVIDUAL AUTHORITIES' TEST GUIDELINES**, in the absence of UPOV Test Guidelines

- ## The TG Template
- (Annex I of document TGP/7)*
- Format of the cover page,
 - Universal Standard wording of 10 Chapters,
 - Format of the Table of Characteristic (Chapter 7),
 - Format of the Technical Questionnaire (Chapter10)

UPOV **TGP/7** **E**

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS (UPOV)

DRAFT

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MAIN COMMUNICATION
(Type of Technical name)
(UPOV Code)
(UPOV - Technical name)

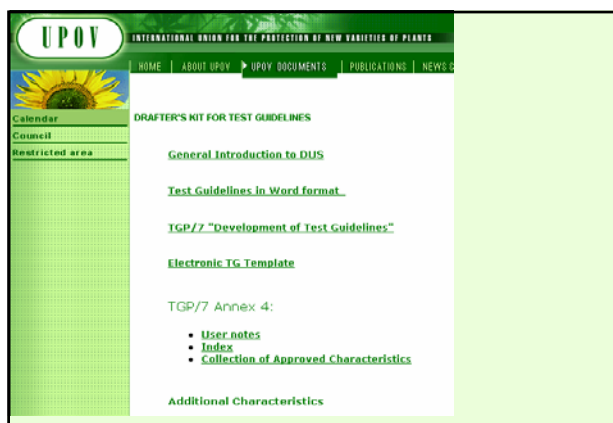
GUIDELINES
FOR THE CONDUCT OF TESTS
FOR DISTINGUISHING, UNIFORMITY AND STABILITY
prepared by the expert group (TGP/7) from the detailed practical guidelines for the introduction, introduction of distinction, uniformity and stability (DUS) test, in particular, to identify appropriate characteristics for the evaluation of DUS and protection of distinctness, uniformity and stability (DUS).

Abbreviation Tables

Abbreviation	English	French	German	Spanish
UPOV	UPOV	UPOV	UPOV	UPOV

The purpose of these guidelines (TGP/7) is to identify the principles contained in the UPOV Test Guidelines (TGP/7), and to associated TGP documents, for detailed practical guidelines for the introduction, introduction of distinction, uniformity and stability (DUS) test, in particular, to identify appropriate characteristics for the evaluation of DUS and protection of distinctness, uniformity and stability (DUS).

These guidelines were developed by the expert group (TGP/7) from the detailed practical guidelines for the introduction, introduction of distinction, uniformity and stability (DUS) test, in particular, to identify appropriate characteristics for the evaluation of DUS and protection of distinctness, uniformity and stability (DUS).



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

Format of the Table of Characteristic

Char. No. (*) (QL, QN, PQ)		English	français	deutsch	español	Example Varieties/ Beispielsorten/ Variedades ejemplo	Note/ Nota
IN 14 [Order of characteristics in the Table of Characteristics]		IN 24 [Heading of a characteristic]	IN 24 [Heading of a characteristic]	IN 24 [Heading of a characteristic]	IN 24 [Heading of a characteristic]		
IN 15 [Asterisked characteristics (conducting the examination)]	IN 25 [Recommendations for conducting the examination]	IN 25 [States of expression of a characteristic]	IN 25 [States of expression of a characteristic]	IN 25 [States of expression of a characteristic]	IN 25 [States of expression of a characteristic]	IN 16 [Example varieties]	IN 26 [Notes]
IN 21 [Explanation of the characteristic]	IN 23 [Growth stage]	IN 24 [States of expression of a characteristic]	IN 25 [States of expression of a characteristic]	IN 25 [States of expression of a characteristic]	IN 25 [States of expression of a characteristic]	IN 16 [Example varieties]	IN 26 [Notes]
IN 21 [Type of expression of the characteristic]	[Other]	IN 24 [States of expression of a characteristic]	IN 25 [States of expression of a characteristic]	IN 25 [States of expression of a characteristic]	IN 25 [States of expression of a characteristic]	IN 16 [Example varieties]	IN 26 [Notes]

4. TEST GUIDELINES

(b) Guidance on drafting characteristics

- selection of characteristics
- types of expression (QL, QN, PQ)
- states of expression / notes

"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) :

- results from a given genotype** or combination of genotypes;
- is sufficiently **consistent and repeatable** in a **particular environment**;
- exhibits sufficient **variation between varieties** to be able to establish distinctness;
- is capable of **precise definition and recognition**;
- allows **uniformity requirements** to be fulfilled;
- 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.

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Selection of Characteristics

- Yield ???
- Straw strength ???

Etc.

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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		

UPOV

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

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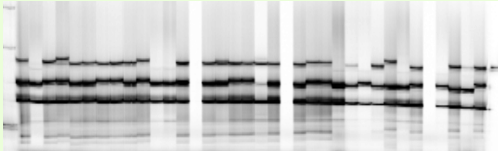
Special Characteristics: Disease Resistance

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

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Molecular Techniques?



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TYPE OF EXPRESSION OF CHARACTERISTICS (QL, QN, PQ)

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**.

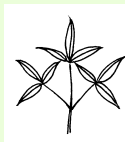
Clematis: Leaf: type



1
simple



2
ternate



3
biternate



4
triternate

Qualitative Characteristics

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.

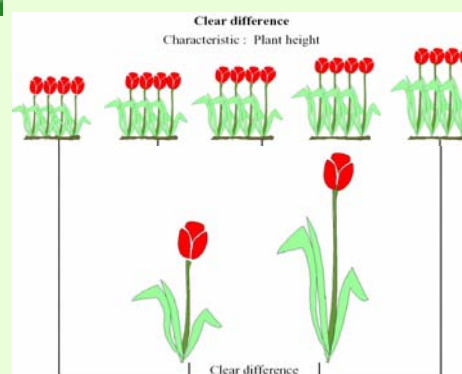
(e.g. sex of plant: dioecious female (1), dioecious male (2), monoecious unisexual (3), monoecious hermaphrodite (4)).

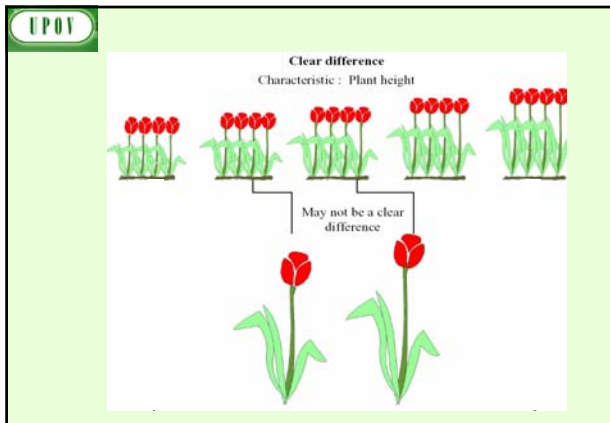
Quantitative Characteristics

“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 assessment.

Quantitative Characteristics

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

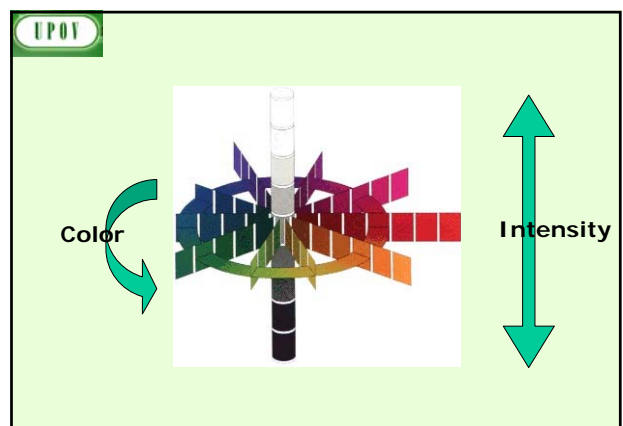
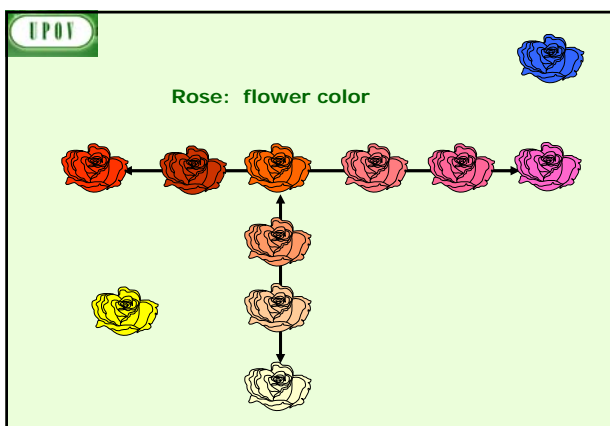
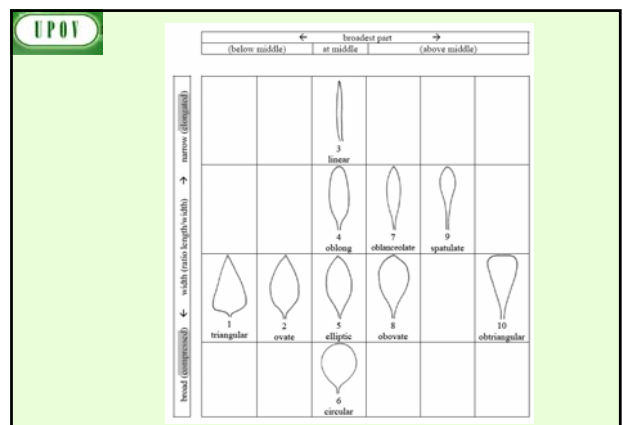
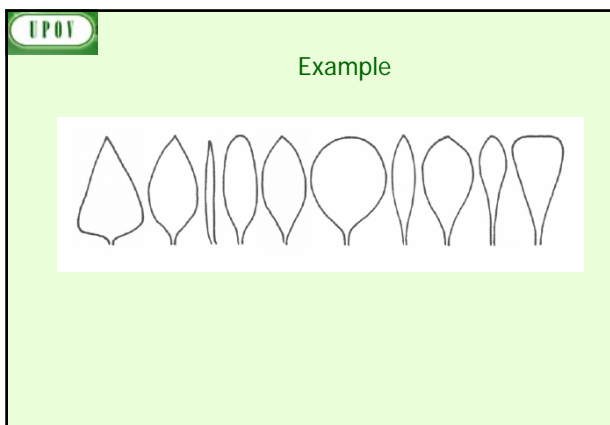




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Pseudo-Qualitative Characteristics

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.



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Pseudo-Qualitative Characteristics

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.

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STATES / NOTES for QL, QN ,PQ

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Qualitative Characteristics

(typical example)

English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
19. VG (*) (*)					
QL	Type 1				1
	Type 2				2
	Type 3				3

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Qualitative Characteristics

(special cases)

Char No.	Method of Examination	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
1. MS (*) (*)							
QL		diploid					2
		tetraploid					4
3. VG (*) (*)							
QL		absent				Gumpoong	1
		present				Chunpoong, Gopoong	9

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Quantitative Characteristics

weak/strong
short/long
small/large





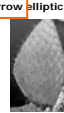


Note	State	Note	State
1	very weak (or: absent or very weak)	1	very small (or: absent or very small)
2	very weak to weak	2	very small to small
3	weak	3	small
4	weak to medium	4	small to medium
5	medium	5	medium
6	medium to strong	6	medium to large
7	strong	7	large
8	strong to very strong	8	large to very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

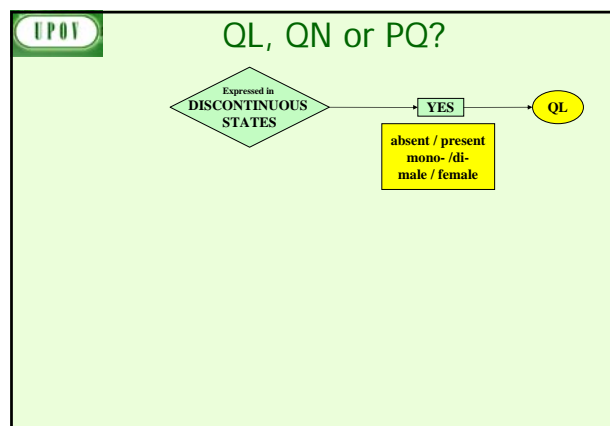
UP01			
Quantitative Characteristics			
Standard Range Version 1	Standard Range Version 2	Standard Range Version 3	Standard Range Version 4
1 very weak (or: absent or very weak)	1 very weak (or: absent or very weak)	-	-
3 weak	3 weak	3 weak	3 weak
5 medium	5 medium	5 medium	5 medium
7 strong	7 strong	7 strong	7 strong
9 very strong	-	9 very strong	-

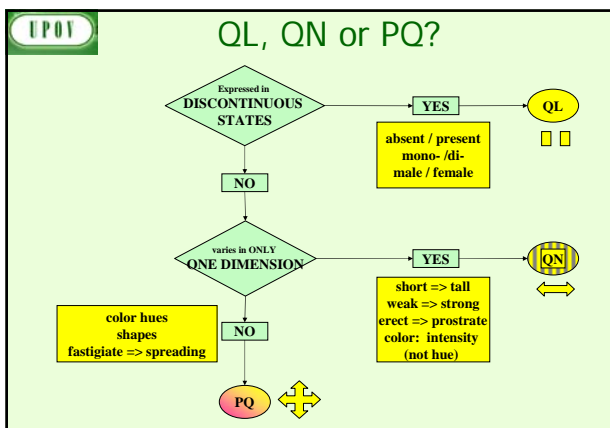
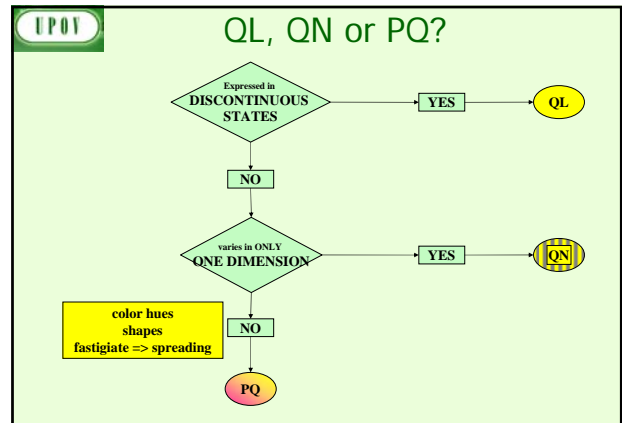
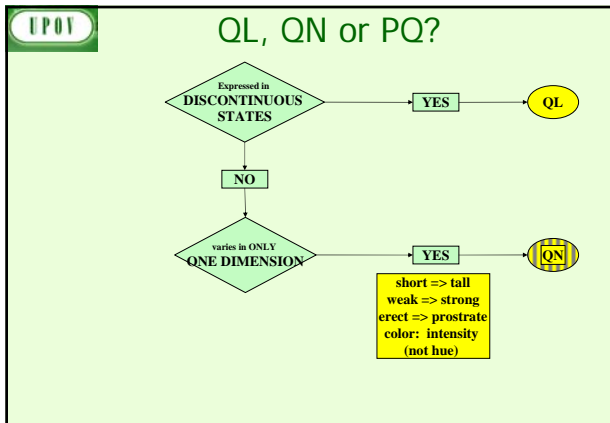
UP01				
Quantitative Characteristics				
State	Example 1	Example 2	Example 3	Example 4
	Size relative to:	Angle:	Position:	Length in relation to:
1	much smaller	very acute	at base	equal
3	moderately smaller	moderately acute	one quarter from base	slightly shorter
5	same size	right angle	in middle	moderately shorter
7	moderately larger	moderately obtuse	one quarter from apex end	much shorter
9	much larger	very obtuse	at apex	very much shorter

UP01	
Quantitative Characteristics	
Limited range	
State	Example 1
1	erect
3	semi-erect
5	prostrate
Condensed range	
Example 1	Example 2
1 e.g. absent or very weak (<i>absent or very weakly expressed</i>)	1 e.g. absent or weak (<i>absent or weakly expressed</i>)
2 weak (<i>weakly expressed</i>)	2 moderate (or medium) (<i>moderately expressed</i>)
3 strong (<i>strongly expressed</i>)	3 strong (<i>strongly expressed</i>)

UP01				
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	plúvia	6

UP01	
Opuntia: Shape of Cladode	
	
	
	
	





UPOY

EXERCISE

UPOY

Types of Expression

QL: Qualitative

QN: Quantitative

PQ: Pseudo-qualitative

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

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2. Leaf sheath: anthocyanin coloration

absent or very weak	1
weak	3
medium	5
strong	7
very strong	9

UPOY

3. Plant: rhizomes

absent	1
present	9

UPOY

4. Plant: growth habit

erect	1
semi erect	3
medium	5
semi prostrate	7
prostrate	9

UPOY

5. Leaf blade: ratio length/width

very small	1
small	3
medium	5
large	7
very large	9

UPOY

6. Petal: color

white	1
yellow	2
orange	3
red	4
pink	5
purple	6

UPOY

7. Leaf blade: intensity of green color of upper side

light	3
medium	5
dark	7

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8. Leaf blade: shape of base

acute	1
obtuse	2
truncate	3
cordate	4

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9. Petal: color

RHS Colour Chart
(indicate reference number)

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10. Leaf blade: profile in cross section

straight or weakly concave	1
moderately concave	2
strongly concave	3




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11. Flower: position of stigma relative to anthers

below	1
same level	2
above	3

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12. Petal: shape (excluding claw)

broad elliptic	1	
circular	2	
oblate	3	

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4. TEST GUIDELINES
(document TGP/7)

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

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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**.

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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 ...

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Single record for a group of plants or parts of plants (G)

Section 4.3.2.3

Example (VG): Flower: type (tulip: vegetatively propagated)

single variety record

Section 4.3.2.3

Example (VG): Lowest leaf: hairiness of leaf sheaths (barley: self-pollinated)

single variety record

Section 4.3.2.3

Example (MG): Plant: height (wheat: self-pollinated)

single variety record

Section 4.3.2.4

Example: (statistical analysis)

record 1 record 2 record n

variety mean / statistical analysis of individual group data

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Records for a number of single, individual plants or parts of plants (S)

Section 4.3.3.1

Example (MS): Leaflet: length (pea: self-pollinated)

i ii iii iv n

calculation of mean

variety mean

Section 4.3.3.2

Example (MS): Plant: natural height

Example (VS): Plant: growth habit (ryegrass: cross-pollinated)

i ii iii iv n

Statistical analysis of individual plant data

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4. TEST GUIDELINES (document TGP/7)

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

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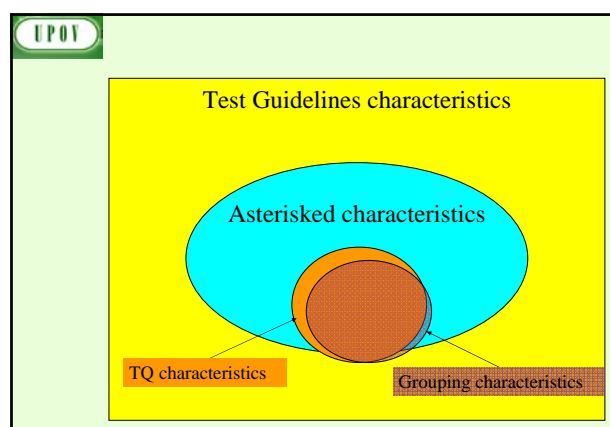
Standard Test Guidelines Characteristic

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 . 2.Must have been used to develop a variety description by at least one member of the Union . 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.

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

UPOV	
Grouping Characteristic	
Function	Criteria
<p>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:</p> <p>1. to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness, and/or</p> <p>2. to organize the growing trial so that similar varieties are grouped together</p>	<p>1.(a) Qualitative characteristics or (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.</p> <p>2. Must be useful for functions 1 and 2.</p> <p>3. Should be an asterisked characteristic and/or included in the Technical Questionnaire or application form.</p>

UPOV	
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 .



UPOV	
4. TEST GUIDELINES (document TGP/7)	
(e) Example varieties	

UPOV

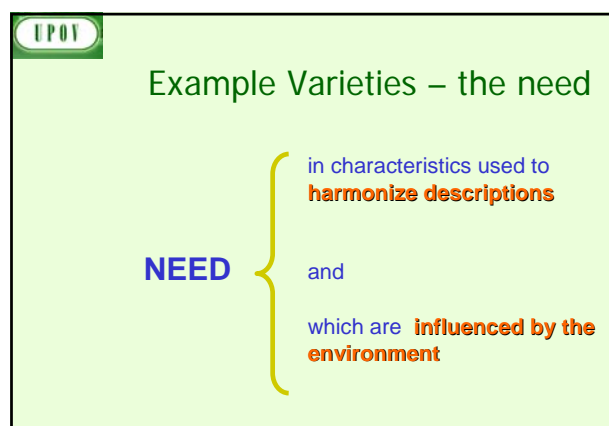
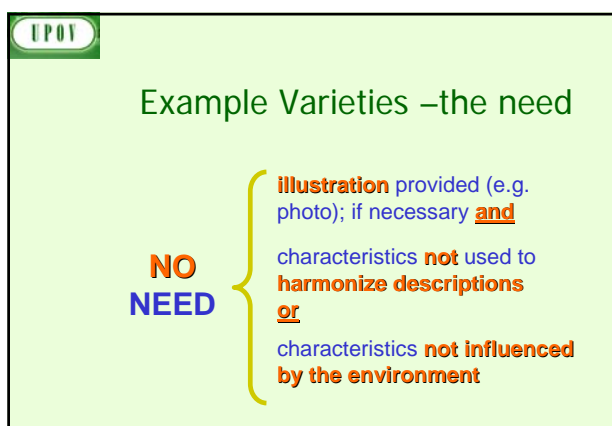
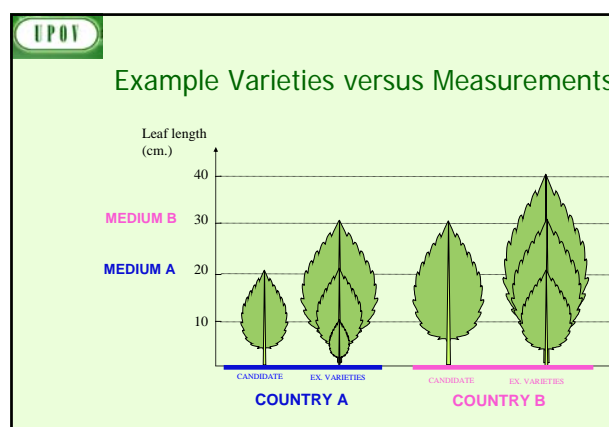
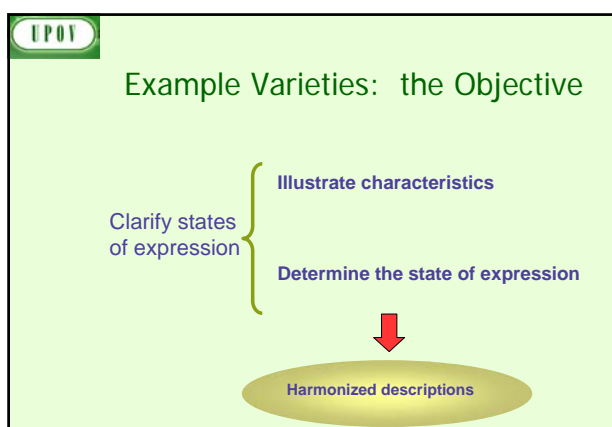
TG119
Lettuce/Laine/Salat/Leduga, 2004-03-31
-7-

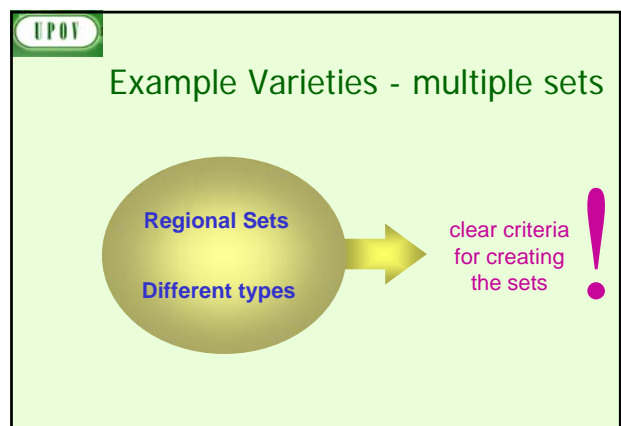
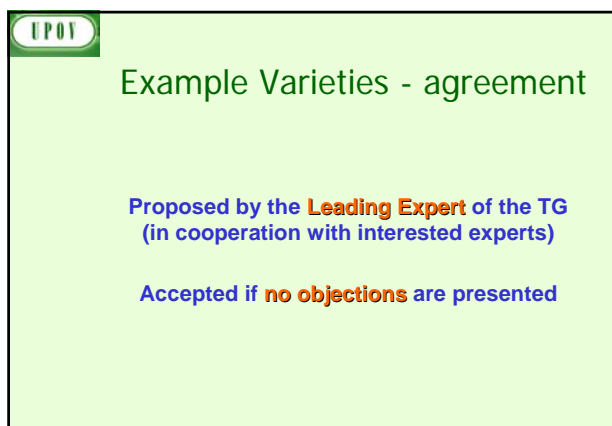
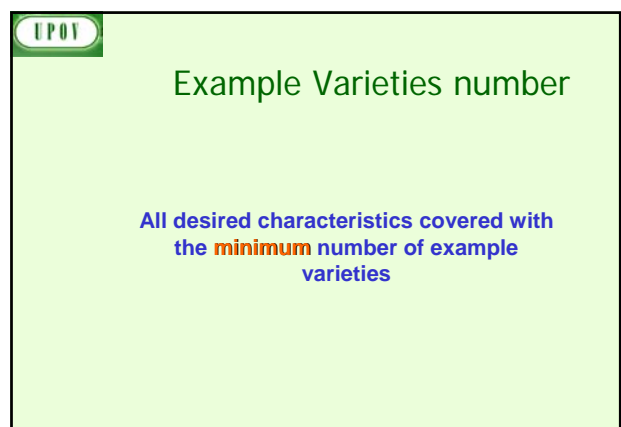
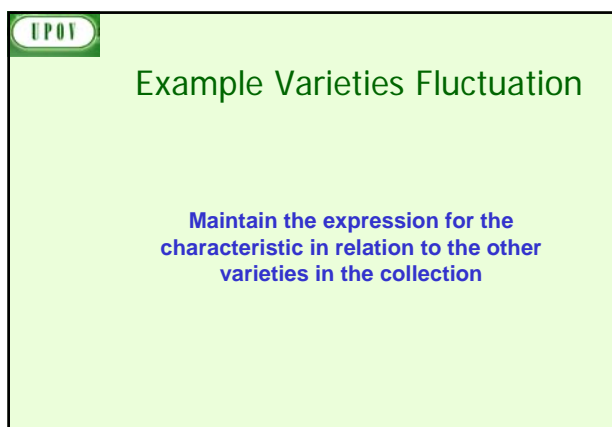
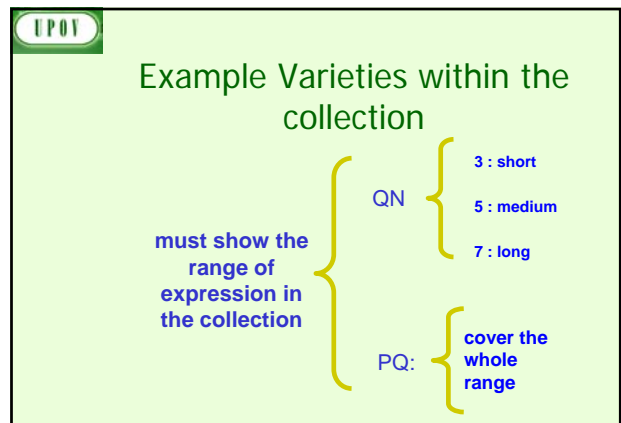
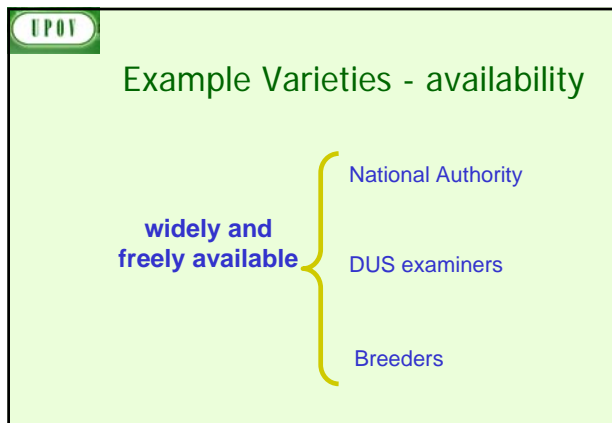
7. Table of Characteristics/ Tableau des caractères/ Merkmalstabelle/ Tabla de caracteres

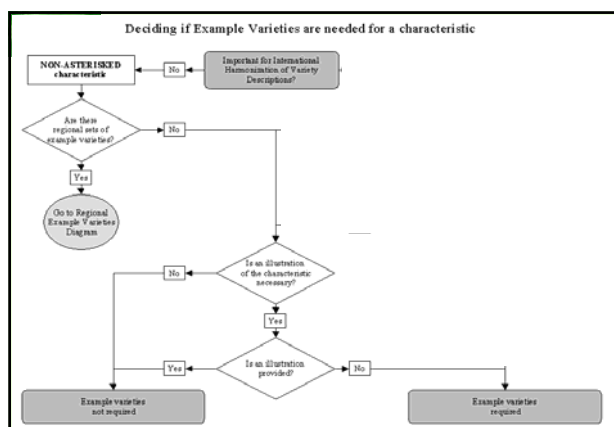
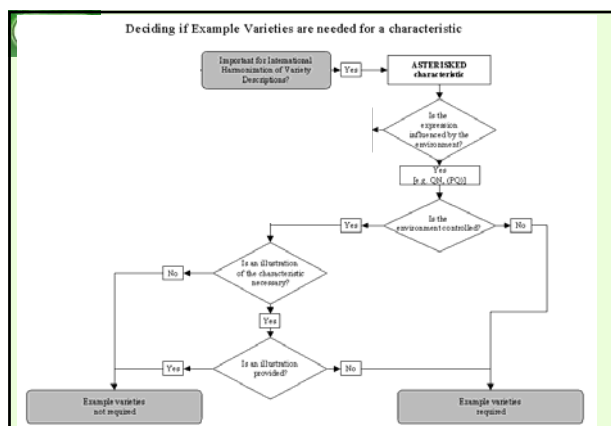
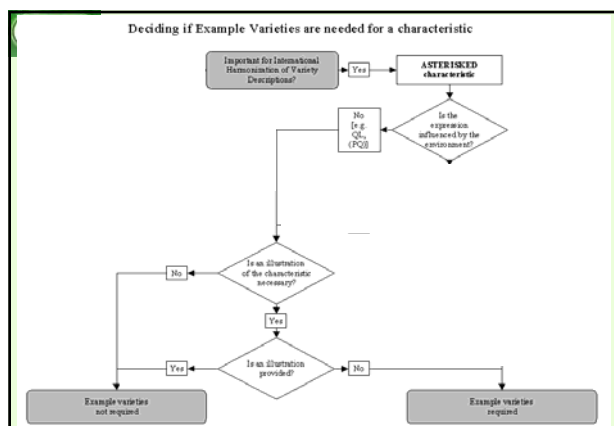
	English	français	Deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplos	Note/ Nota
1. (*)	Seed: color	Semence: couleur	Samen: Farbe	Semilla: color		
	white	blanche	weiß	blanco	Verpia	1
	yellow	jaune	gelb	amarillo	Durango	2
	black	noire	schwarz	negro	Kagraner Sommer	3
2. (*) (*)	Seedling: anthocyanin coloration	Plantelet: pigmentation anthocy unique	Keimflanze: Anthocy anfarbung	Plántula: pigmentación antocianica		
	absent	absente	fehland	ausente	Verpia	1
	present	présente	vorhanden	presente	Pist	9
3.	Seedling: size of cotyledon (fully developed)	Plantelet: taille du cotyledon (à complet développement)	Keimflanze: Größe des Keimblatts (voll entwickelt)	Plántula: tamaño del cotiledón (planoamente desarrollado)		
	small	petit	klein	pequeño	Romance	3
	medium	moyen	mittel	medio	Expresse	5
	large	grand	groß	grande	Verpia	7

UPOV					
TG/219/1 Perilla Perilla Perilla, 2004-03-31 - 10 -					
English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
14. VG: Leaf blade: intensity of purple color of lower side	Limbe: intensité de la couleur pourpre de la face inférieure	Blattplatte: Intensität der Purpurfarbe der Unterseite	Limbo: intensidad del color púrpura del envés		
QN (a) very light	très claire	sehr hell	muy claro		1
light	claire	hell	claro	Perline	3
medium	moyenne	mittel	medio		5
dark	foncée	dunkel	oscuro	Petro	7
very dark	très foncée	sehr dunkel	muy oscuro	Bora, Purple	9
15. VG: Leaf blade: profile	Limbe: profil	Blattplatte: Profil	Limbo: perfil		
QN (a) concave	concave	konkav	cóncavo	Peto	3
plane	plan	flach	plano	Pergo, Sacyopal	5
convex	convexe	konvex	convexo		7

UPOV					
Brachycome Blauer Glanzkissen, 2005-04-06 - 7 -					
English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
6. P: Plant growth type	Plante: type de croissance	Pflanze: Wuchsform	Planta: tipo de crecimiento		
QN (a) basal clusters	en amas à la base	basale Büschel	en racimos basales		1
basal	basement	baschig	arbores		2
7. P: Only varieties with leafy growth type: Plant: prostrate habit of stem	Seulement les variétés à type de croissance feuillue: Plante: port prostré de la tige	Nur Sorten mit blättrigem Wuchs: Pflanze: liegende Stellung der Triebe der Stängel	Solo variedades con tipo de crecimiento folioso: Planta: porte prostrada de los tallos		
QN (a) upright	dressée	aufrecht	erecto		1
semi upright	demi-dressée	halbaufrecht	semierecto		3
horizontal	horizontales	wagerecht	horizontal		5
8. P: Only varieties with leafy growth type: Plant: number of stems	Seulement les variétés à type de croissance feuillue: Plante: nombre de tiges	Nur Sorten mit blättrigem Wuchs: Pflanze: Anzahl Triebe	Solo variedades con tipo de crecimiento folioso: Planta: número de tallos		
QN (a) few	peu nombreuses	klarin	pocos		3
medium	moyennement nombreuses	mittel	medio		5
many	nombreuses	viel	alto		7
9. P: Plant height including leaves	Plante: hauteur, incluant les feuilles	Pflanze: Höhe, einschließlich Blätter	Planta: altura, incluyendo las hojas		
QN (a) short	basse	niedrig	corta	Mardi Gras	3
medium	moyenne	mittel	media	Brachycome	5
tall	élevée	hoch	larga	Happy Face Pink	7







UPOV

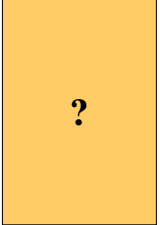
Exercise

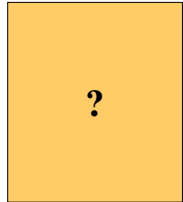
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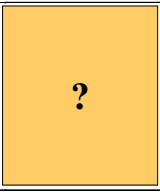
	English	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
4. (*) (+)	Plant: height including flowers		
QN	(a) short	?	3
	medium		5
	tall		7

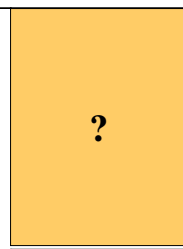
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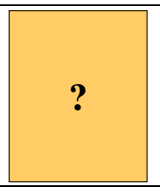
	English	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1. (*) (+)	Plant: growth type		
QL	(a) basal clusters	?	1
	bushy		2

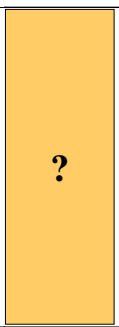
UPOV			
English		Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
2. (+)	Only varieties with bushy growth type: Plant: predominant attitude of stems		
QN	(a) upright		1
	semi upright		3
	horizontal		5

UPOV			
English		Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
5. (*) (+)	Plant: width including flowers		
QN	(a) narrow		3
	medium		5
	broad		7

UPOV			
English		Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
9. (*) (+)	Leaf: margins		
QL	(a) entire		1
	(b) divided		2

UPOV			
English		Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
7. (*) (+)	Leaf: length		
QN	(a) short		3
	(b) medium		5
	long		7
	very long		9

UPOV			
English		Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
20. (+)	Flower: bud color		
PQ	(c) RHS Colour Chart (indicate reference number)		

UPOV			
English		Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
10. (*) (+)	Only varieties with entire leaf margins: Leaf: shape		
PQ	(a) ovate		1
	(b) linear		2
	oblong		3
	elliptic		4
	circular		5
	oblanceolate		6
	obovate		7
	spatulate		8
	obtriangular		9

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4. TEST GUIDELINES (document TGP/7)

(f) The process for developing UPOV Test Guidelines

UPOV

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)

UPOV

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**

UPOV

EXAMPLE (New Test Guidelines)

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

Technical Working Party: **TWX**

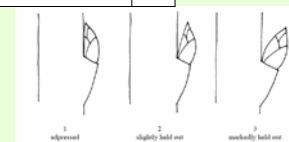
TWX (2005):	Alpha (proj. 1)
TWX (2006):	Alpha (proj. 2)
TWX (2007):	Alpha (proj. 3)
Enlarged Editorial Committee (2008):	Alpha (proj. 4)
Technical Committee (2008):	Alpha (proj. 5)
Final adopted document (2008):	TG/500/1

Exercise:
is there a problem?

1.	Branch: length	
	short (<15cm)	1
QN	medium (16-45cm)	2
	long (>45cm)	3

2.	Flower: petaloid stamens	
QN	absent	1
	few (>0 - 20%)	2
	medium (>20-95%)	3
	many (>95%)	4

3. (+)	One-year-old shoot: position of vegetative bud in relation to shoot	
PQ	adpressed	1
	slightly held out	2
	markedly held out	3



4.	Leaf blade: texture	
PQ	soft	1
	coriaceous	2

5.	Fruit: conspicuousness of lenticels	
QL	inconspicuous	1
	conspicuous	2

UPOV			
6.	Scape: shape of top		
QL	acute		1
	obtuse		2

UPOV			
7.	Leaf: shape		
(*)			
QL	elliptic	Esmamerica	1
	ovate	Barfast	2

UPOV			
8.	Leaf blade: undulation of margin		
QN	absent or very weak		1
	medium		2
	strong		3

UPOV			
9.	VG	Stem: position of long side branches	
(*)			
PQ	mainly lower third		1
	mainly middle third		2
	along whole stem		3

5. THE UPOV WEBSITE

UPOV Website
<http://www.upov.int>
 (e-mail: upov.mail@upov.int)

