

TECHNICAL WORKING PARTY FOR VEGETABLES

Forty-Fourth Session
Veliko Tarnovo, Bulgaria, July 5 to 9, 2010

PREPARATORY WORKSHOP

July 4, 2010

PROGRAM

1. Introduction to UPOV
2. Overview of the General Introduction
(document TG/1/3 and TGP documents)
3. Guidance on drafting Test Guidelines (document TGP/7)
 - (a) Selection of characteristics
 - (b) Guidance on drafting characteristics
 - (i) *Types of expression (QL, QN, PQ), notes and distinctness*
 - (ii) *Method of observation (V/M; G/S)*
 - (iii) *Asterisked, grouping and TQ characteristics*
 - (iv) *Example varieties*
 - (c) The process for developing UPOV Test Guidelines
4. UPOV databases
5. The UPOV website
6. Role of the Technical Working Parties
7. Agenda for the TWV Session
8. Feedback

1. INTRODUCTION TO UPOV

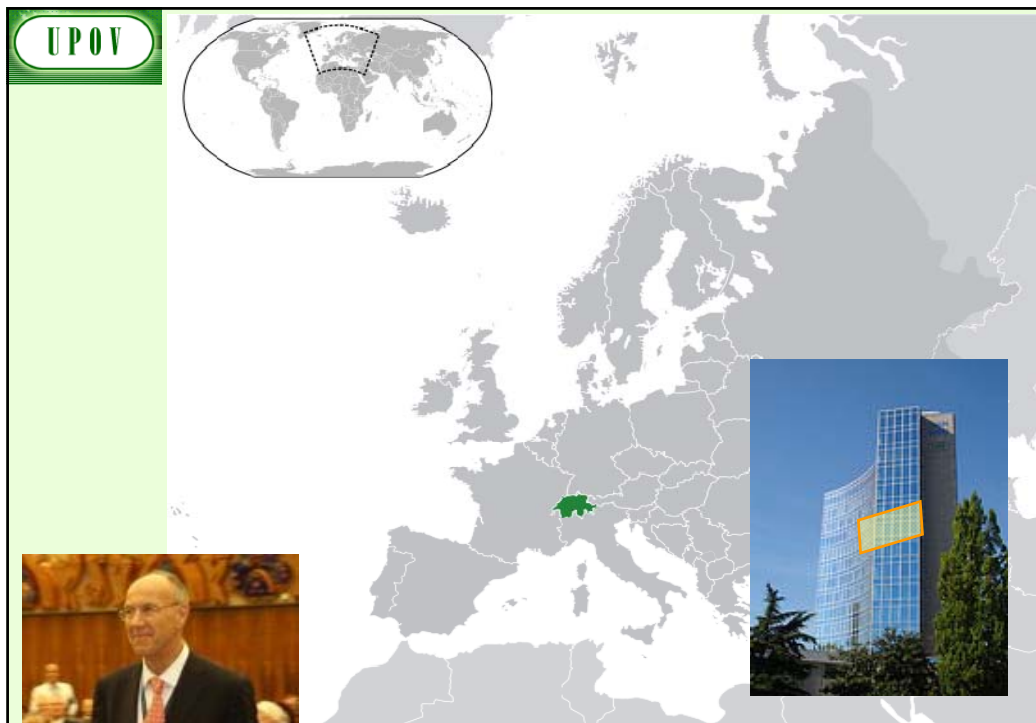
UPOV

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 **o**btentions **v**égétales



UPOV

2. OVERVIEW OF THE GENERAL INTRODUCTION

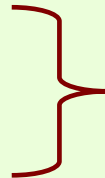
(DOCUMENT TG/1/3 AND TGP DOCUMENTS)

GUIDANCE FOR DUS EXAMINATION

THE CONDITIONS FOR GRANTING A BREEDER'S RIGHT

Criteria to be satisfied

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



"DUS"

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 provides guidance by:

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

= version 3



"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

3. GUIDANCE ON DRAFTING TEST GUIDELINES

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**

UPOV

TG/250/1
ORIGINAL: English
DATE: 2009-04-01

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

YAM
UPOV Code:
DIOSC_ALA; DIOSC_BAT; DIOSC_JAP
Dioscorea alata L.; *Dioscorea polystachya* Turcz.;
Dioscorea japonica Thunb.

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

Alternative Names:^{*}

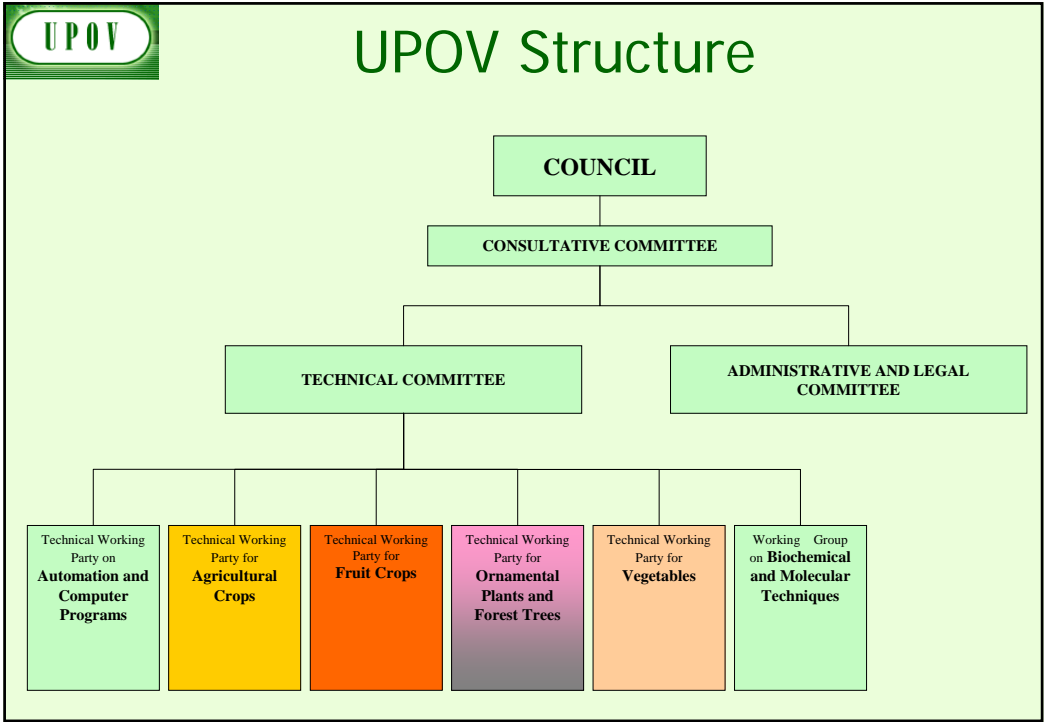
Botanical name	English	French	German	Spanish
<i>Dioscorea alata</i> L.	Greater yam, Guyana arrowroot, Taro-cassava yam, White yam, White yam, Winged yam, Yam	Grande igname, Igname blanc, Igname de Chine	Größtegelber Yam, Yamswurzel	Ñame blanco, Ñame de agua, Tubosa
<i>Dioscorea polystachya</i> Turcz.	Chinese yam, Chinese-potato, Cassamirovitae	Ignamo	Chinesische Yamswurzel	
<i>Dioscorea batatas</i> Decne.				
<i>Dioscorea japonica</i> Thunb.	Japanese yam	Ignamo japonaise		

The purpose of these guidelines (“Test Guidelines”) is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with 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.]



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

	TG [xxx] ORIGINAL: [xxx] DATE: [xxx]	E		
INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS GENEVA				
DRAFT Please select: "View" then "Comments" from the Word menu to see all notes				
<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;"> (MAIN COMMON NAME) (types of) botanical name (UPOV Code) (SN1) - Botanical name </td> </tr> </table>			(MAIN COMMON NAME) (types of) botanical name (UPOV Code) (SN1) - Botanical name	
(MAIN COMMON NAME) (types of) botanical name (UPOV Code) (SN1) - Botanical name				
GUIDELINES FOR THE CONDUCT OF TESTS FOR DISTINCTNESS, UNIFORMITY AND STABILITY prepared by [an expert] / [experts] from [drafting country(ies) / organization(s)] to be considered by the Technical Working Party for [xxx] at its [xxx] session to be held in [xxx] from [xxx]				
Alternative Names:				
Botanical name	English	French	German	Spanish
[xxxxxxxxxxxx]	[xxxxxxxxxxxx]	[xxxxxxxxxxxx]	[xxxxxxxxxxxx]	[xxxxxxxxxxxx]
The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TB/1/2), and its associated TGP documents, into detailed practical guidance for the humanized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of humanized variety descriptions.				
<small>These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. (Please do not attempt to correct the UPOV Code, which can be found on the UPOV Website (www.upov.int) for the latest information.)</small>				

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

3. TEST GUIDELINES

(a) Selection of characteristics

“CHARACTERISTICS”

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

Selection of Characteristics

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

- (a) **results from a given genotype** or combination of genotypes;
- (b) is sufficiently **consistent and repeatable** in a **particular environment**;
- (c) exhibits sufficient **variation between varieties** to be able to establish distinctness;
- (d) is capable of **precise definition and recognition**;
- (e) allows **uniformity requirements** to be fulfilled;
- (f) allows **stability requirements** to be fulfilled, meaning that it produces consistent and repeatable results after repeated propagation or, where appropriate, at the end of each cycle of propagation.

Selection of Characteristics

- Yield ???
 - Straw strength ???
- Etc.

Selection of Characteristics

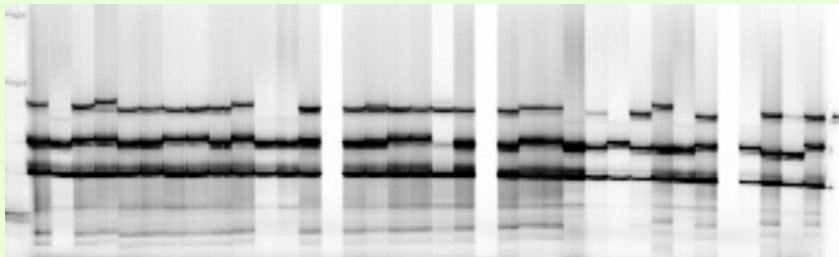
Criteria	Fruit: color	Leaf: shape	Yield
(a) results from a given genotype or combination of genotypes	Yes	Yes	
(b) sufficiently consistent and repeatable in a particular environment	Yes	Yes	
(c) exhibits sufficient variation between varieties to be able to establish distinctness	Yes	Yes	
(d) is capable 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	
(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	

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



Molecular Techniques?



3. TEST GUIDELINES

(b) Guidance on drafting characteristics

*(i) Types of expression (QL, QN, PQ),
notes and distinctness*

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

Types of Expression

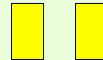
QL: QUAL**L**ITATIVE

QN: QUAN**N**TITATIVE

PQ: PSEUDO-QUALITATIVE

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

Char. No.	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*) (+)	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	Sunnem 03	3
	semi-trailing	semi-étalé	halbhängend	semirastrero	Inupsaf	4
	trailing	coureux	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	Inuppink	7



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.**

Qualitative characteristic

Clematis: Leaf: type



1
simple



2
ternate



3
biternate



4
trternate



NON-Qualitative characteristic

Anthocyanin coloration: absent / present

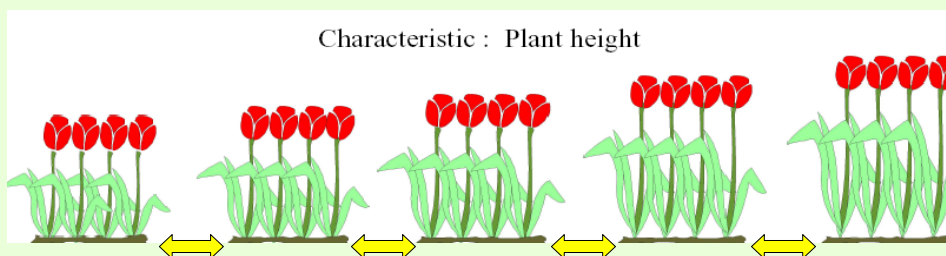
	Variety A	Variety B	Variety C
Environment A			
Environment B			

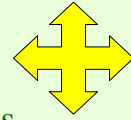
QUANTITATIVE Characteristics



“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 Characteristic

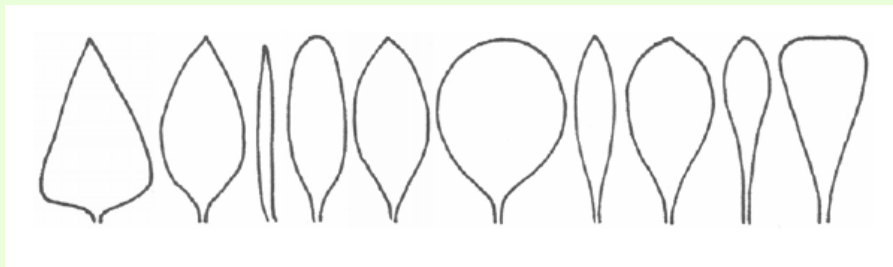


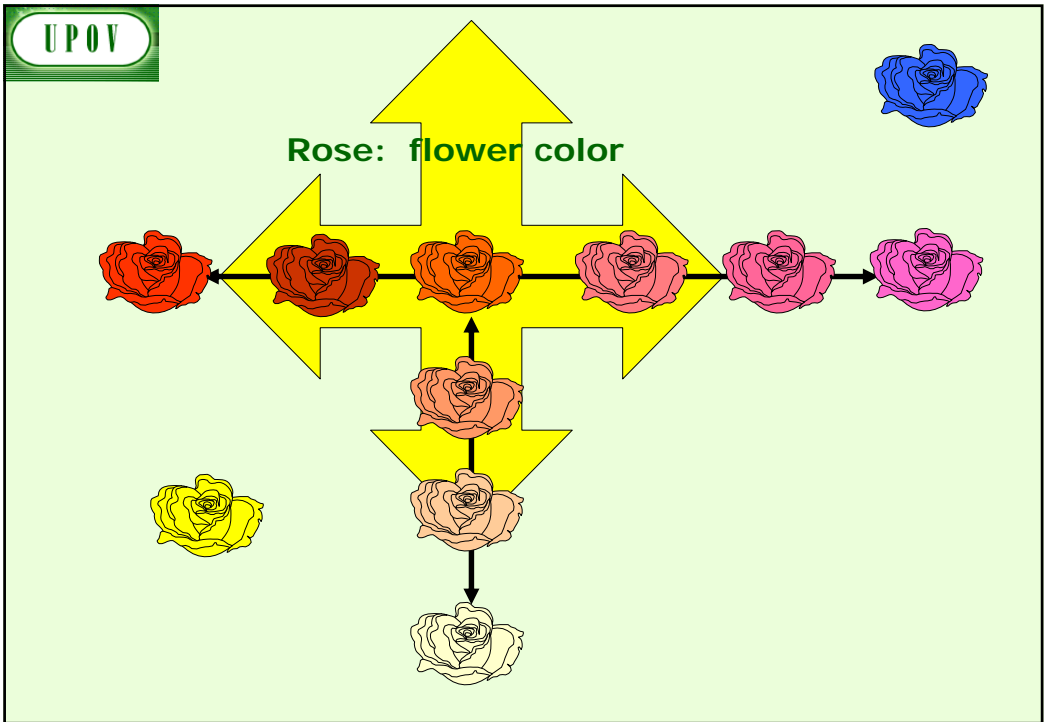
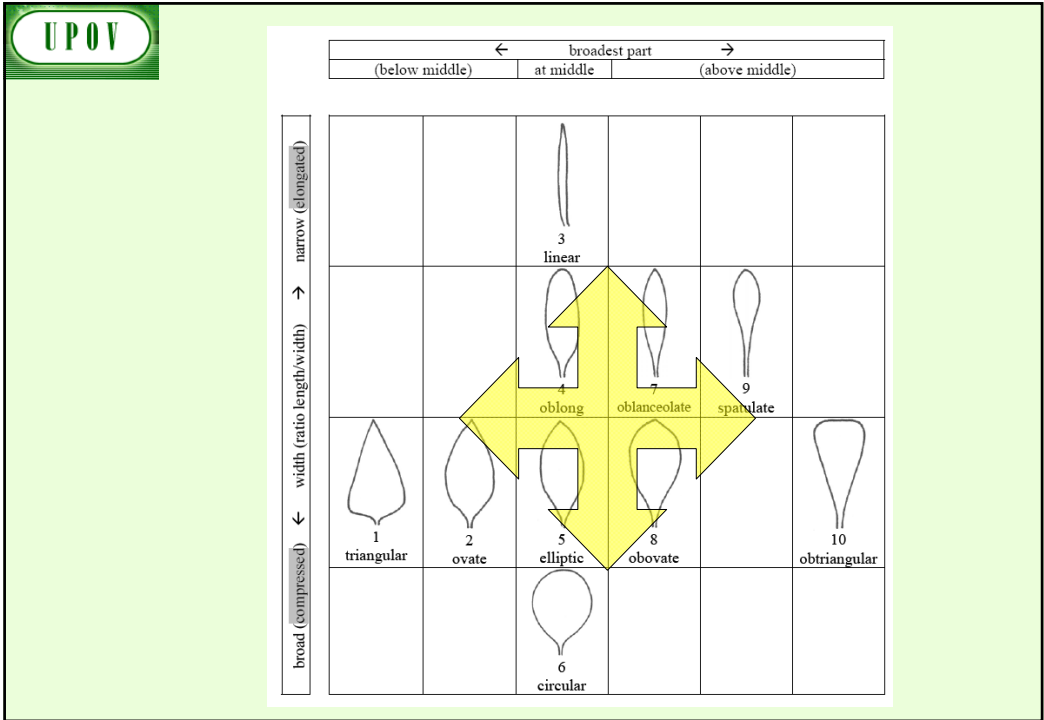


PSEUDO-QUALITATIVE Characteristics

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





STATES / NOTES for QL, QN ,PQ

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		



Qualitative Characteristics (special cases)

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



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



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	-



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 Stem: attitude
1	erect
3	semi-erect
5	prostrate

Condensed range

Example 1	
1	e.g. absent or very weak <i>(absent or very weakly expressed)</i>
2	weak <i>(weakly expressed)</i>
3	strong <i>(strongly expressed)</i>

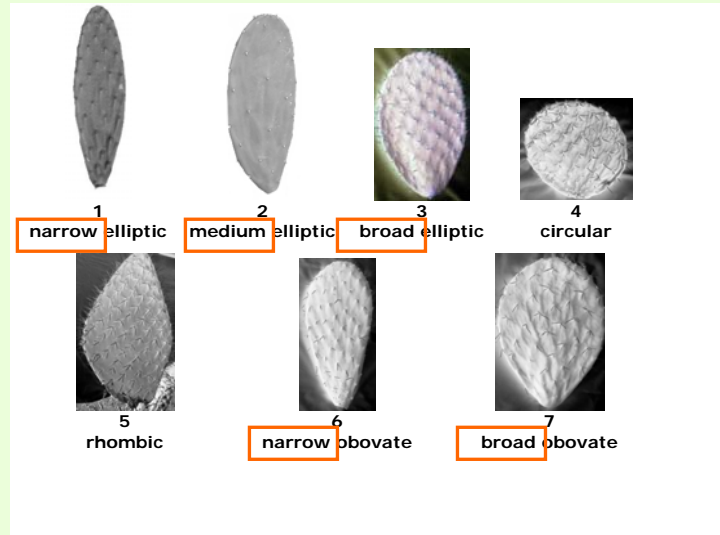
Example 2	
1	e.g. absent or weak <i>(absent or weakly expressed)</i>
2	moderate (or medium) <i>(moderately expressed)</i>
3	strong <i>(strongly expressed)</i>

Pseudo-qualitative Characteristics

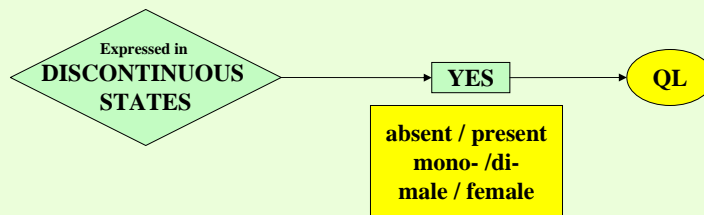
(typical examples)

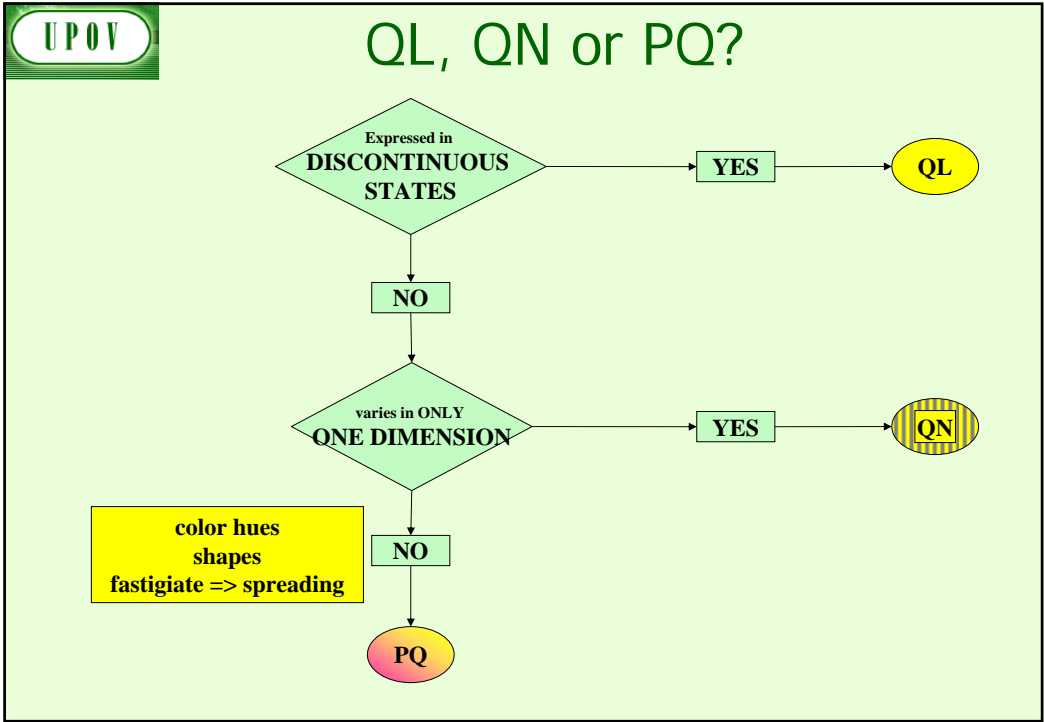
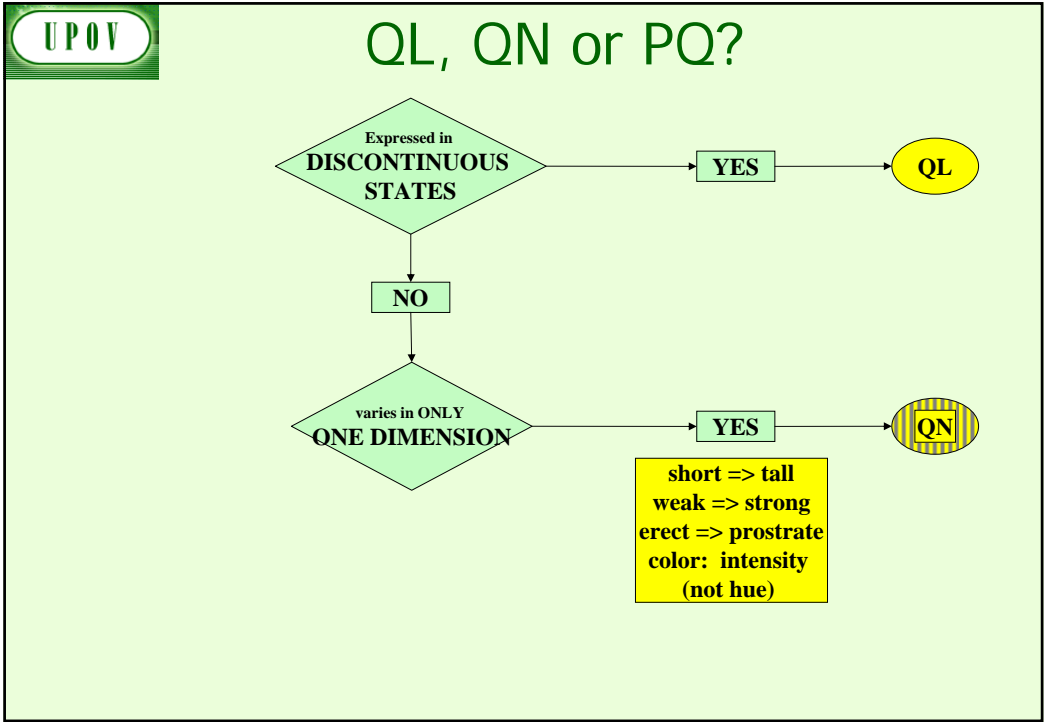
24. Flower: color of the center (+)	Fleur: couleur du centre	Farbe der Mitte	Flor: color del centro	
PQ green	vert	grün	verde	1
yellow	jaune	gelb	amarillo	2
orange	orange	orange	naranja	3
pink	rose	rosa	rosa	4
red	rouge	rot	rojo	5
purple	pourpre	purpurn	púrpura	6

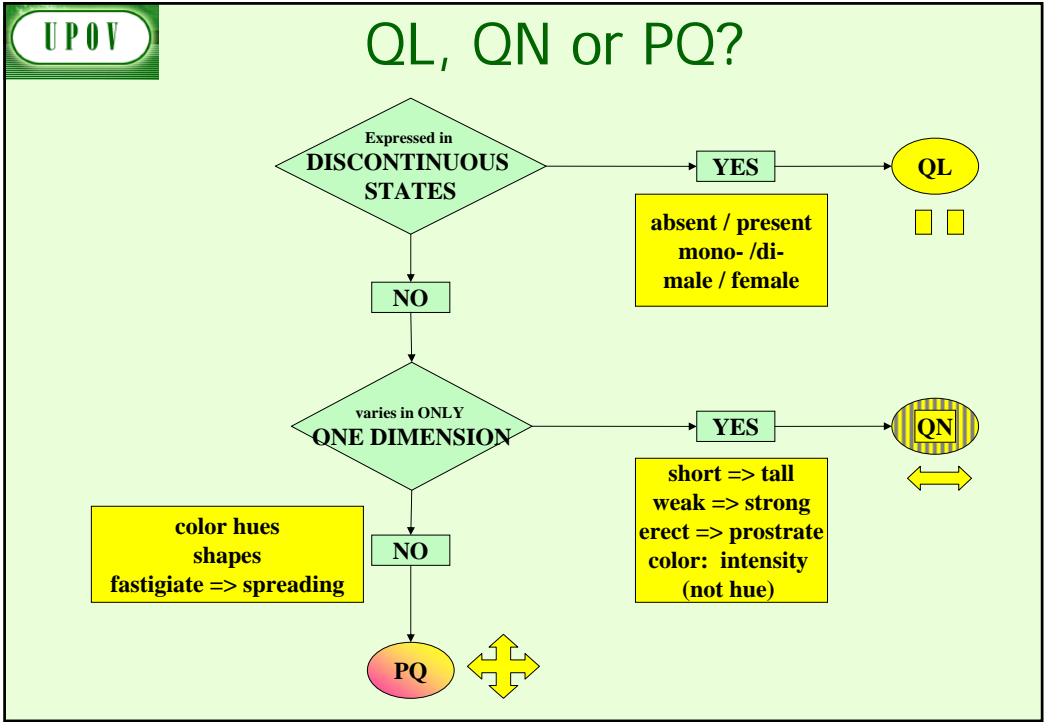
Opuntia: Shape of Cladode



QL, QN or PQ?







UPOV

EXERCISE

What type of Expression?

QL: Qualitative

QN: Quantitative

PQ: Pseudo-qualitative

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

2. Leaf sheath: anthocyanin coloration

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

3. Plant: rhizomes

absent	1
present	9

4. Petal: color

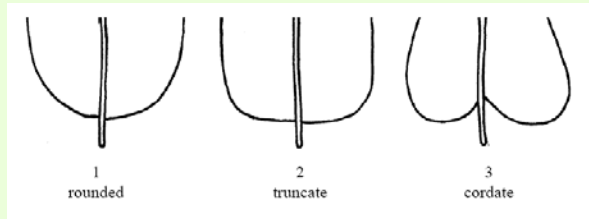
white	1
yellow	2
orange	3
red	4
pink	5
purple	6

**5. Leaf blade: intensity
of green color of
upper side**

light	3
medium	5
dark	7

6. Leaf blade: shape of base

rounded	1
truncate	2
cordate	3



7. Petal: color

RHS Colour Chart
(indicate reference
number)

8. Leaf blade: profile in cross section

straight or weakly concave	1
moderately concave	2
strongly concave	3

NOTES and DISTINCTNESS
according to
TYPE OF EXPRESSION
(QL, PQ, QN)

Types of Expression

QL: QUALITATIVE

QN: QUANTITATIVE

PQ: PSEUDO-QUALITATIVE

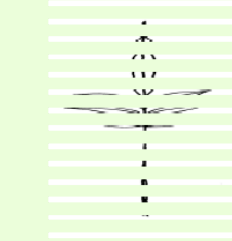
QUALITATIVE Characteristics

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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.**

Qualitative characteristic

Clematis: Leaf: type

1
simple2
ternate3
biternate4
triternateQualitative 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)).

Types of Expression

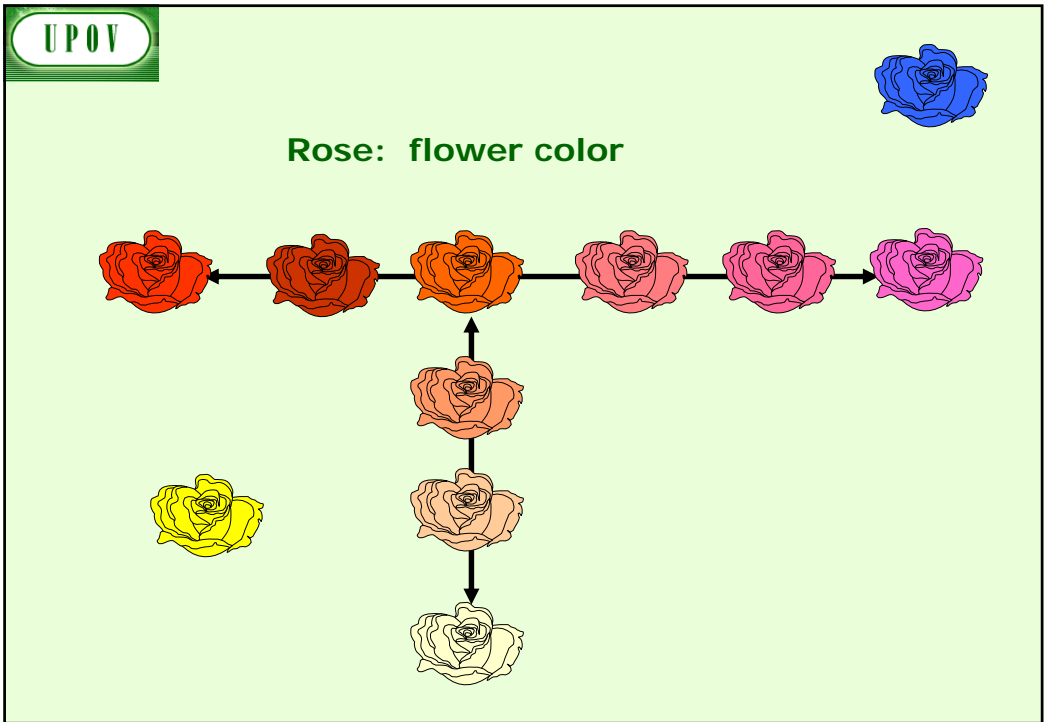
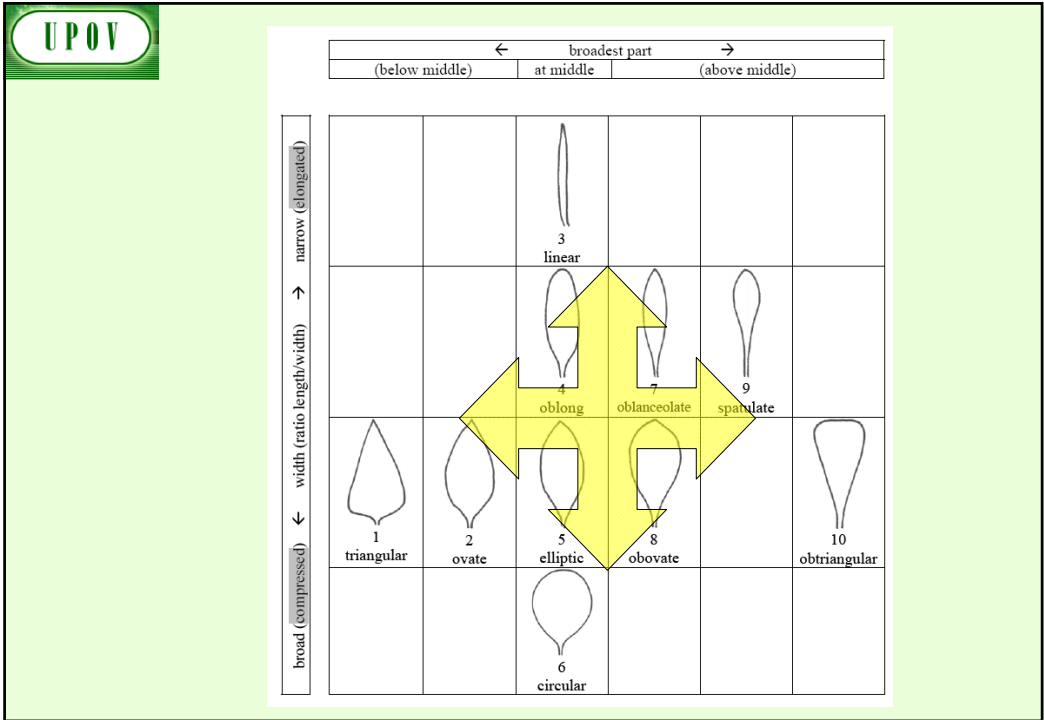
QL: QUALITATIVE

QN: QUANTITATIVE

PQ: PSEUDO-QUALITATIVE

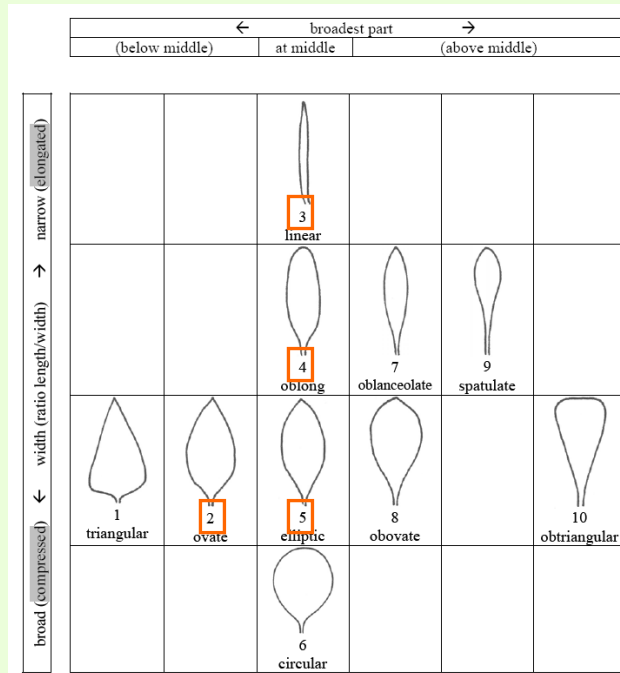
PSEUDO-QUALITATIVE Characteristics

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.



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.



Types of Expression

QL: QUALITATIVE

QN: QUANTITATIVE

PQ: PSEUDO-QUALITATIVE

QUANTITATIVE Characteristics

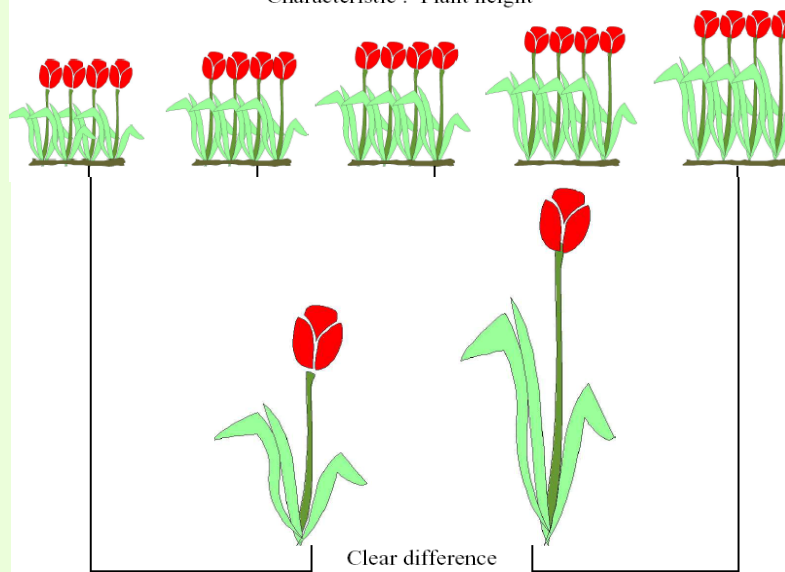
“Quantitative characteristics” are those where the expression covers the full range of variation from one extreme to the other. The **expression can be recorded on a one-dimensional, continuous or discrete, linear scale**. The range of expression is divided into a number of states for the purpose of 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

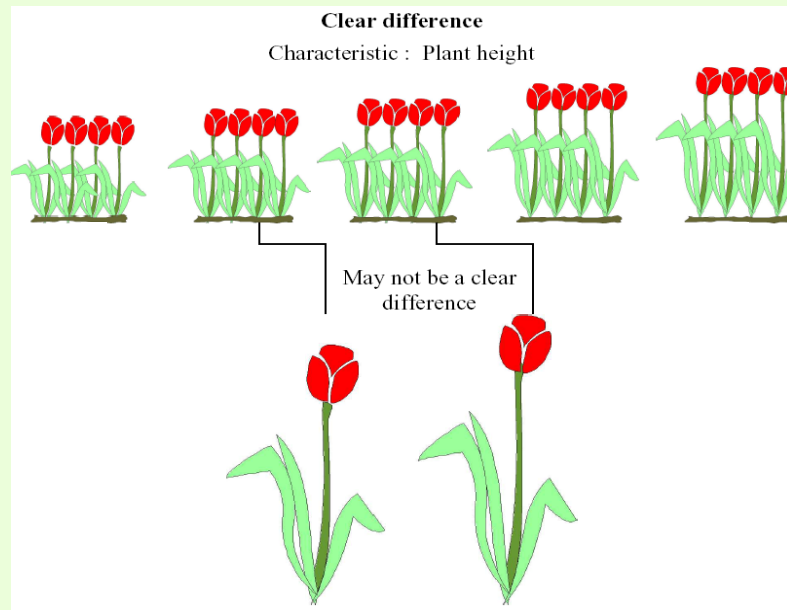
Quantitative characteristics are considered for distinctness according to the method of observation and the features of propagation of the variety concerned...

Quantitative Characteristic

Clear difference
Characteristic : Plant height



Quantitative Characteristic



NOTES

versus

SIDE-BY-SIDE COMPARISON

(Quantitative characteristics)

5.2 Approaches for assessing distinctness

5.2.1 Introduction

5.2.1.1 Approaches for assessment of distinctness based on the growing trial can be summarized as follows:

- (a) **Side-by-side visual comparison** in the growing trial
(see Section 5.2.2);
- (b) **Assessment by Notes / single variety records ("Notes")**: the assessment of distinctness is based on the recorded state of expression of the characteristics of the variety
(see Section 5.2.3);
- (c) Statistical analysis of growing trial data:

Quantitative Characteristics: **distinctness**

The General Introduction explains that, in the case of visually observed quantitative characteristics:

"5.5.2.2.2 **A direct comparison between two similar varieties is always recommended**, since direct pairwise comparisons are the most reliable. In each comparison, **a difference between two varieties is acceptable as soon as it can be assessed visually and could be measured, although such measurement might be impractical or require unreasonable effort.**"




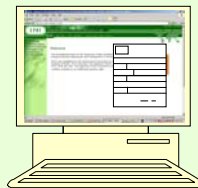

TGP/9/1 “Examining Distinctness”

5.2.3.1.2 Where the requirements for distinctness assessment by Notes / single variety records are met it would usually also be possible to make a side-by-side visual comparison. However, **in the case of assessment by Notes / single variety records, such proximity is not required, which is a particular advantage where the growing trial contains a large number of varieties and where there are limited possibilities for ensuring that all similar varieties are grouped together in the growing trial. ...**

On the other hand, because the varieties are not the subject of a side-by-side visual comparison, the **difference required between varieties as a basis for distinctness is, with the exception of qualitative characteristics (see below), somewhat greater.**



Variety	A	B							



...and comparison with descriptions in databases

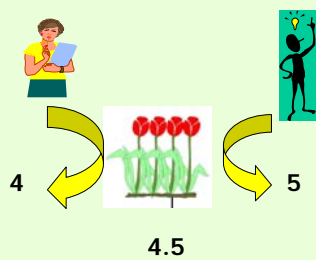
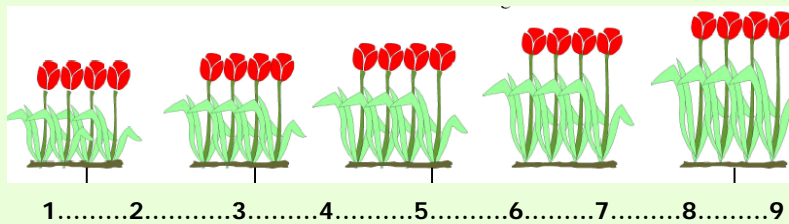
Quantitative Characteristics: distinctness

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

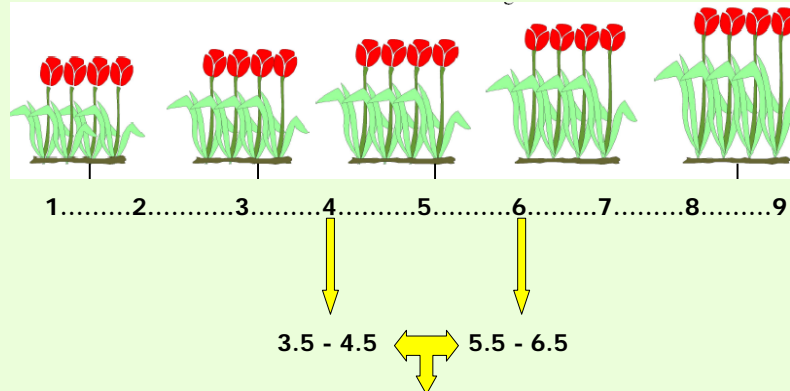
Test Guidelines (TGP/7 proposed revised text)

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

WHY?



"Two Note" rule...



...means at least ONE note difference!

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**:

Quantitative Characteristics: distinctness

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

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6. (a) Leaf blade: length (*)						
QN	short	courte	kurz	corto	Coditer, Strawberry Sundae	3
	medium	moyenne	mittel	medio	Codusre	5
	long	longue	lang	largo	Balwhislapi, Balwhiswhit	7

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


Quantitative Characteristics: distinctness

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

	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
5. Stem: anthocyanin coloration below inflorescence						
QN	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	Heccharm	1
	medium	moyenne	mittel	media	Hecrace	2
	strong	forte	stark	fuerte		3

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

UPOV Process levels other than Notes...



Transformation of Observations and Measurements into Notes for Distinctness and for Variety Descriptions

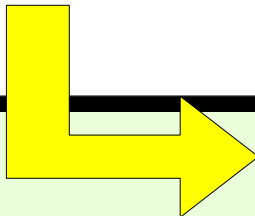
Beate Rücker
Federal Variety Office, Hannover, Germany

Seminar on DUS Testing, Geneva, March 18-20, 2010

UPOV Documents

First restricted area

CAJ	Administrative and Legal Committee
CAJ-AG	Administrative and Legal Committee Advisory Group
TC	Technical Committee
TC-EDC	Enlarged Editorial Committee
TWA	Technical Working Party for Agricultural Crops
TWC	Technical Working Party on Automation and Computer Programs
TWF	Technical Working Party for Fruit Crops
TWO	Technical Working Party for Ornamental Plants and Forest Trees
TVOV	Technical Working Party for Vegetables
BMT	Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular
BMT-IG	Ad hoc Subgroup of Technical and Legal Experts of Biochemical and Molecular Techniques
BMT-Crop-Subgroups	Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular – Crop Subgroups
WGL-IPBR	Ad hoc Working Group to Study the Impact of Plant Breeders' Rights
WGL-PVD	Ad hoc Working Group on the Publication of Variety Descriptions
WGL-VD	Ad hoc Working Group on Variety Denominations
Seminar on DUS Testline	UPOV, Geneva, March 18 to 20, 2010



UPOV

3. TEST GUIDELINES

(b) Guidance on drafting characteristics

(ii) Method of observation (V/M; G/S)

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**.

TGP/9/1 “Examining Distinctness”

Method of propagation of the variety	Type of expression of characteristic		
	QL (QUAL itative)	PQ (PSEUDO qualitative)	QN (QUANT itative)
Vegetatively propagated, self-pollinated	Notes (VG)	Notes (VG) Side-by-side (VG)	Notes (VG/MG/MS) Side-by-side (VG) Statistics (MG/MS)
Cross-pollinated	Notes (VG) Statistics (VS*)	Notes (VG) Side-by-side (VG) Statistics (VS*)	Statistics ([MG]/MS/VS) Side-by-side (VG) Notes (VG/MG/MS)
Hybrids	Notes (VG) Statistics (VS*)	Notes (VG) Side-by-side (VG) Statistics (VS*)	**

TGP/9/1 "Examining Distinctness"

V= Visual observation

Method of propagation of the variety	Type of expression of characteristic		
	QL (QUAL itative)	PQ (PSEUDO qualitative)	QN (QUANT itative)
Vegetatively propagated, Self-pollinated	Notes (VG)	Notes (VG) Side-by-side (VG)	Notes (VG/MG/MS) Side-by-side (VG) Statistics (MG/MS)
Cross-pollinated	Notes (VG) Statistics (VS*)	Notes (VG) Side-by-side (VG) Statistics (VS*)	Statistics ([MG]/MS/VS) Side-by-side (VG) Notes (VG/MG/MS)
Hybrids	Notes (VG) Statistics (VS*)	Notes (VG) Side-by-side (VG) Statistics (VS*)	**

TGP/9/1 "Examining Distinctness"

**V= Visual observation or
M= Measurement**

Method of propagation of the variety	Type of expression of characteristic		
	QL (QUAL itative)	PQ (PSEUDO qualitative)	QN (QUANT itative)
Vegetatively propagated, self-pollinated	Notes (VG)	Notes (VG) Side-by-side (VG)	Notes (VG/MG/MS) Side-by-side (VG) Statistics (MG/MS)
Cross-pollinated	Notes (VG) Statistics (VS*)	Notes (VG) Side-by-side (VG) Statistics (VS*)	Statistics ([MG]/MS/VS) Side-by-side (VG) Notes (VG/MG/MS)
Hybrids	Notes (VG) Statistics (VS*)	Notes (VG) Side-by-side (VG) Statistics (VS*)	**

(for the purposes of distinctness)

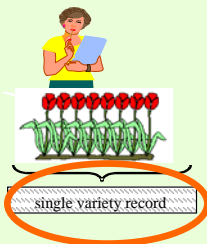
G: **single record** for a variety, or a **GROUP of plants** or parts of plants;

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.

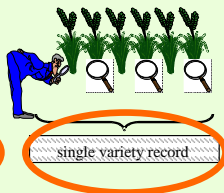
S: **records** for a number of **SINGLE**, individual **plants** or parts of plants ...

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

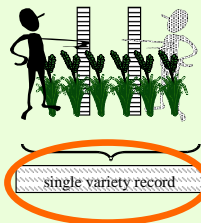
Section 4.3.2.3
Example (VG): Flower: type
(tulip: vegetatively propagated)



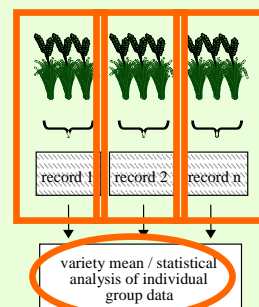
Section 4.3.2.3
Example (VG): Lowest leaf:
hairiness of leaf sheaths
(barley: self-pollinated)



Section 4.3.2.3
Example (MG): Plant: height
(wheat: self-pollinated)

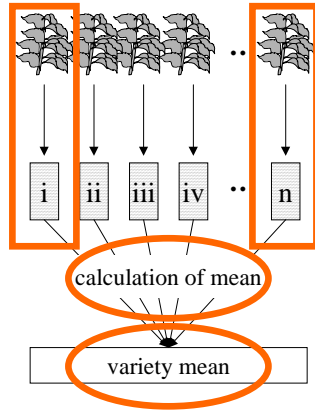


Section 4.3.2.4
Example: (statistical analysis)

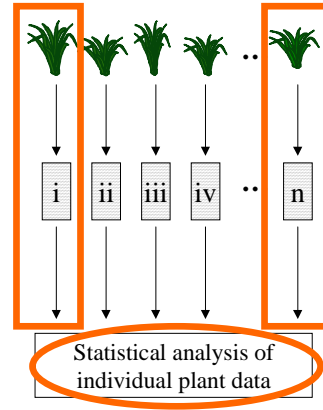


Records for a number of single, individual plants or parts of plants (S)

Section 4.3.3.1
 Example (MS): Leaflet: length
 (pea: self-pollinated)



Section 4.3.3.2
 Example (MS): Plant: natural height
 Example (VS): Plant: growth habit
 (ryegrass: cross-pollinated)



EXERCISE

3. TEST GUIDELINES

(b) Guidance on drafting characteristics

(iii) Asterisked, grouping and TQ 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.	<p>1.Must satisfy the criteria for use of any characteristic for DUS as set out in Chapter 4, section 4.2.</p> <p>2.Must have been used to develop a variety description by at least one member of the Union.</p> <p>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.</p>

Asterisked Characteristic

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

Char. No.	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten 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	Sunnem 03	3
	semi-trailing	semi-étalé	halbhängend	semirrastrero	Inupsaf	4
	trailing	coureux	hängend	rastrero	Organza	5

Asterisked Characteristic

Function	Criteria
<p>1.Characteristics that are important for the international harmonization of variety descriptions.</p>	<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>

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

Apple: Fruit color



Apple: Fruit color



10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)
<p>TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights</p>		
1. Subject of the Technical Questionnaire		
1.1 Botanical name	<input type="text" value="Malus domestica Borkh."/>	
1.2 Common name	<input type="text" value="Apple"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
Telephone No.	<input type="text"/>	

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines: please mark the note which best corresponds).

Characteristics	Example Varieties	Note
-----------------	-------------------	------

5.5 Fruit: hue of over color – with bloom removed
(37)

orange red	Cox's Orange Pippin, Egremont Russet	1[]
pink red	Cripps Pink, Delorgue	2[]
red	Akane, Galaxy, Red Elstar, Regal Prince	3[]
purple red	Red Jonaprince, Spartan	4[]
brown red	Fiesta, Joburn, Lord Burghley	5[]

5.6 Fruit: pattern of over color
(39)

only solid flush	Red Jonaprince, Richared Delicious	1[]
solid flush with weakly defined stripes	Galaxy	2[]
solid flush with strongly defined stripes	Jonagored	3[]
weakly defined flush with strongly defined stripes	Gravensteiner	4[]
only stripes (no flush)	Helios	5[]
flushed and mottled	Elstar	6[]
flushed, striped and mottled	Jonagold	7[]

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> <ol style="list-style-type: none"> to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness, and/or to organize the growing trial so that similar varieties are grouped together 	<ol style="list-style-type: none"> (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. Must be useful for functions 1 and 2. Should be an asterisked characteristic and/or included in the Technical Questionnaire or application form.

Relationship between functions

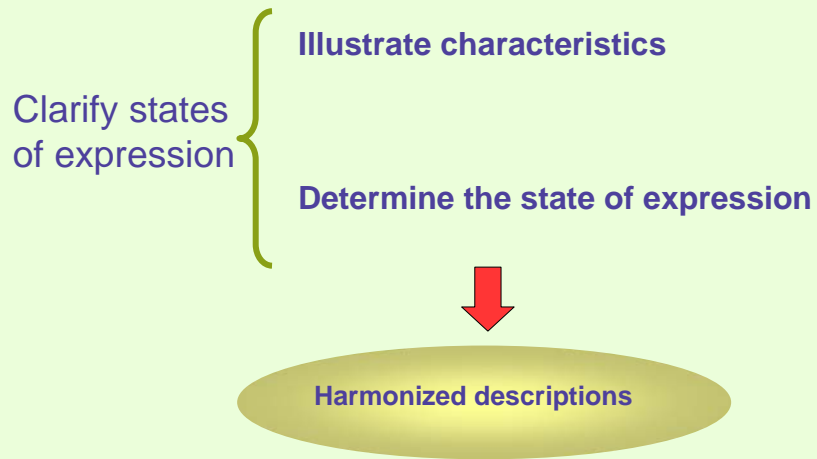
- (a) **GROUPING CHARACTERISTICS** selected from the Table of Characteristics should, in general, **receive an asterisk** in the Table of Characteristics and be **included in the Technical Questionnaire**.
- (b) **TQ CHARACTERISTICS** selected from the Table of Characteristics should, in general, **receive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

3. TEST GUIDELINES

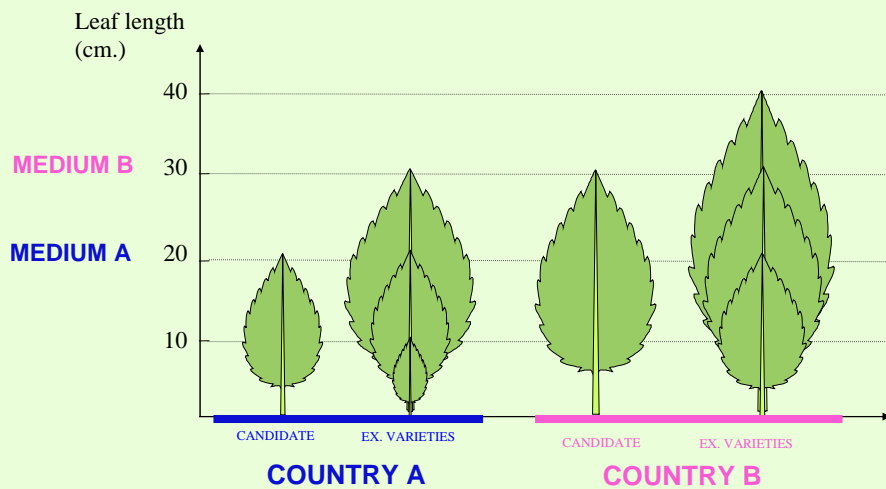
(b) Guidance on drafting characteristics

(iv) Example varieties

Example Varieties: the Objective



Example Varieties versus Measurements



Example Varieties –the need

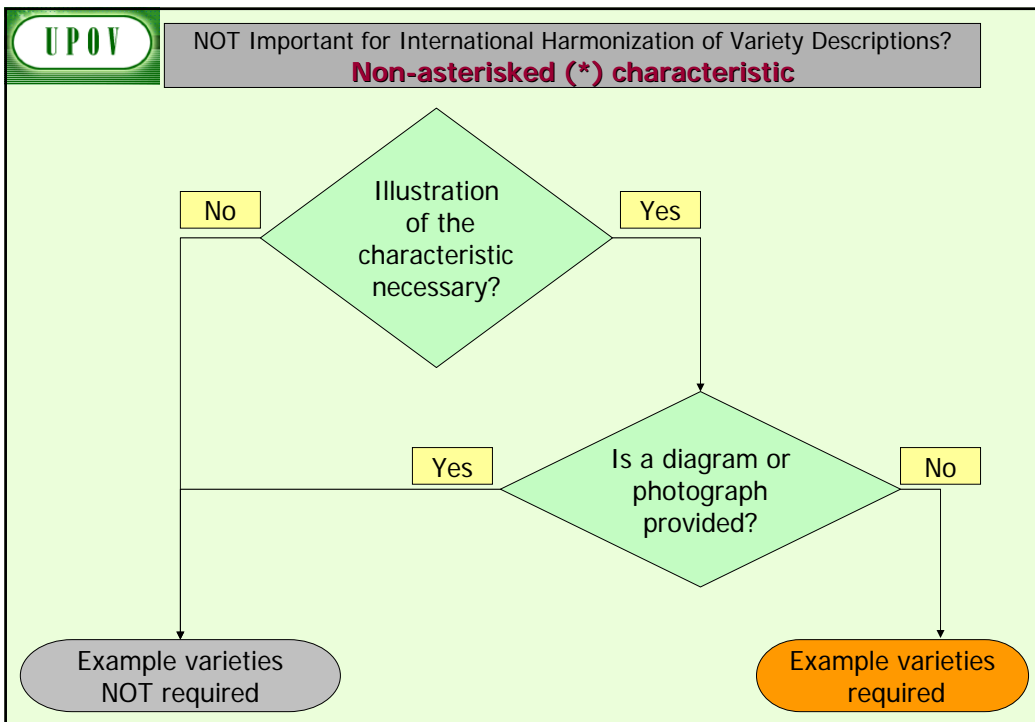
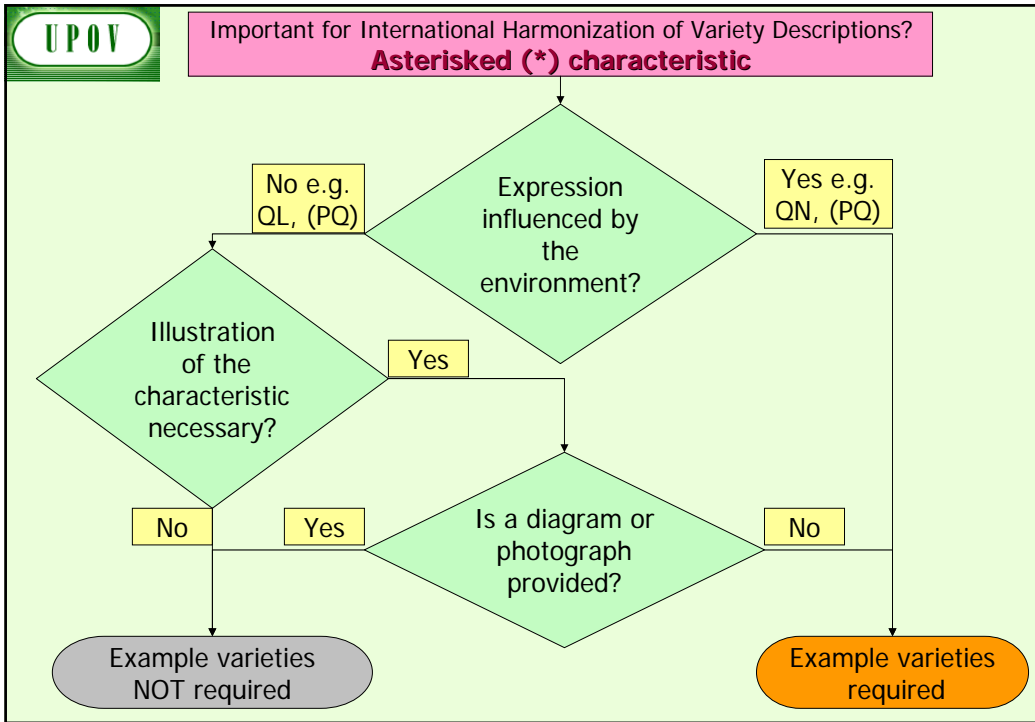
Example Varieties – the need

NEED

in characteristics used to
harmonize descriptions

and

which are **influenced by the
environment**



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

	English	français	Deutsch	español	Example Varieties/ Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. Seed: color (*)	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 (+)	Seedling: anthocyanin coloration	Plantule: pigmentation anthocyanique	Keimpflanze: Anthocyanfärbung	Plántula: pigmentación antocianica		
	absent	absente	fehlend	ausente	Verpia	1
	present	présente	vorhanden	presente	Pirat	9
3. Seedling: size of cotyledon (fully developed)	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

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ 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	Blattspreite: Intensität der Purpurfarbe der Unterseite	Limbo: intensidad del color púrpúreo 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	Bora, Purple	9
15. VG	Leaf blade: profile	Limbe: profil	Blattspreite: Profil	Limbo: perfil		
QN (a)	concave	concave	konkav	cóncavo	Perro	3
	plane	plan	flach	plano	Pergro, Saeyeupsil	5
	convex	convexe	konvex	convexo		7

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

	English	français	deutsch	español	Example Varieties/ Ejemplos/ Beispielsorten/ Variedades ejemplo	Note/ Nota
1. (*) (+)	Plant: growth type	Plante: type de croissance	Pflanze: Wuchstyp	Planta: tipo de crecimiento		
QL (a)	basal clusters	en amas à la base	basale Büschel	en racimos basales		1
	bushy	buissonnant	buschig	arbusivo		2
2. (+)	Only varieties with bushy growth type: Plant: predominant attitude of stems	Variétés à type de croissance buissonnant: Plant: attitude de tiges	Nur Sorten mit buschigem Wuchstyp: Pflanze: vorwiegende Haltung der Triebe	Sólo variedades con tipo de crecimiento arbusivo: Planta: porte predominante de los tallos		
QN (a)	upright	dressées	aufrecht	erecto		1
	semi upright	demi-dressées	halbaufrecht	semierecto		3
	horizontal	horizontales	waagrecht	horizontal		5
3.	Only varieties with bushy growth type: Plant: number of stems	Variétés à type de croissance buissonnant: Plant: nombre de tiges	Nur Sorten mit buschigem Wuchstyp: Pflanze: Anzahl Triebe	Sólo variedades con tipo de crecimiento arbusivo: 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	Breakoday	5
	tall	elevée	hoch	larga	Happy Face Pink	7

3. TEST GUIDELINES (document TGP/7)

(c) The process for developing UPOV Test Guidelines

Test Guidelines

- **264 Test Guidelines** adopted

but...

- **>2,750 genera and species** with varieties examined for PBR

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**

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

4. UPOV DATABASES

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)





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)

The screenshot shows the UPOV GENIE Database website. At the top, there is a green header with the UPOV logo and the text 'INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS'. Below the header, there is a navigation menu with links for 'HOME', 'ABOUT UPOV', 'UPOV DOCUMENTS', 'PUBLICATIONS', and 'NEWS & EVENTS'. On the left side, there is a vertical menu with links for 'GENIE Database', 'List of Crop / Species', 'List of Authorities', 'Standard Reports', 'Spreadsheets', 'UPOV-ROM Plant Variety Database', and 'UPOV Code System'. The main content area is titled 'GENIE Database' and features two tabs: 'Simple Search' (selected) and 'Multiple Search Report'. Below the tabs, there are several search fields: a 'Search Crop / Species:' dropdown menu with options like 'ALL', 'Botanical Name', 'Common Name in English', 'Common Name in French', 'Common Name in Spanish', and 'Common Name in German'; a text input field with a 'search' button; a 'UPOV Code:' text input field with a 'search' button; a 'Search Authority:' dropdown menu with the option '** Please select **'; and a 'by 2-letter ISO Code:' text input field with a 'search' button. On the right side of the search area, there is a cartoon illustration of a man with a beard and a turban, holding a plant. The bottom of the page has a light green footer.

5. THE UPOV WEBSITE

UPOV Website

<http://www.upov.int>

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

UPOV INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

HOME | ABOUT UPOV | UPOV DOCUMENTS | PUBLICATIONS | NEWS & EVENTS

DEUTSCH | ESPAÑOL

UPOV Convention
List of UPOV Publications
Gazette & Newsletter
Laws & Treaties
List of Taxa Protected
Plant Variety Protection Statistics
Impact Study
Explanatory Notes
General Introduction to DUS
TGP Documents
Test Guidelines
Practical Technical Knowledge
Cooperation in Examination
Variety Denominations
Plant Variety Database
GENIE Database

TG/1/3 General Introduction
"Associated" TGP Documents

Ref.	Title
TG/1/3	General Introduction with Explanations
TGP01	List of Taxa Submitted to UPOV
TGP02	Variables of Common Knowledge
TGP03	Conditions and Procedures of Variety Collection
TGP04	Experiments and Cooperation in DUS Testing
TGP05	Arrangements for DUS Testing
TGP06	Development of Test Guidelines
TGP08	Trial Design and Techniques Used in the Examination of DUS
TGP09	Examining Guidelines
TGP10	Examining Guidelines
TGP11	Examining Stability
TGP12	Gender Characteristics
TGP13	Guidelines on New Terms and Terms
TGP14	Glossary of Technical, Botanical and Statistical Terms Used in UPOV Documents
TGP15	New Types of Characteristics

UPOV INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

ABOUT UPOV | UPOV DOCUMENTS | PUBLICATIONS | NEWS & EVENTS

DEUTSCH | ESPAÑOL | FRANÇAIS

Mission Statement
Introduction
UPOV Convention
Membership
UPOV Bodies
Impact Study
Legal Resources
Key Issues
Contact us

DL-205

UPOV Distance Learning Course DL-205

Introduction to the UPOV System of Plant Variety Protection under the UPOV Convention

The International Union for the Protection of New Varieties of Plants is pleased to inform you about the next sessions of the distance learning course "Introduction to the UPOV System of Plant Variety Protection under the UPOV Convention" (DL-205). The objective of the course is to provide a comprehensive introduction to the UPOV system of plant variety protection under the International Convention for the Protection of New Varieties of Plants. The course comprises 11 modules.

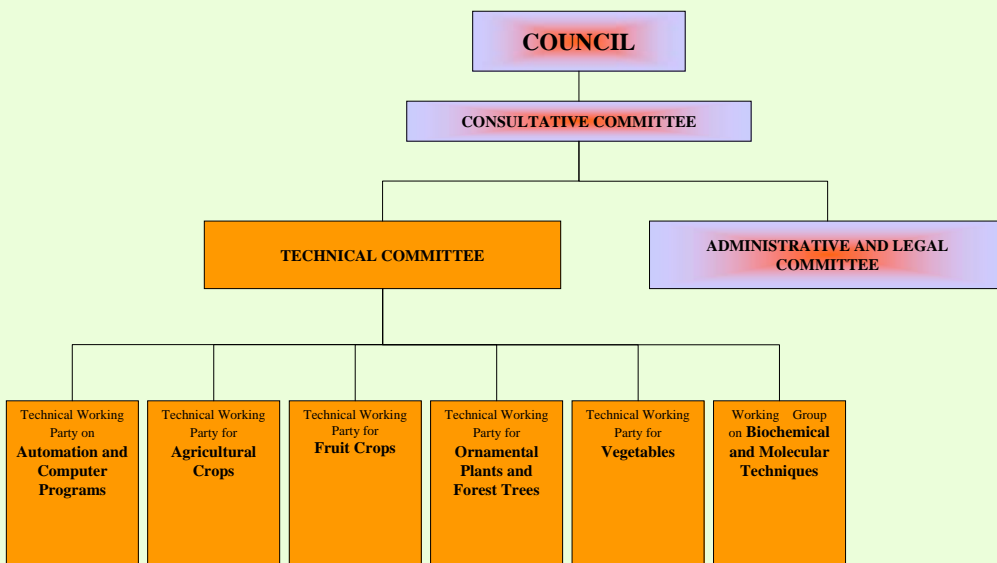
- Nature of Plant Breeding and the Need for Plant Breeders' Rights
- Subject Matter and Entitlement to Protection
- Conditions of Protection
- Applying for a Plant Breeder's Right
- Testing of Distinctness, Uniformity and Stability (DUS)
- Scope of the Plant Breeder's Right; Acts and Material Covered
- Scope of the Plant Breeder's Right; Varieties within the Scope of the Plant Breeder's Right
- Exceptions and Restrictions to the Plant Breeder's Right
- Nullity and Cancellation of the Plant Breeder's Right
- Union for the Protection of New Varieties of Plants
- Implementation of the Convention and Final Provisions
- Final Exam

The course is followed on-line, via the internet. Each student studies at their own pace, on their PC or, alternatively, may download the course to study on paper. The course is estimated to require around 36 hours of study, which can be undertaken at any time within the 4-week study period. The course contains comprehensive explanations, diagrams, self-assessment questions and end of module tests to guide participants. Tutoring by UPOV experts provides students with the opportunity for further clarification and discussion.

The course materials and tutoring are available to the participants for a period of four weeks. The final exam is taken in the fifth week of the course. Certificates are issued at the end of the course.

6. ROLE OF THE UPOV TECHNICAL WORKING PARTIES (THE DUS EXAMINATION)

UPOV Structure

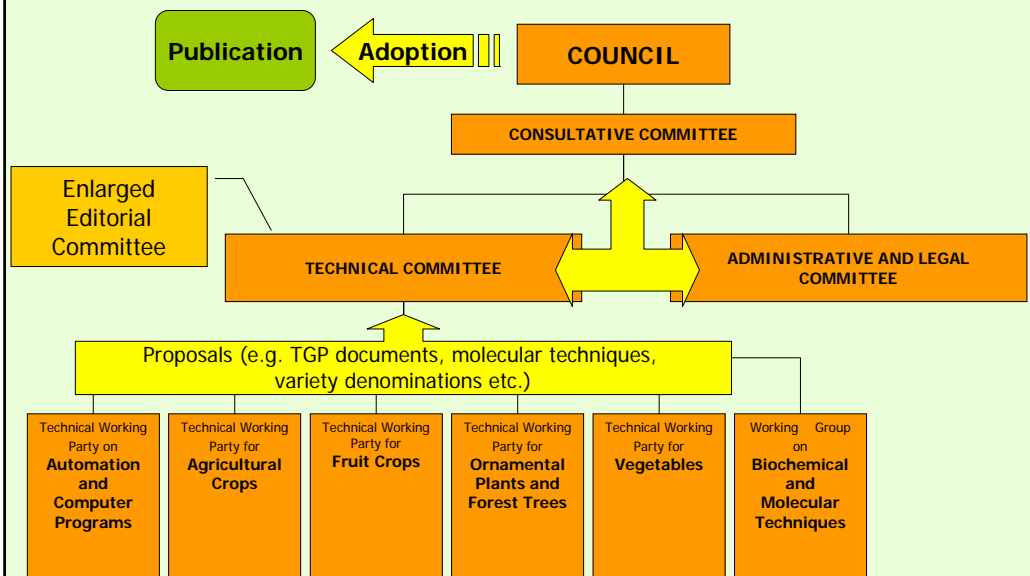


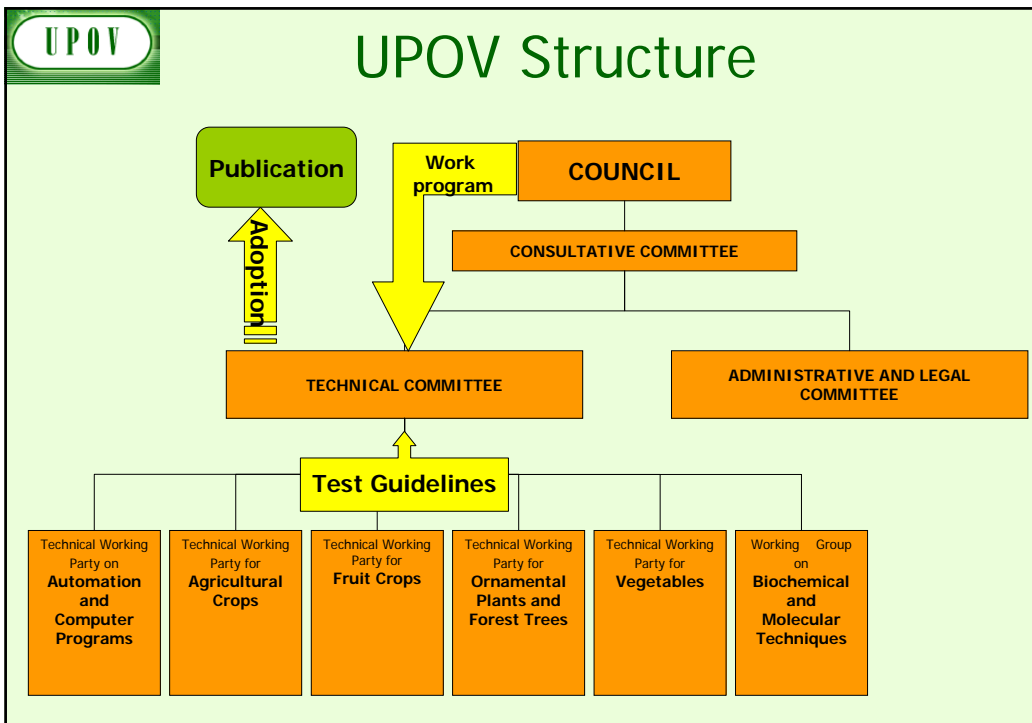


DEVELOPING GUIDANCE to facilitate HARMONIZATION and COOPERATION



UPOV Structure





UPOV

Example TWP Session

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
[TECHNICAL WORKSHOP] (optional)		Reports on developments in PVP	TGP document development	TGP document development	Experiences with new types and species Variety denominations	Databases, Electronic application systems Exchangeable software
COFFEE	COFFEE	COFFEE	COFFEE	COFFEE	COFFEE	COFFEE
[TECHNICAL WORKSHOP] (optional)		Reports (Continuation) Molecular techniques	TGP document development	Room 1 Test Guidelines subgroup Room 2 Test Guidelines subgroup	Uniformity method development	Recommendations on Test Guidelines
	LUNCH		LUNCH		LUNCH	
PREPARATORY WORKSHOP	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup
COFFEE	COFFEE	COFFEE	TECHNICAL VISIT		COFFEE	Future program Adoption of report
PREPARATORY WORKSHOP	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup
	Continuation		RECEPTION		Continuation	
						END OF SESSION

EXCHANGING INFORMATION

Example TWP Session

Sunday	Monday		Tuesday		Wednesday	Thursday		Friday		
[TECHNICAL WORKSHOP] (optional)	Reports on developments in PVP		TGP document development		TGP document development	Experiences with new types and species Variety denominations		Databases, Electronic application systems Exchangeable software		
COFFEE	COFFEE		COFFEE		COFFEE		COFFEE			
[TECHNICAL WORKSHOP] (optional)	Reports (Continuation) Molecular techniques		TGP document development		Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Uniformity method development Recommendations on Test Guidelines			
	LUNCH		LUNCH		LUNCH		LUNCH			
PREPARATORY WORKSHOP	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	TECHNICAL VISIT		Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup		
COFFEE	COFFEE		COFFEE				COFFEE		Future program Adoption of report	
PREPARATORY WORKSHOP	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup			Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	END OF SESSION	
	Continuation		RECEPTION		Continuation					

AN OPPORTUNITY for TRAINING

Example TWP Session

Sunday	Monday		Tuesday		Wednesday		Thursday		Friday
[TECHNICAL WORKSHOP] (optional)	Reports on developments in PVP		TGP document development		TGP document development		Experiences with new types and species Variety denominations		Databases, Electronic application systems Exchangeable software
	COFFEE		COFFEE		COFFEE		COFFEE		COFFEE
	Reports (Continuation) Molecular techniques		TGP document development		Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Uniformity method development		Recommendations on Test Guidelines
LUNCH		LUNCH		LUNCH		LUNCH		LUNCH	
PREPARATORY WORKSHOP	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	TECHNICAL VISIT		Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Future program Adoption of report
	COFFEE		COFFEE				COFFEE		
	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup			Room 1 Test Guidelines subgroup	Room 2 Test Guidelines subgroup	END OF SESSION
Continuation		RECEPTION				Continuation			

	TWA	TWC	TWF	TWO	TWV	BMT
1994	Spain	Israel	New Zealand	Australia	UK	France
1995	Germany	Poland	UK	Netherlands	Netherlands	Netherlands
1996	Greece	Germany	Israel	Israel	Czech Rep.	
1997	Uruguay	Hungary	Netherlands	Denmark	Spain	United Kingdom
1998	France	Belgium	Australia	New Zealand	Poland	USA
1999	Canada	Finland	Slovakia	Czech Rep.	Germany	
2000	Sweden	Ukraine	Hungary	Hungary	France	France
2001	Mexico	Czech Rep.	Spain	Japan	Italy	Germany
2002	Brazil	Mexico	Argentina	Ecuador	Japan	
2003	Japan	Denmark	Canada	Canada	Netherlands	Japan
2004	Poland	Japan China (workshop)	Germany	Germany	Rep. of Korea	
2005	New Zealand	Canada	Japan	Rep. of Korea	Kenya	USA
2006	China	Kenya	Brazil	Brazil	Mexico	Rep. of Korea
2007	Hungary	Romania	Rep. of Korea	China	Kenya	
2008	South Africa	Rep. of Korea	Portugal	Netherlands	Poland	Spain
2009	Rep. of Korea	USA	France	European Union	China	
2010	Croatia May 24-28	European Union June 28 - July 2	Mexico Sept. 27 - Oct. 1	Mexico Sept. 20 - 24	Bulgaria July 5 - 9	Canada May 11 - 13

UPOV

7. AGENDA for the TWV Session

8. FEEDBACK

THANK YOU