UPOV

TECHNICAL WORKING PARTY FOR FRUIT CROPS

Forty-First Session
Cuernavaca, Morelos State, Mexico,
September 27 to October 1, 2010

PREPARATORY WORKSHOP

September 26, 2010

UPOV

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 for distinctness (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

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1. INTRODUCTION TO UPOV

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The International Convention for the Protection of New Varieties of Plants

established in 1961

The International Union for the Protection of New Varieties of Plants

Union internationale pour la protection des obtentions végétales

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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

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

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**


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TG/258/1
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
Dioscorea alata L.	Greater yam, Guyana arrowroot, Taro needle yam, White yam, Winged yam, Yam	Grande igname, Igname ailée, Igname de Chine	Große Jamswurzel, Weiße Yam, Wasser-Yamswurzel	Ñame blanco, Ñame de agua, Tabaco
Dioscorea polystachya Turcz., *Dioscorea batatas* Decne	Chinese yam, Chinese potato, Cinnamon vine	Igname	Chinesische Yamswurzel	
Dioscorea japonica Thunb.	Japanese yam	Igname japonaise		

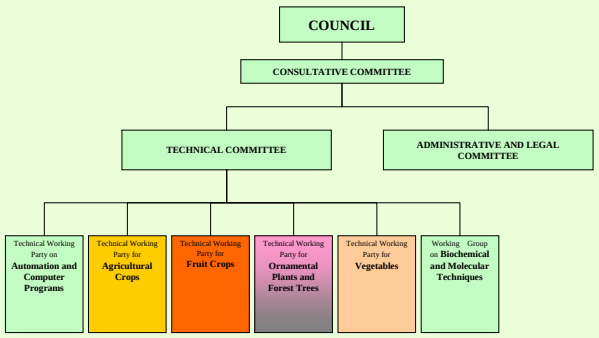
The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, 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 notes were correct at the time of the introduction of these Test Guidelines but may be revised or updated. Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

UPOV Structure



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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TG/[xx]/[x]
ORIGINAL: [xx]
DATE: [xx]

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

DRAFT

Please select: "[Yes]" then "[Comment]" from the Word menu to see all notes

[MAIN COMMON NAME]
([Types of [botanical name]])
([UPOV Code])
([botanical name])

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

prepared by [the expert / [experts] from [drafting authority / organization]]

to be considered by the [Technical Working Party for [xx] or on [xx] session, to be held in [xx] from [xx]]

Alternative Names:

Botanical name	English	French	German	Spanish
[xx]	[xx]	[xx]	[xx]	[xx]

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.

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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	

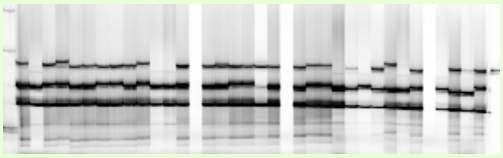
Selection of Characteristics

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

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: QUALITATIVE

QN: QUANTITATIVE

PQ: PSEUDO-QUALITATIVE

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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	Imuppuk	1
	semi-upright	semi dressé	halbaufrecht	semierecto	D0158-1	2
	spreading	étalé	breitwüchsig	abierto	Sunnem 03	3
	semi-trailing	semi-étalé	halbhängend	semirrastrero	Impsaf	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	Imuppuk	7

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QUALITATIVE Characteristics

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

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

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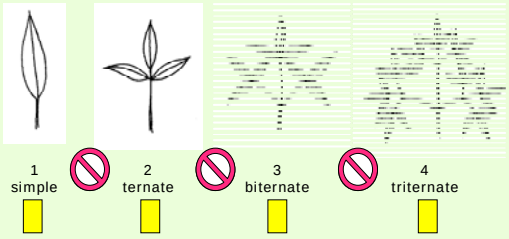
Qualitative characteristic

Clematis: Leaf: type



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NON-Qualitative characteristic

Anthocyanin coloration: absent / present

	Variety A	Variety B	Variety C
Environment A	○	●	○
Environment B	○	●	◐

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QUANTITATIVE Characteristics

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

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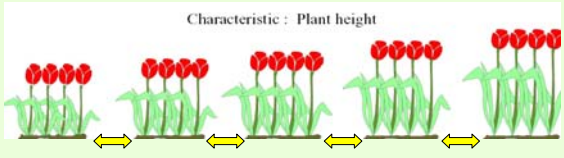
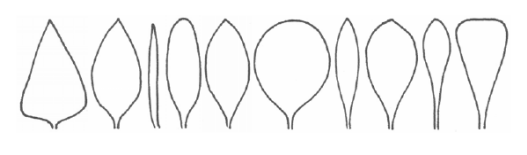
Quantitative Characteristic

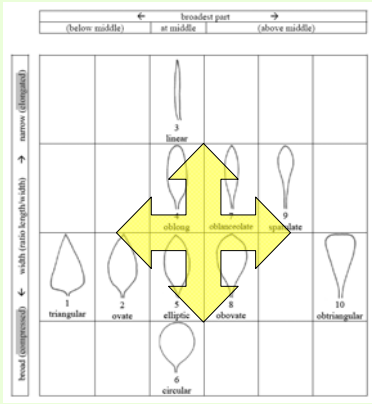


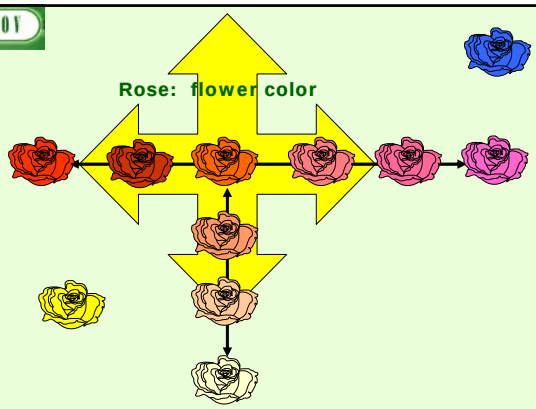
PSEUDO-QUALITATIVE Characteristics

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

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

Quantitative Characteristics

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

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

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

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

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 *(absent or very weakly expressed)*
2 weak *(weakly expressed)*
3 strong *(strongly expressed)*

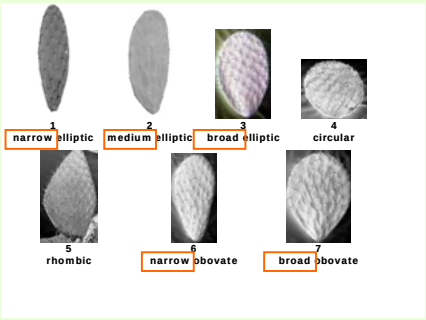
Example 2
1 e.g. absent or weak *(absent or weakly expressed)*
2 moderate (or medium) *(moderately expressed)*
3 strong *(strongly expressed)*

Pseudo-qualitative Characteristics

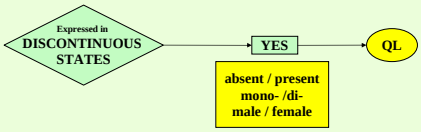
(typical examples)

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

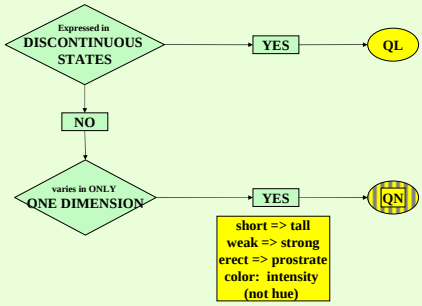
Opuntia: Shape of Cladode



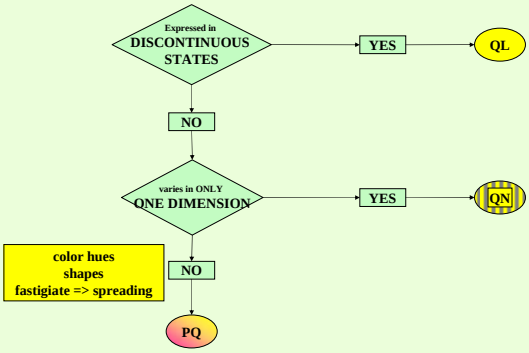
QL, QN or PQ?



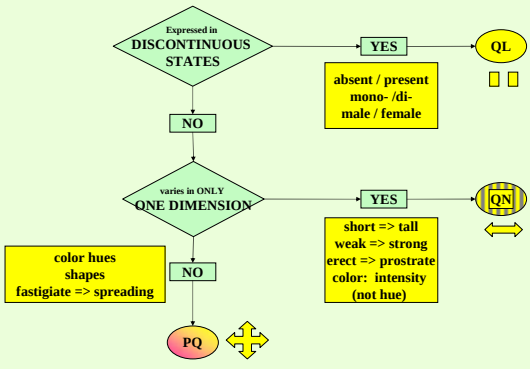
QL, QN or PQ?



QL, QN or PQ?



QL, QN or PQ?



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

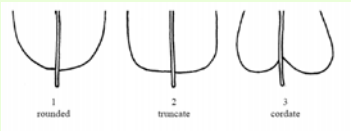
2.	**Leaf sheath: anthocyanin coloration**	
	absent or very weak	1
	weak	3
	medium	5
	strong	7
	very strong	9

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

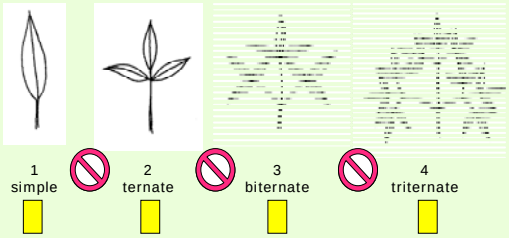
PQ: PSEUDO-QUALITATIVE

QUALITATIVE Characteristics

"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



Qualitative Characteristics: distinctness

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

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

Types of Expression

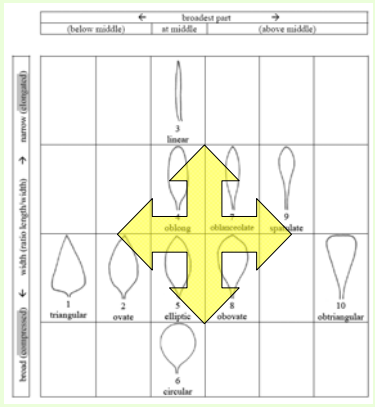
QL: QUALITATIVE

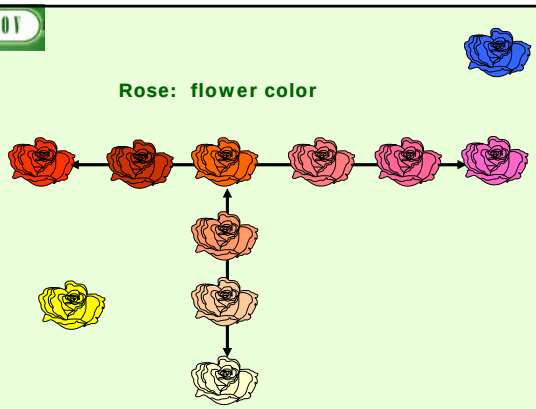
QN: QUANTITATIVE

PQ: PSEUDO-QUALITATIVE

PSEUDO-QUALITATIVE Characteristics

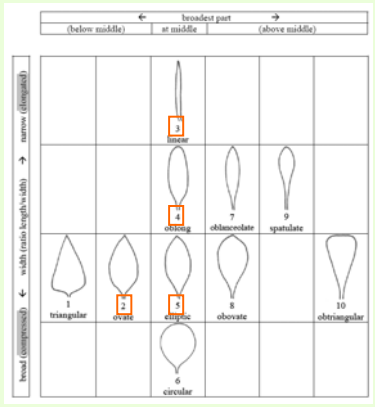
In the case of "pseudo-qualitative characteristics," the **range of expression is at least partly continuous, but varies in more than one dimension** (e.g. shape: ovate (1), elliptic (2), circular (3), obovate (4)) and cannot be adequately described by just defining two ends of a linear range. In a similar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

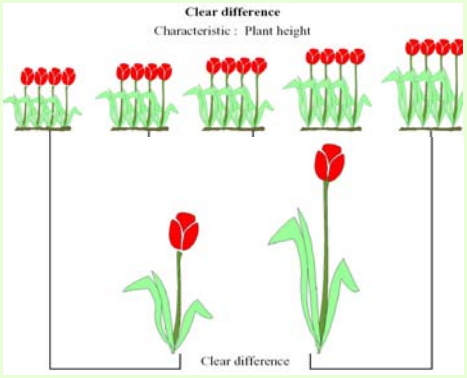
QUANTITATIVE Characteristics

"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

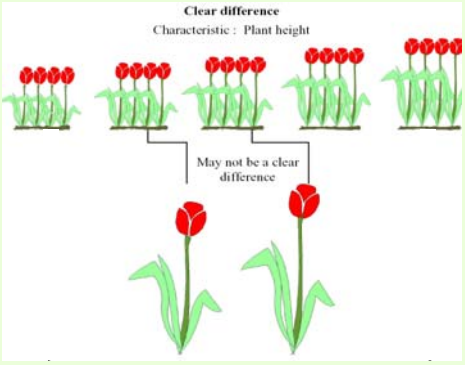
Quantitative Characteristics: **distinctness**

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

Quantitative Characteristic



Quantitative Characteristic



NOTES
versus
SIDE-BY-SIDE COMPARISON

(Quantitative characteristics)

TGP/9/1 "Examining Distinctness"

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:

TGP/9/1 "Examining Distinctness"

Quantitative Characteristics: **distinctness**

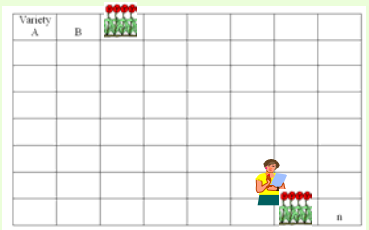
The General Introduction explains that, in the case of visually observed quantitative characteristics:

"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.



...and comparison with descriptions in databases

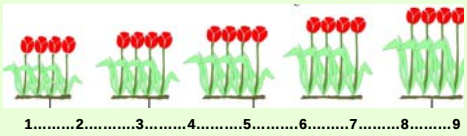
Quantitative Characteristics: **distinctness**

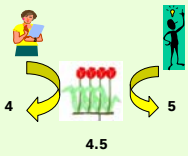
Quantitative characteristics are considered for distinctness according to the method of observation and the features of propagation of the variety concerned.

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**:

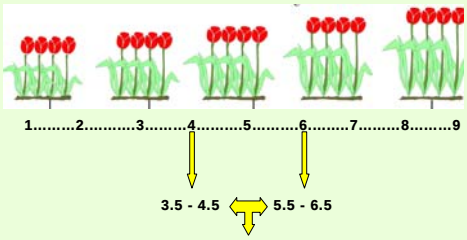
WHY?





4.5

"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
Dianella Diascia, 2007-03-28
- 9 -

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

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

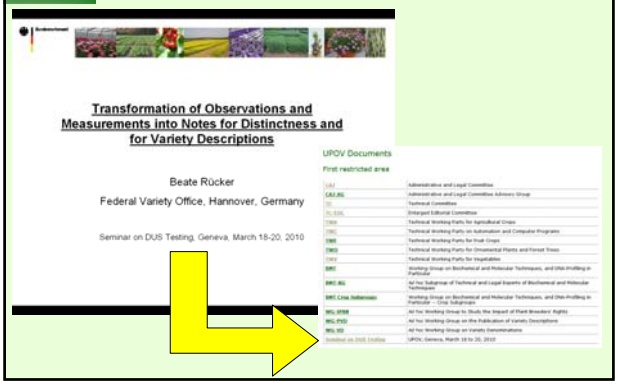
Quantitative Characteristics: **distinctness**

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

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

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

Process levels other than Notes...



3. TEST GUIDELINES

(b) Guidance on drafting characteristics

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

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**.

TGP/9/1 "Examining Distinctness"

	Type of expression of characteristic		
Method of propagation of the variety	QL (QUAL itatative)	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

	Type of expression of characteristic		
Method of propagation of the variety	QL (QUAL itatative)	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

	Type of expression of characteristic		
Method of propagation of the variety	QL (QUAL itatative)	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*)*	**

Type of Record

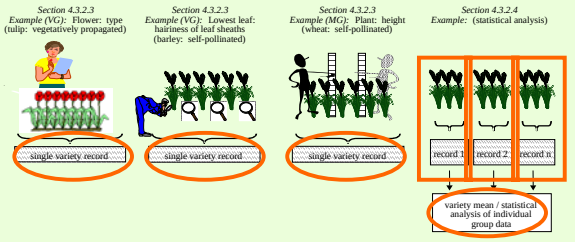
(for the purposes of distinctness)

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

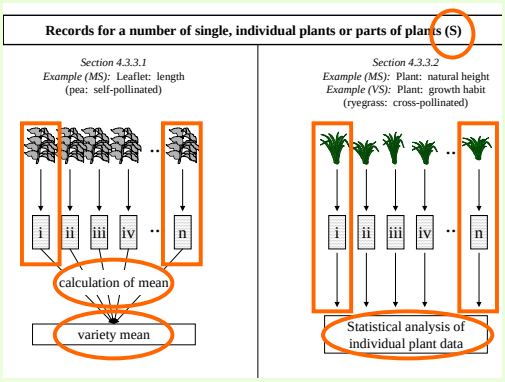
In most cases, "G" provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

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

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



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



EXERCISE

EXERCISE ON METHOD OF OBSERVATION FOR DISTINCTNESS

Please, indicate:
1 - which method(s) of observation is/are not appropriate (-) and
2 – which method(s) of observation is/are probably most appropriate (+/++)
MG: single measurement of a group of plants or parts of plants
MS: measurement of a number of individual plants or parts of plants
VG: visual assessment by a single observation of a group of plants or parts of plants
VS: visual assessment by observation of individual plants or parts of plants

Exercise 1	
Background information	
Crop:	cross pollinated grass
Number of Growing Cycles:	two independent growing cycles
Test Design:	60 spaced plants, divided between 2 replicates plus 8 meters of row plot, divided between 2 replicates
Observations for distinctness:	60 spaced plants
Characteristic:	**Plant: natural height at inflorescence emergence** (states: short (3); medium (5); long (7))

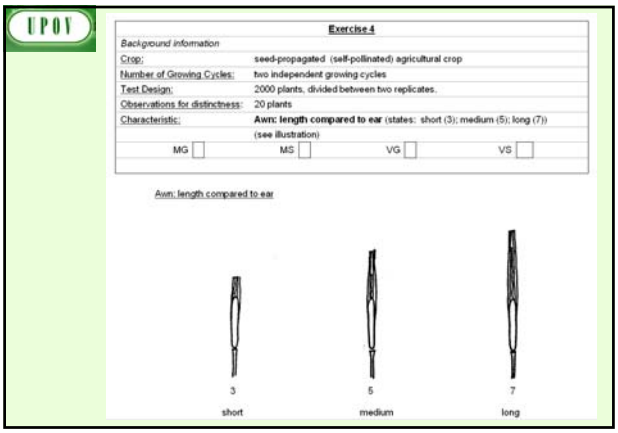
MG ☐ MS ☐ VG ☐ VS ☐

Exercise 2	
Background information	
Crop:	vegetatively propagated ornamental variety
Number of Growing Cycles:	single growing cycle
Test Design:	10 plants
Observations for distinctness:	5 plants
Characteristic:	**Plant: height** (states: short (3); medium (5); long (7))

MG ☐ MS ☐ VG ☐ VS ☐

Exercise 3	
Background information	
Crop:	vegetatively propagated ornamental variety
Number of Growing Cycles:	single growing cycle
Test Design:	10 plants
Observations for distinctness:	5 plants
Characteristic:	**Flower: presence of perianth** (states: absent (1); present (9))

MG ☐ MS ☐ VG ☐ VS ☐



Exercise 4

Background information	
Crop:	seed-propagated (self-pollinated) agricultural crop
Number of Growing Cycles:	two independent growing cycles
Test Design:	2000 plants, divided between two replicates.
Observations for distinctness:	20 plants
Characteristic:	**Awn: length compared to ear** (states: short (3); medium (5); long (7)) (see illustration)

MG ☐ MS ☐ VG ☐ VS ☐

Awn: length compared to ear

3. TEST GUIDELINES

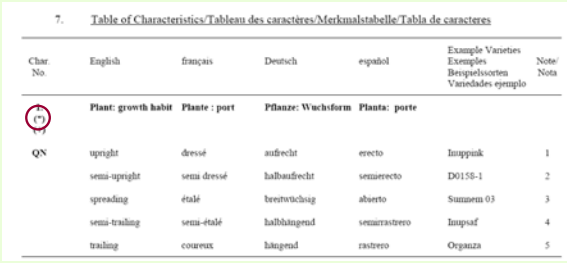
(b) Guidance on drafting characteristics

(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.	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.

Asterisked Characteristic



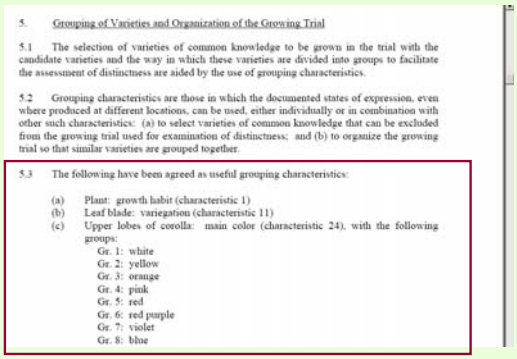
7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

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	Imppink	1
	semi-upright	semi dressé	halbaufrecht	semierecto	D0158-1	2
	spreading	étalé	breitwüchsig	abierto	Summem 03	3
	semi-trailing	semi-étalé	halbhängend	semirrastrero	Impsaf	4
	trailing	coureux	hängend	rastrero	Organza	5

Asterisked Characteristic

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

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)

TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1	Botanical name	*Malus domestica* Borkh.
1.2	Common name	Apple

2. Applicant

Name

Address

Telephone No.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

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, Delorgine	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
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: **1. to select varieties of common knowledge that can be excluded from the growing trial** used for examination of distinctness, and/or **2. to organize the growing trial so that similar varieties are grouped together**	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. 2.Must be useful for functions 1 and 2. 3.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

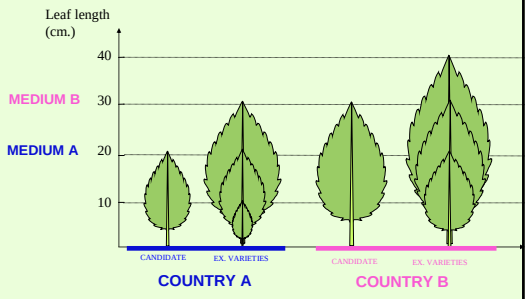
(iv) Example varieties

Example Varieties: the Objective

Clarify states of expression
- Illustrate characteristics
- Determine the state of expression

→ Harmonized descriptions

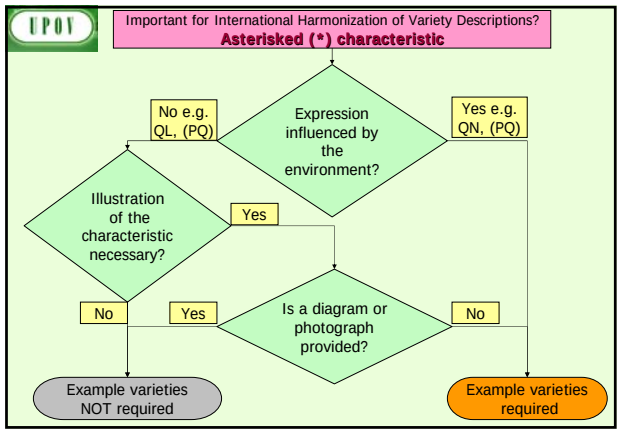
Example Varieties versus Measurements

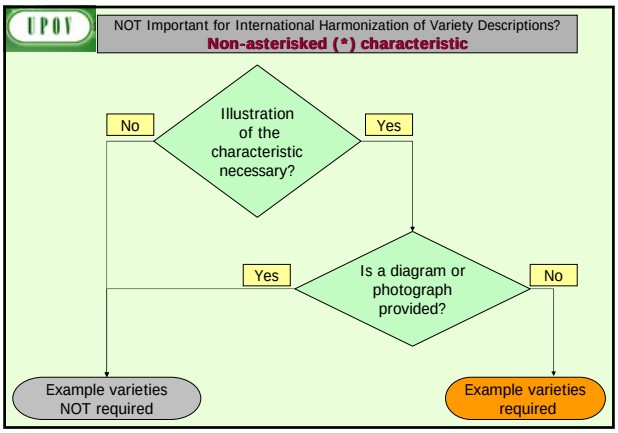


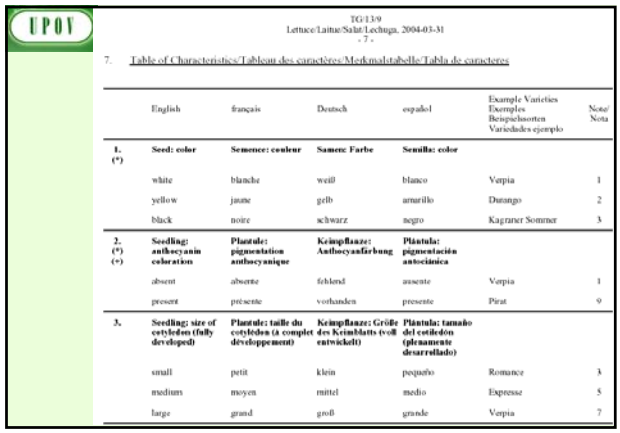
Example Varieties –the need

Example Varieties – the need

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







TG/13/9
Lettuce/Laitue/Salat/Lechuga, 2004-03-31
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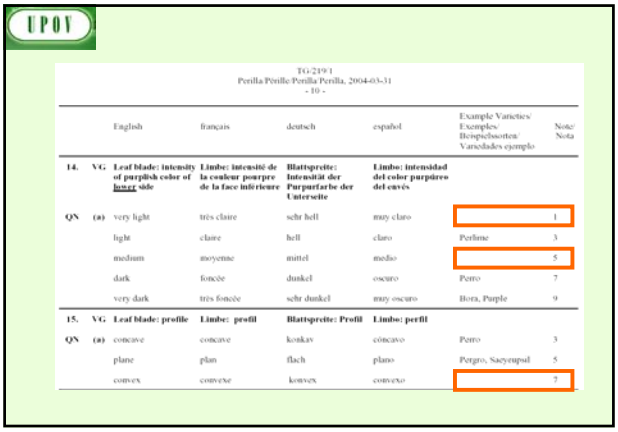
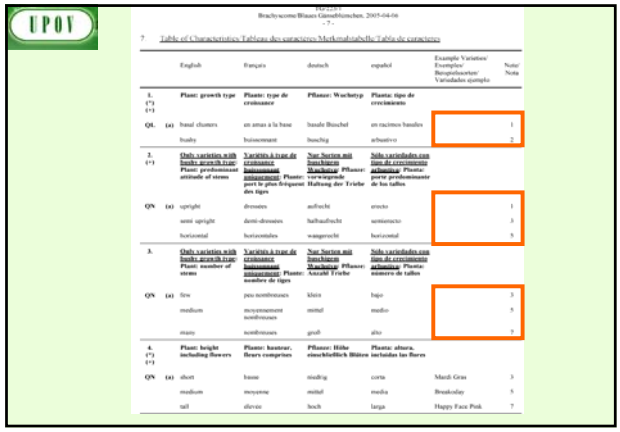
7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

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



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

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
14.	VG	**Leaf blade: intensity of purplish color of lower side**	**Limbe: intensité de la couleur pourpre de la face inférieure**	**Blattspreite: Intensität der Purpurfarbe der Unterseite**	**Limbo: intensidad del color purpúreo del envés**		
QN	(a)	very light	très claire	sehr hell	muy claro		1
		light	claire	hell	claro	Perilme	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



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

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

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

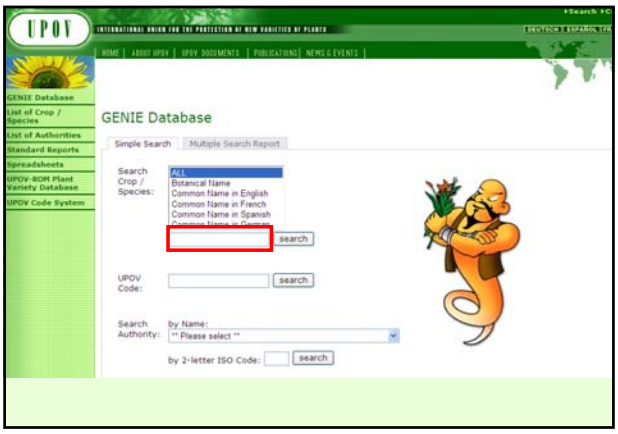
GENIE Database

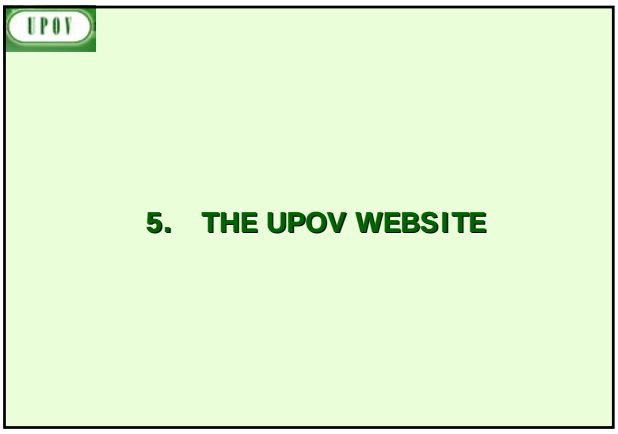
Variety denomination related information

Protection offered by UPOV members

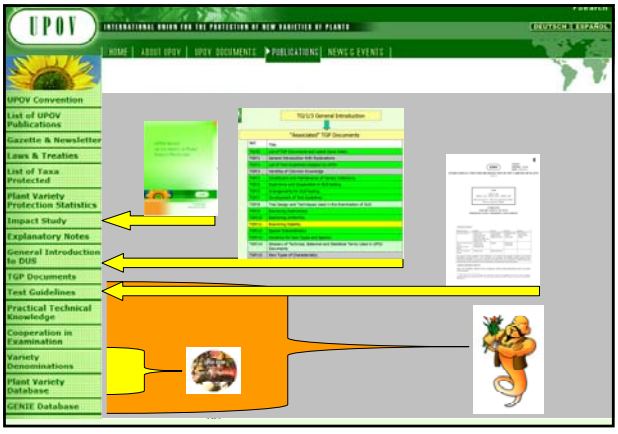
DUS information

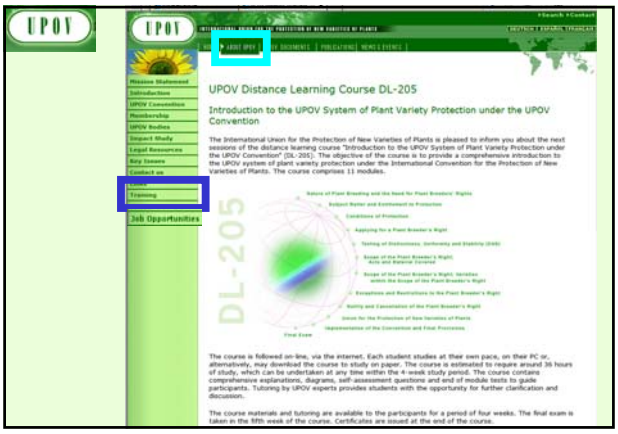
- UPOV Test Guidelines
- practical experience of UPOV (document TC/44/4)
- cooperation in DUS examination (document C/41/5)

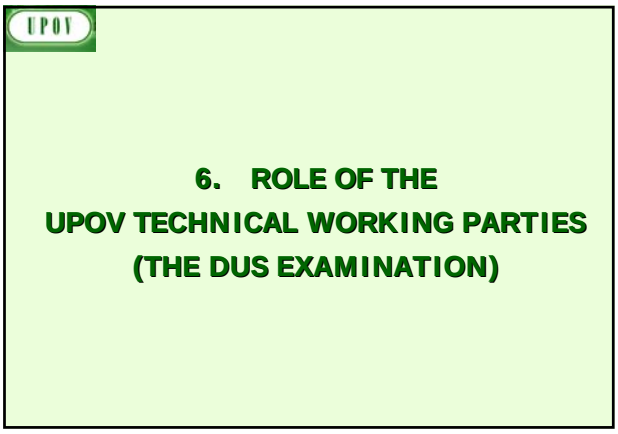

UPOV
GENIE Database
List of Crop / Species
List of Authorities
Standard Reports
Spreadsheets
UPOV ROM Plant Variety Database
UPOV Code System
GENIE Database
Simple Search
Multiple Search Report
Search Crop / Species:
ALL
Botanical Name
Common Name in English
Common Name in French
Common Name in Spanish
search
UPOV Code:
search
Search Authority:
by Name:
** Please select **
by 2-letter ISO Code:
search


UPOV
5. THE UPOV WEBSITE

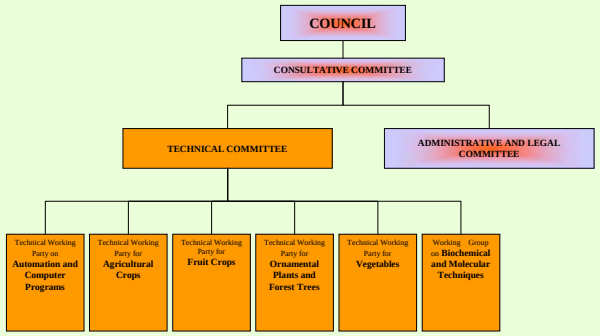

UPOV
UPOV Website
http://www.upov.int
(e-mail: upov.mail@upov.int)


UPOV
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


UPOV
UPOV Distance Learning Course DL-205
Introduction to the UPOV System of Plant Variety Protection under the UPOV Convention
Job Opportunities
DL-205

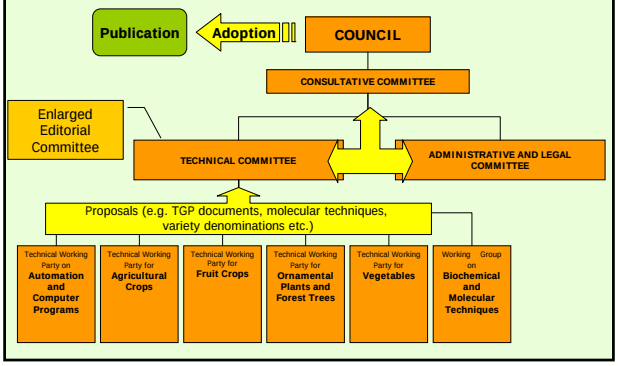

UPOV
6. ROLE OF THE
UPOV TECHNICAL WORKING PARTIES
(THE DUS EXAMINATION)

UPOV Structure

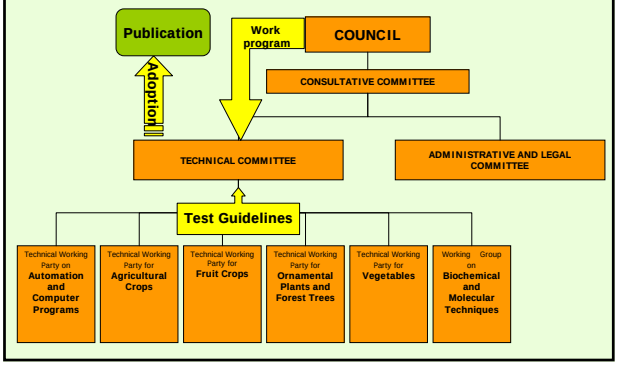


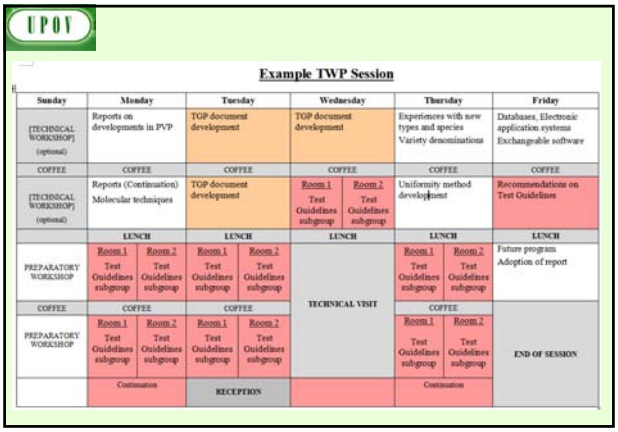
DEVELOPING GUIDANCE
to facilitate
HARMONIZATION and COOPERATION

UPOV Structure



UPOV Structure





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
[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	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		COFFEE	
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	

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	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	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		COFFEE	
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	

TWP Venues

	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

7. AGENDA for the TWF Session

8. FEEDBACK


UPOV
THANK YOU