UPOV

TECHNICAL WORKING PARTY FOR VEGETABLES

Forty-Second Session
Cracow, Poland, June 23 to 27, 2008

PREPARATORY WORKSHOP

June 22, 2008

UPOV

PROGRAM

1./2. Introduction to UPOV and the Technical Working Parties

3. National arrangements and cooperation with breeders in preparing test guidelines

4. Overview of the General Introduction (document TG/1/3 and TGP documents)

5. Test Guidelines (document TGP/7)

   (a) Introduction
   (b) Guidance on drafting characteristics
   (c) Method of observation (V/M; G/S)
   (d) Asterisked, grouping and TQ characteristics
   (e) Example varieties
   (f) The process for developing UPOV Test Guidelines

EXERCISES

6. The UPOV website

7. Agenda for the TWP meeting

UPOV

1. INTRODUCTION TO UPOV

UPOV

UPOV

The International Convention for the Protection of New Varieties of Plants

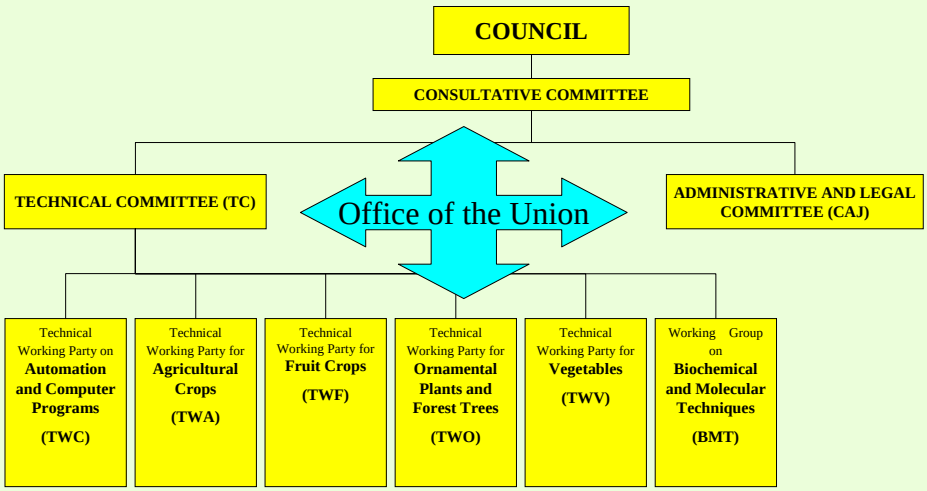
established in 1961

The International Union for the Protection of New Varieties of Plants

Union internationale pour la protection des obtentions végétales

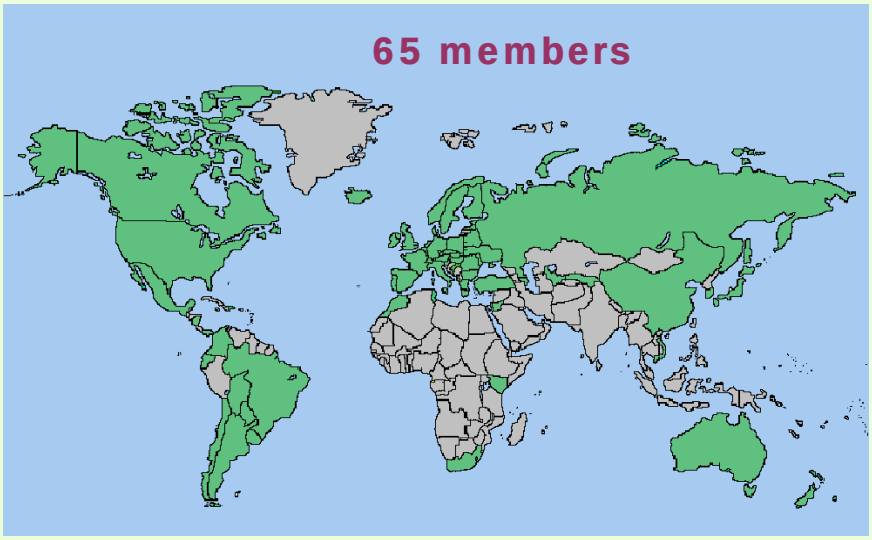
- **Members of the Union**
  - States
  - Intergovernmental Organization(s)
- **Organs established by the Convention**
  - Council
  - Office of the Union
- **Other Bodies**

UPOV Structure



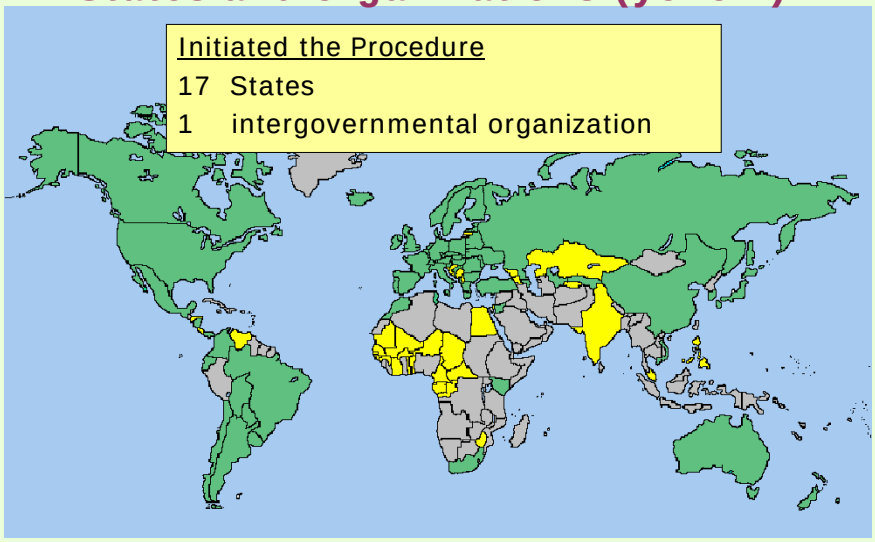
UPOV

UPOV Membership / Territories covered

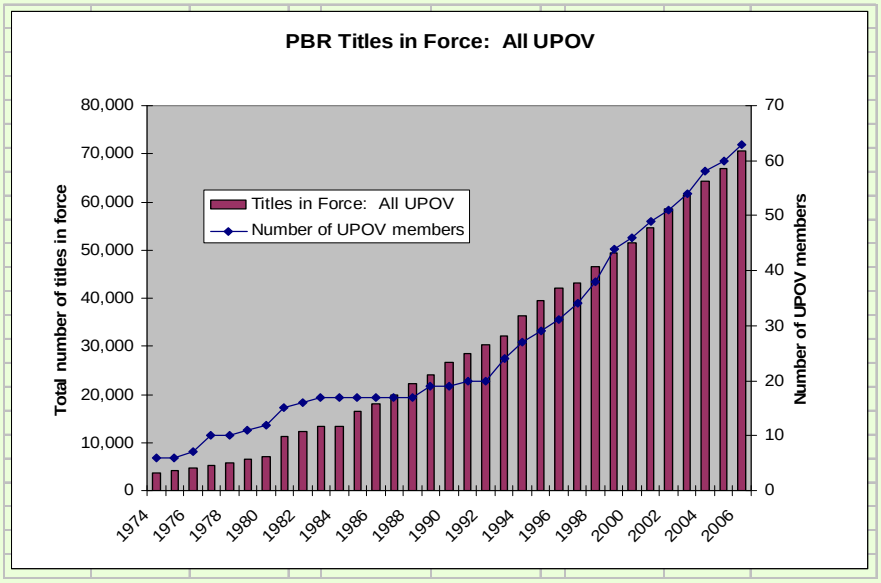


UPOV

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

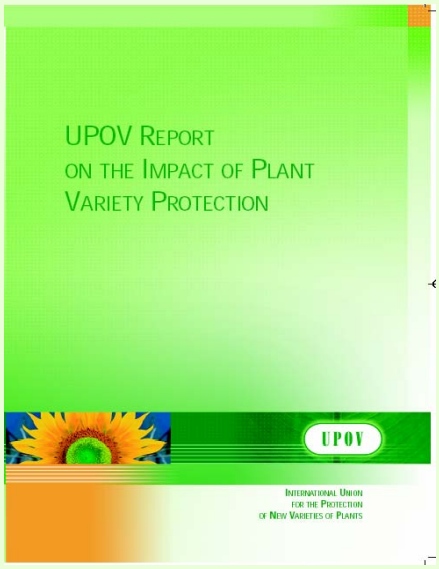


Development of Plant Variety Protection



UPOV MISSION STATEMENT

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



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

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

UPOV

THE CONDITIONS FOR GRANTING A BREEDER'S RIGHT

Criteria to be satisfied

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

} **"DUS"**

UPOV

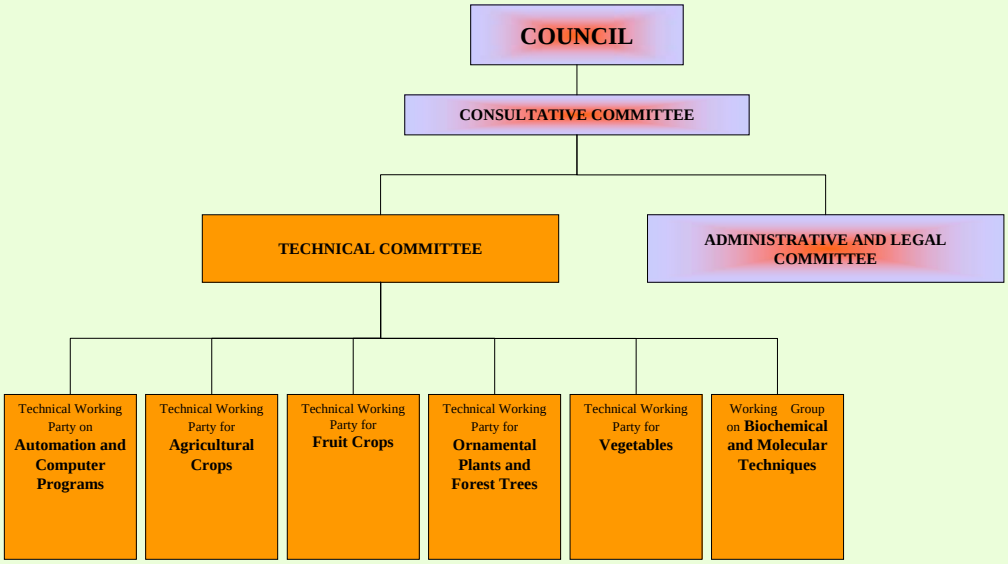
THE CONDITIONS FOR GRANTING A BREEDER'S RIGHT

Other conditions

- VARIETY DENOMINATION
- FORMALITIES
- PAYMENT OF FEES

NO OTHER CONDITIONS!

UPOV Structure



3. NATIONAL ARRANGEMENTS AND COOPERATION WITH BREEDERS IN PREPARING TEST GUIDELINES

UPOV

4. OVERVIEW OF THE GENERAL INTRODUCTION

(DOCUMENT TG/1/3 AND TGP DOCUMENTS)

GUIDANCE FOR DUS EXAMINATION

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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)

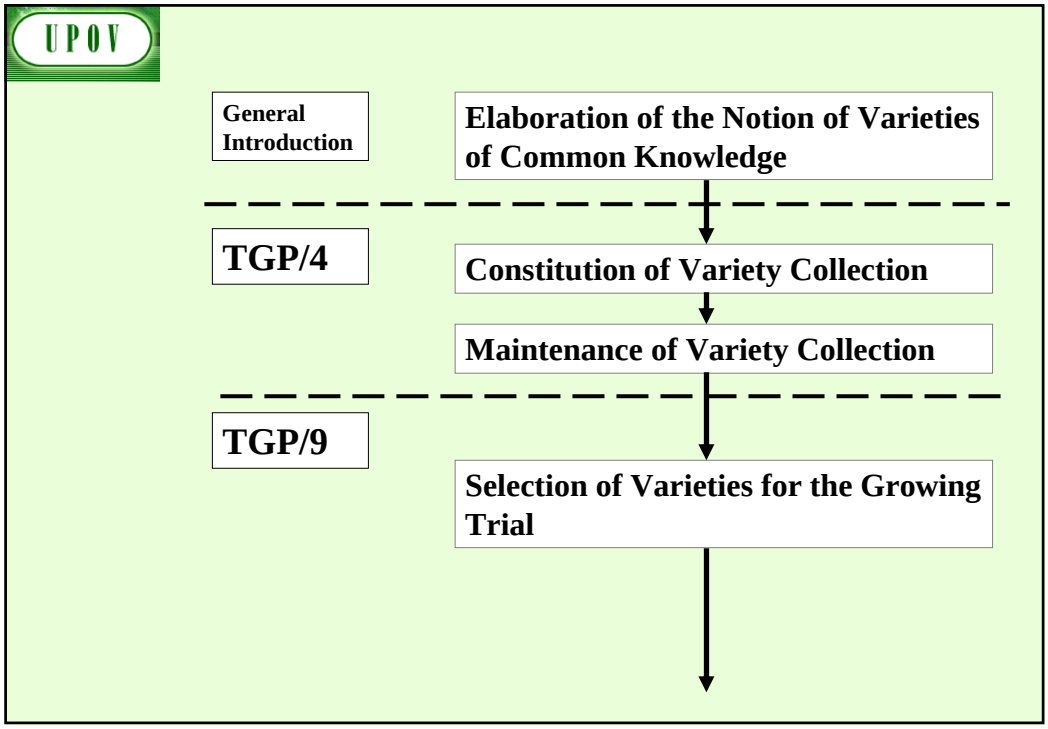
UPOV provides guidance by:

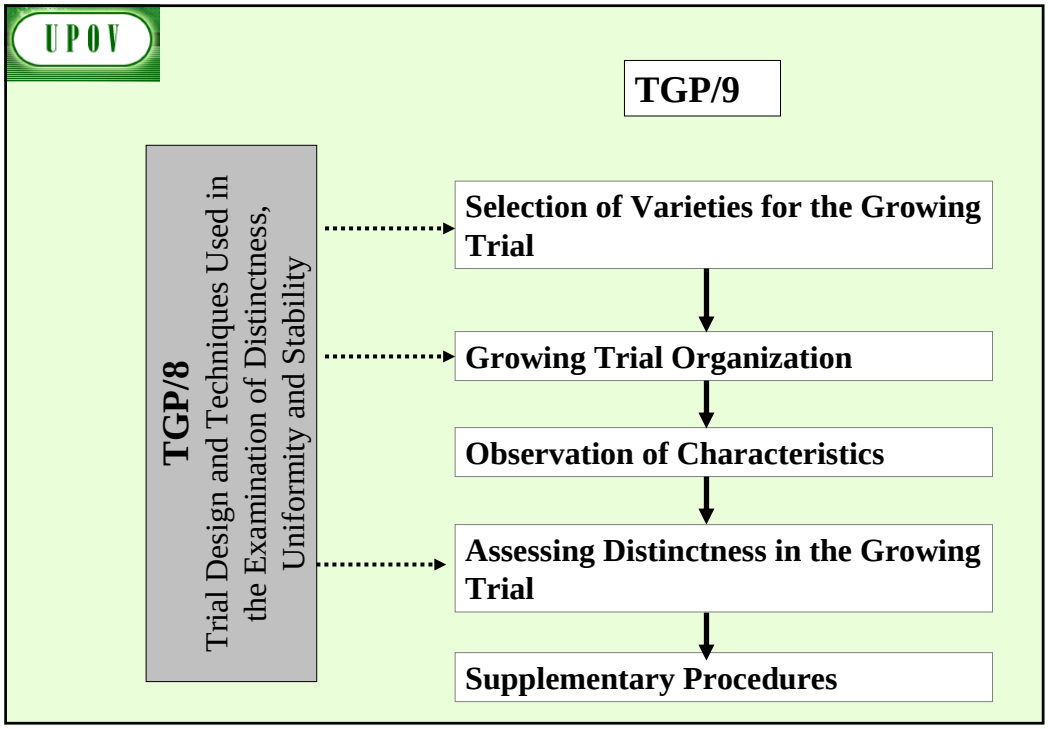
- The “General Introduction” (TG/1/3)
  - General technical principles
  - Organization of DUS Testing
  - Associated “TGP” Documents (e.g. statistical methods)

TG/1/3 General Introduction

“Associated” TGP Documents

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


UPOV
General Introduction
Elaboration of the Notion of Varieties of Common Knowledge
TGP/4
Constitution of Variety Collection
Maintenance of Variety Collection
TGP/9
Selection of Varieties for the Growing Trial


UPOV
TGP/9
TGP/8
Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability
Selection of Varieties for the Growing Trial
Growing Trial Organization
Observation of Characteristics
Assessing Distinctness in the Growing Trial
Supplementary Procedures

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PROGRAM

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

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5. TEST GUIDELINES

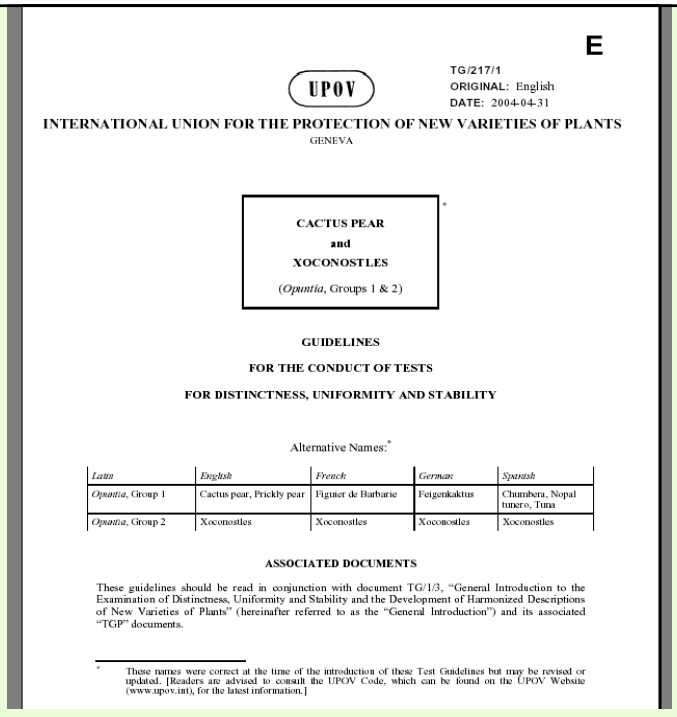
(a) Introduction

UPOV provides guidance by:

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

AND

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



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UPOV

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

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

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

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

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

ASSOCIATED DOCUMENTS

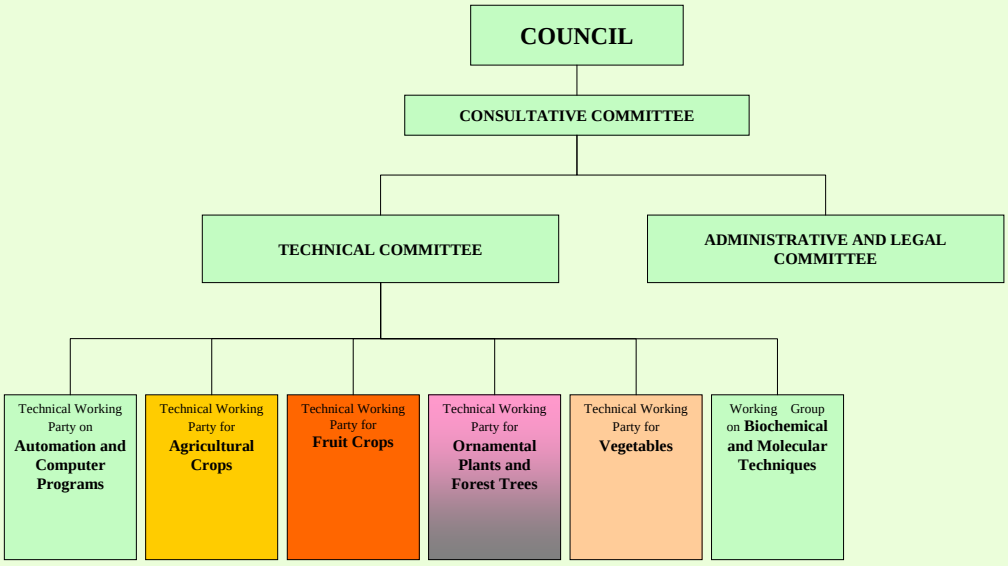
These guidelines should be read in conjunction with document TG/1/3, "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (hereinafter referred to as the "General Introduction") and its associated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

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

Test Guidelines

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

UPOV Structure



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TGP/7 "Development of Test Guidelines"

UPOV

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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1. Introduction

Purpose of document TGP/7:

♣to provide guidance on the development of **UPOV TEST GUIDELINES**

♣to provide guidance on the development of **INDIVIDUAL AUTHORITIES' TEST GUIDELINES**, in the absence of UPOV Test Guidelines

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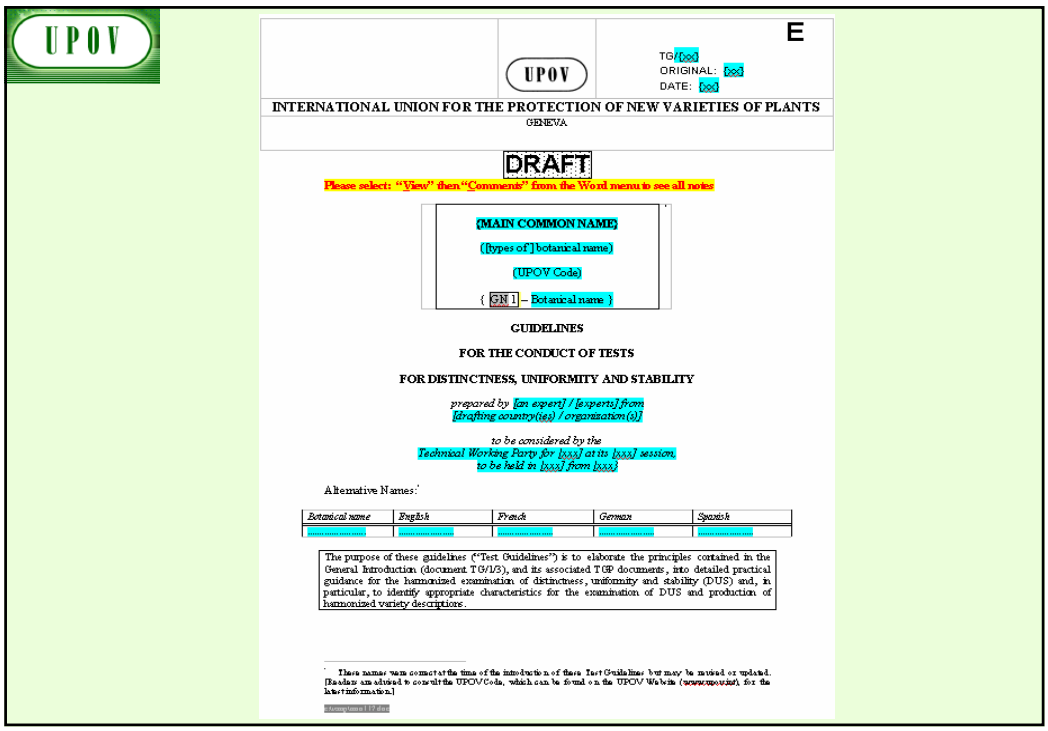
The TG Template

(Annex I of document TGP/7)

- Format of the cover page,
- Universal Standard wording of 10 Chapters,
- Format of the Table of Characteristic (Chapter 7),
- Format of the Technical Questionnaire (Chapter10)



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

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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

[MAIN COMMON NAME]

([types of] botanical name)

(UPOV Code)

{ GN 1 – 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]

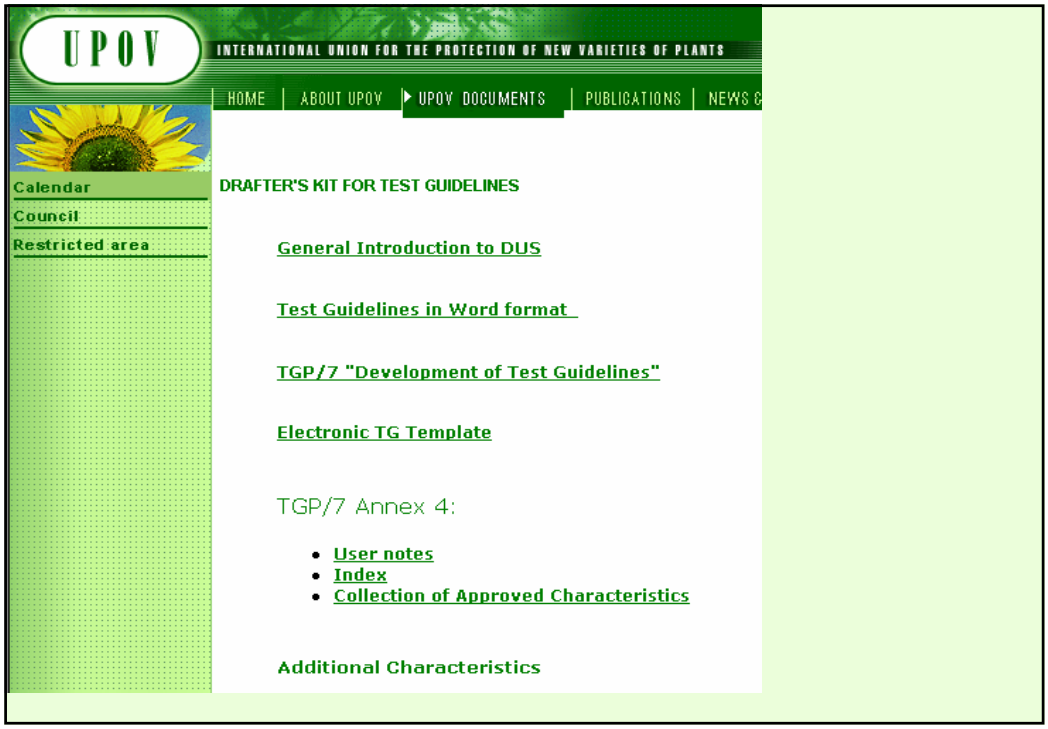
Alternative Names:

Botanical name	*English*	*French*	*German*	*Spanish*
.....	.....	.....	.....	.....

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.

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.]

[Document 1] [Year] [Month] [Date]



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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

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Calendar

Council

Restricted area

DRAFTER'S KIT FOR TEST GUIDELINES

General Introduction to DUS

Test Guidelines in Word format

TGP/7 "Development of Test Guidelines"

Electronic TG Template

TGP/7 Annex 4:

- User notes
- Index
- Collection of Approved Characteristics

Additional Characteristics

10 Chapters of UPOV Test Guidelines

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

Format of the Table of Characteristic

Char. No. (*) (+) (QL/QN/PQ)		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
{GN 18 Order of characteristics in the Table of Characteristics}		**{GN 24 Heading of a characteristic}**	**{GN 24 Heading of a characteristic}**	**{GN 24 Heading of a characteristic}**	**{GN 24 Heading of a characteristic}**		
{GN 19 Asterisked characteristics}	{GN 22 Recommendations for conducting the examination}	{GN 25 States of expression of a characteristic}	{GN 25 States of expression of a characteristic}	{GN 25 States of expression of a characteristic}	{GN 25 States of expression of a characteristic}	{GN 12 Example varieties}	{GN 26 Notes}
{GN 20 Explanation of the characteristic}	{GN 23 Growth stage}	{GN 25 States of expression of a characteristic}	{GN 25 States of expression of a characteristic}	{GN 25 States of expression of a characteristic}	{GN 25 States of expression of a characteristic}	{GN 12 Example varieties}	{GN 26 Notes}
{GN 21 Type of expression of the characteristic}	{Other}	{GN 25 States of expression of a characteristic}	{GN 25 States of expression of a characteristic}	{GN 25 States of expression of a characteristic}	{GN 25 States of expression of a characteristic}	{GN 12 Example varieties}	{GN 26 Notes}

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5. TEST GUIDELINES

(b) Guidance on drafting characteristics

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

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"CHARACTERISTICS"

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

Selection of Characteristics

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

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

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

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

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

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

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

Selection of Characteristics

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

Etc.

Selection of Characteristics

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

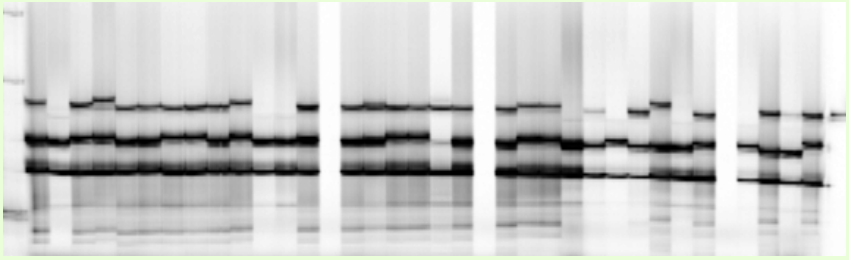
Selection of Characteristics

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

Special Characteristics: Disease Resistance

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

Molecular Techniques?



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

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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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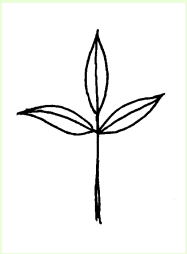
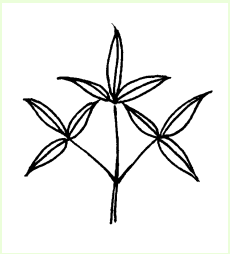
Clematis: Leaf: type

1
simple



2
ternate



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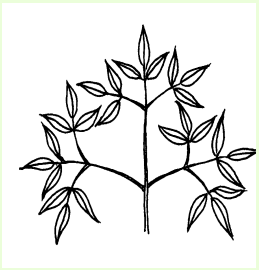

4
triternate

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Qualitative Characteristics

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

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

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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 Characteristics

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

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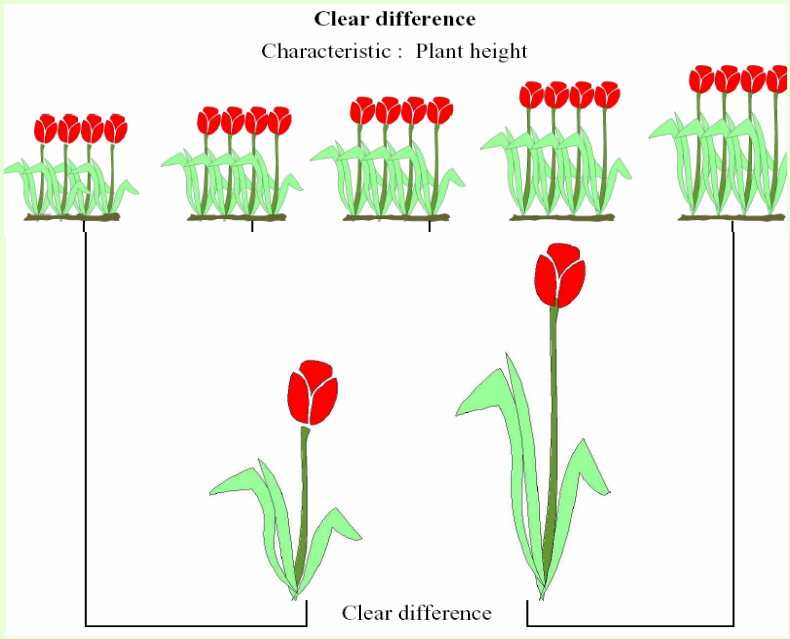
Clear difference
Characteristic : Plant height
Clear difference

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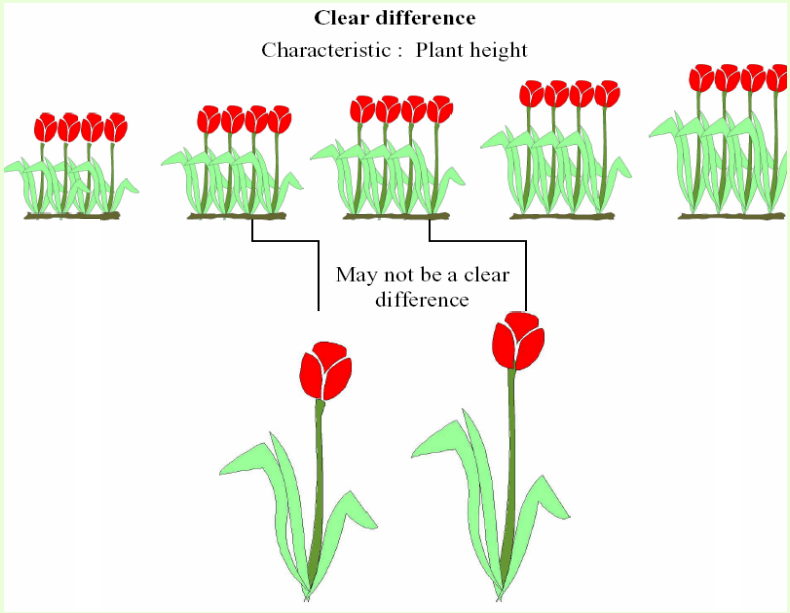
Clear difference
Characteristic : Plant height
May not be a clear difference

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Pseudo-Qualitative Characteristics

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

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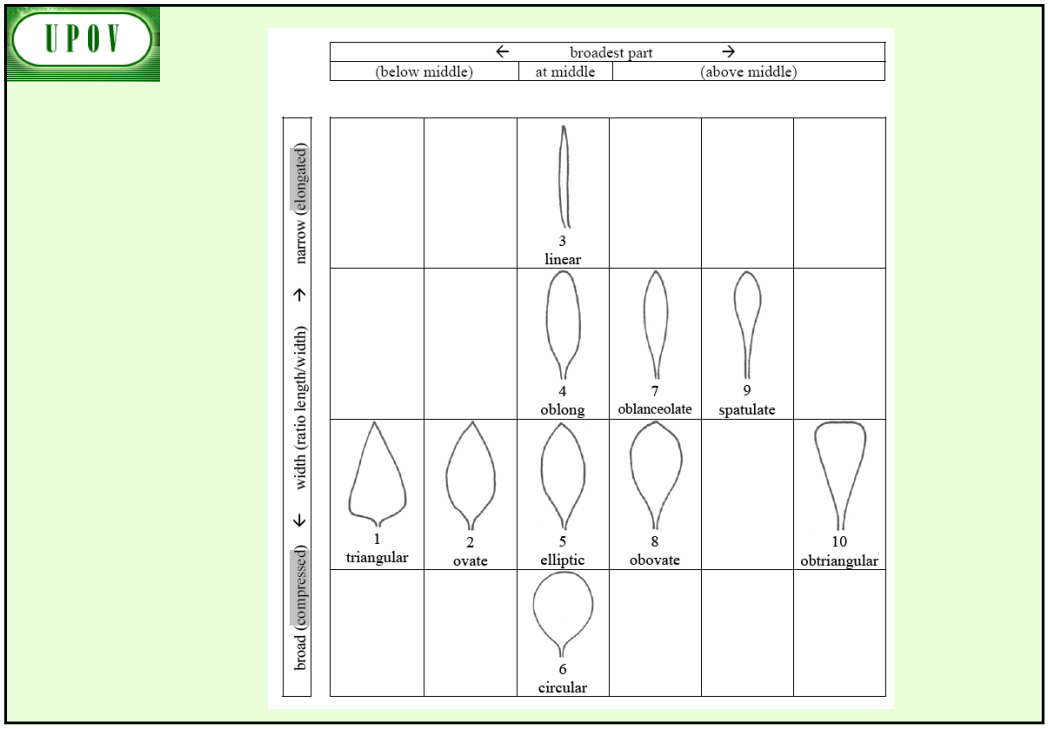
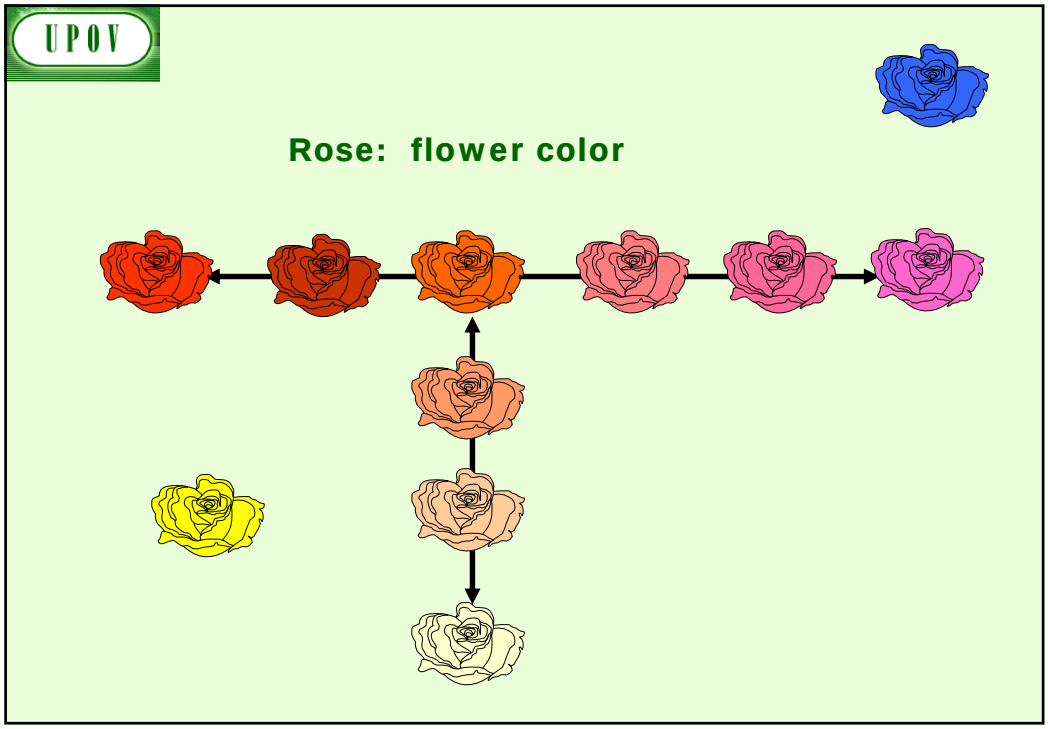
Example


broadest part
(below middle)
at middle
(above middle)
width (ratio length/width)
narrow (elongated)
broad (compressed)
1 triangular
2 ovate
3 linear
4 oblong
5 elliptic
6 circular
7 oblanceolate
8 obovate
9 spatulate
10 obtriangular


Rose: flower color

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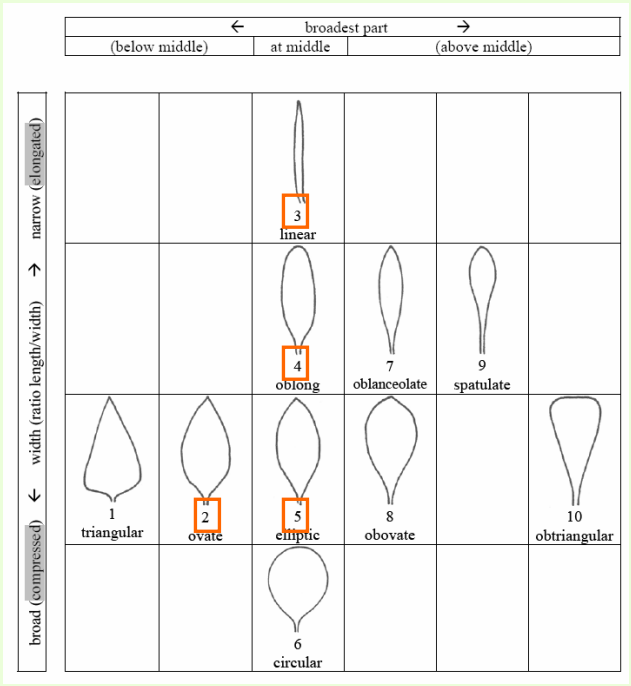
Pseudo-Qualitative Characteristics

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



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

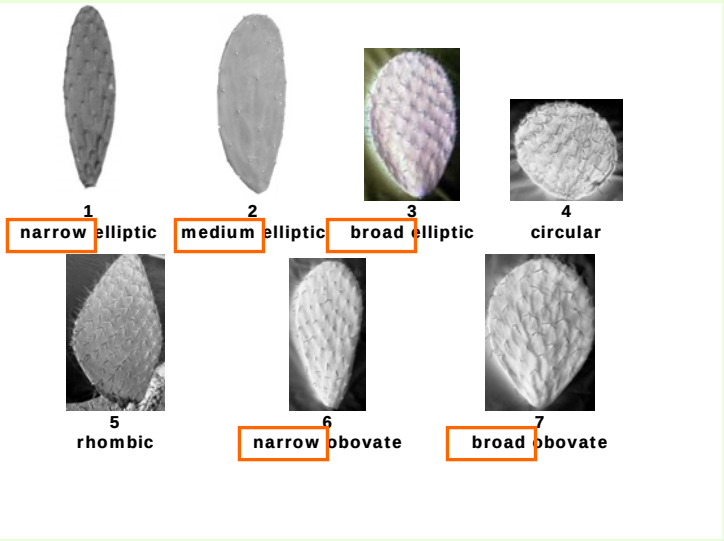
Example 2	
1	e.g. absent or weak *(absent or weakly expressed)*
2	moderate (or medium) *(moderately expressed)*
3	strong *(strongly expressed)*

Pseudo-qualitative Characteristics

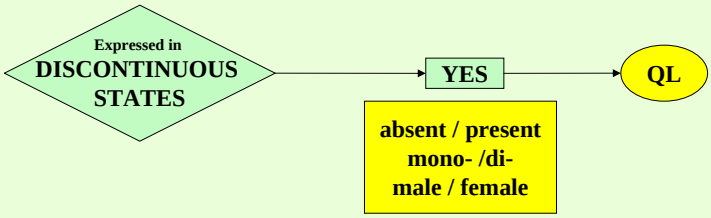
(typical examples)

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	purpurn	púrpura	6

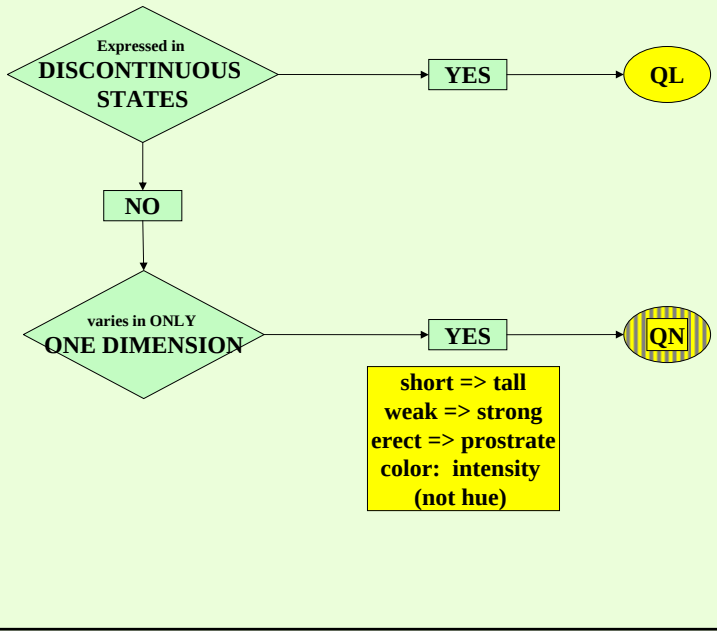
Opuntia: Shape of Cladode

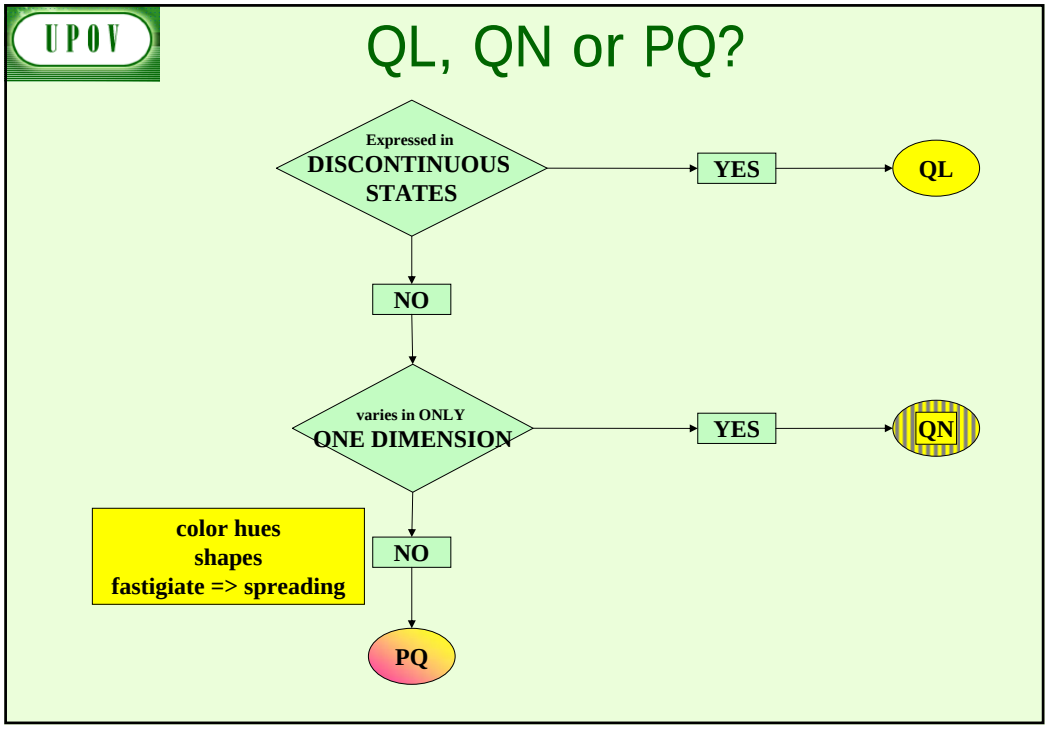


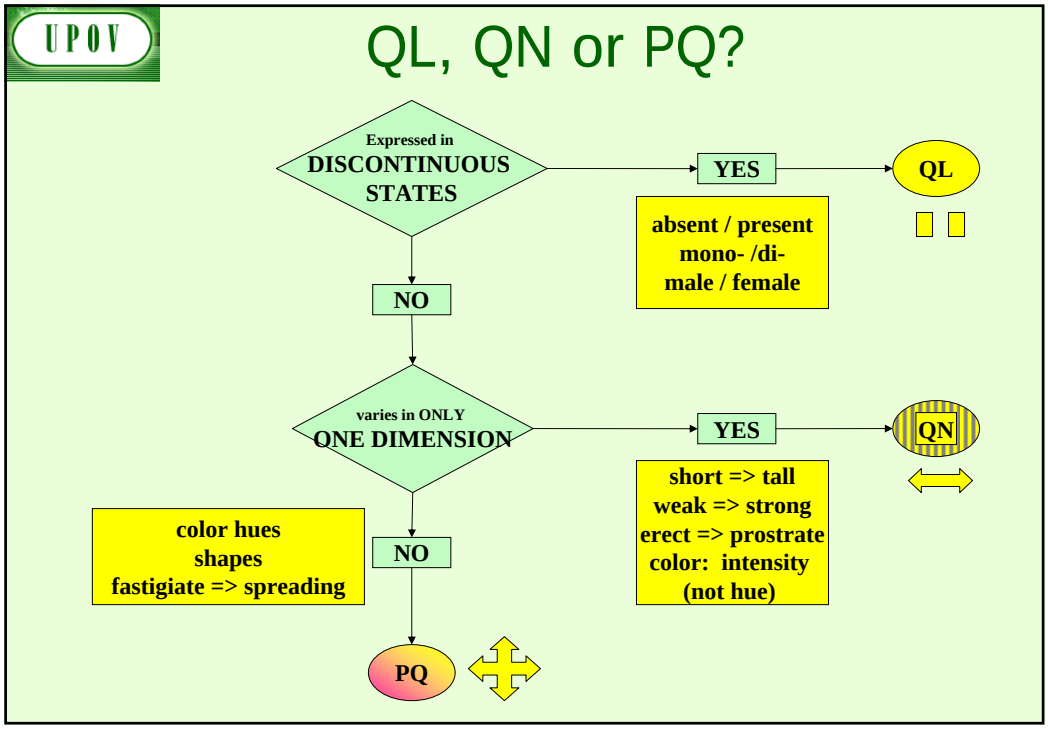
QL, QN or PQ?



QL, QN or PQ?




UPOV
QL, QN or PQ?
Expressed in
DISCONTINUOUS
STATES
YES
QL
NO
varies in ONLY
ONE DIMENSION
YES
QN
color hues
shapes
fastigiate => spreading
NO
PQ


UPOV
QL, QN or PQ?
Expressed in
DISCONTINUOUS
STATES
YES
QL
absent / present
mono- /di-
male / female
NO
varies in ONLY
ONE DIMENSION
YES
QN
short => tall
weak => strong
erect => prostrate
color: intensity
(not hue)
color hues
shapes
fastigiate => spreading
NO
PQ

UPOV

EXERCISE

UPOV

Types of Expression

QL: Qualitative

QN: Quantitative

PQ: Pseudo-qualitative

UPOV

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

UPOV

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

UPOV

3. Plant: rhizomes

absent	1
present	9

UPOV

4. Plant: growth habit

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

5.	**Leaf blade: ratio length/width**	
	very small	1
	small	3
	medium	5
	large	7
	very large	9

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

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

8.	**Leaf blade: shape of base**	
	acute	1
	obtuse	2
	truncate	3
	cordate	4

UPOV

9. Petal: color

RHS Colour Chart
(indicate reference number)

UPOV

10. Leaf blade: profile in cross section

straight or weakly concave	1
moderately concave	2
strongly concave	3

11.	**Flower: position of stigma relative to anthers**	
	below	1
	same level	2
	above	3

12.	**Petal: shape (excluding claw)**		
	broad elliptic	1	
	circular	2	
	oblate	3	

UPOV

5. TEST GUIDELINES (document TGP/7)

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

UPOV

Method of Observation

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

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

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

Type of Record

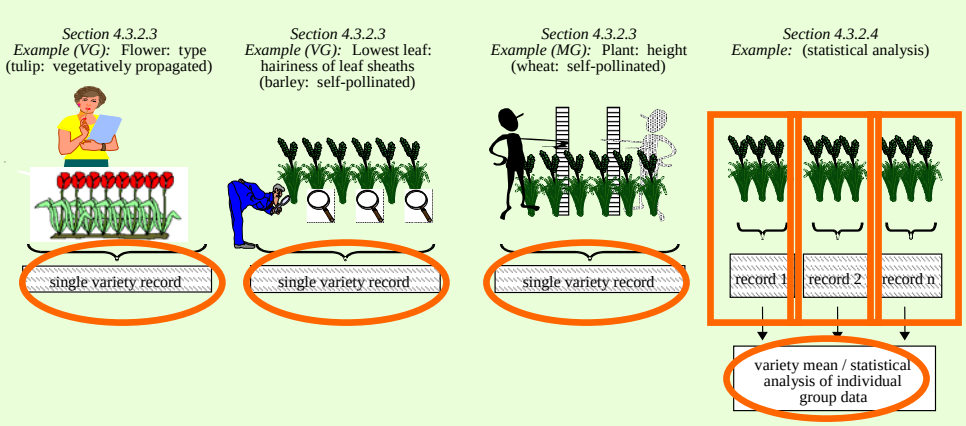
(for the purposes of distinctness)

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

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

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

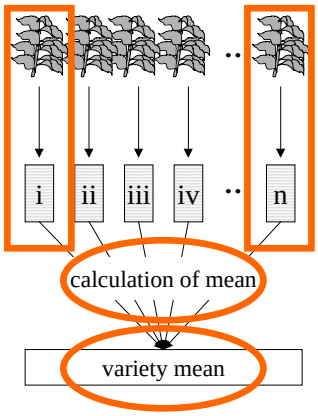
Single record for a group of plants or parts of plants (G)



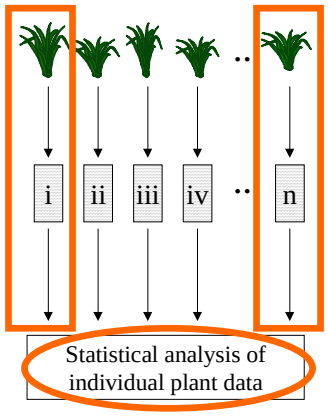
UPOV

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)



UPOV

5. TEST GUIDELINES (document TGP/7)

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

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

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

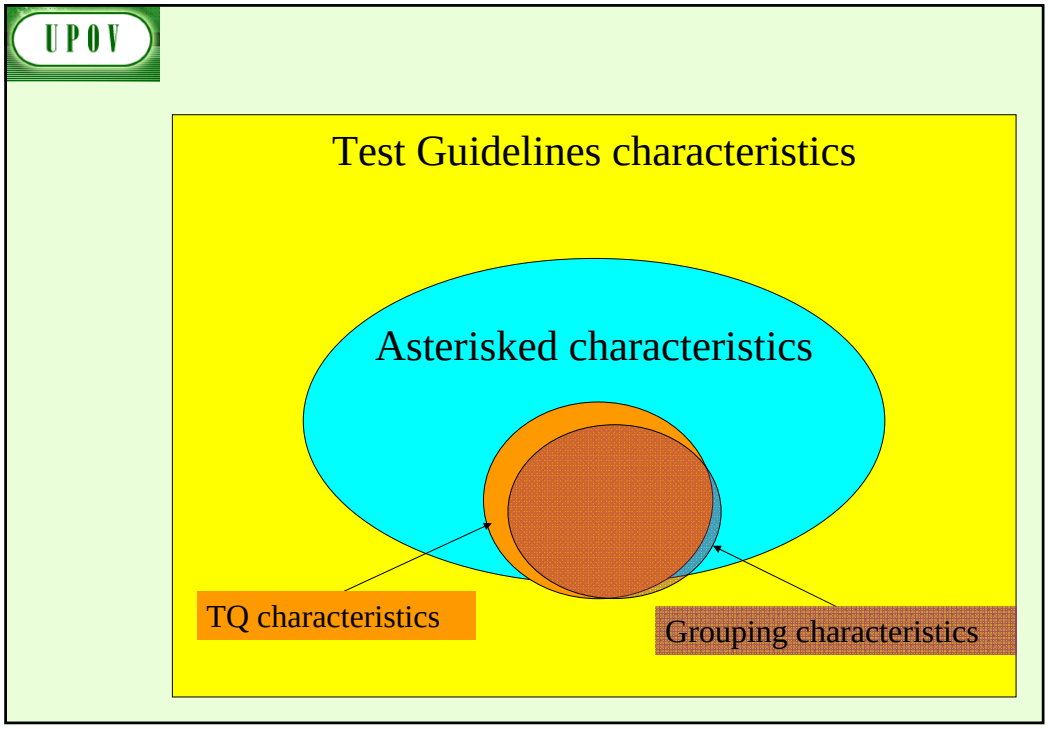
Function	Criteria
characteristics in which the **documented states of expression**, even where recorded **at different locations**, can be used either individually or in combination with other such characteristics: **(a) to select varieties of common knowledge that can be excluded from the growing trial** used for examination of distinctness, and/or **(b) 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.

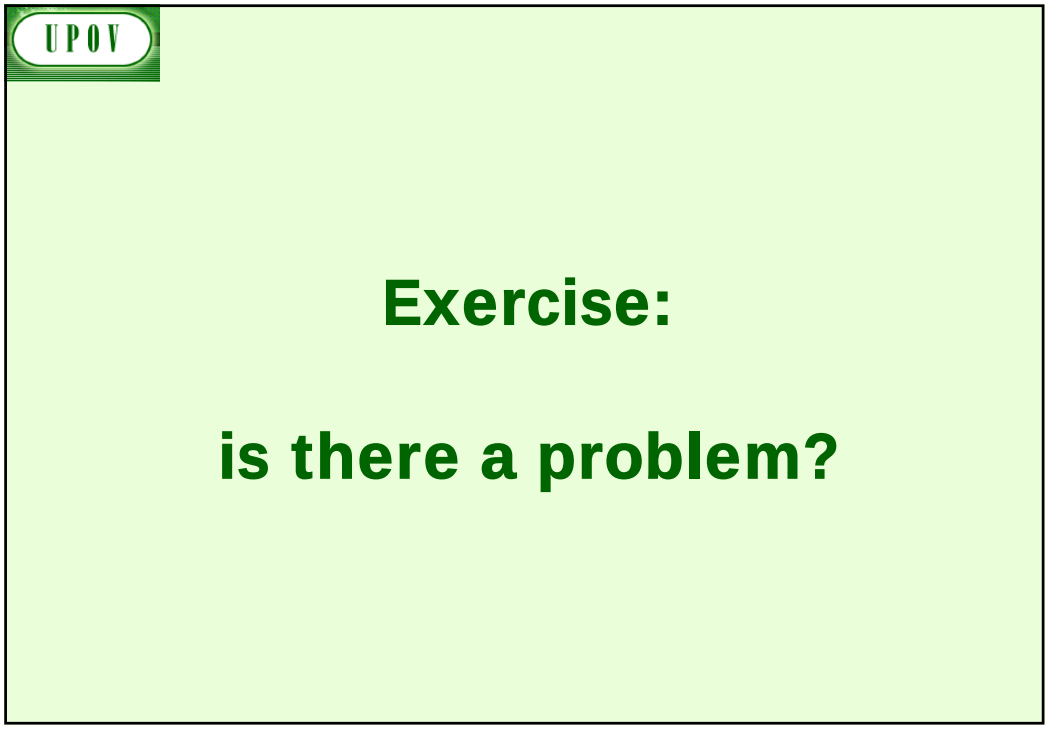
Relationship between functions

(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**.

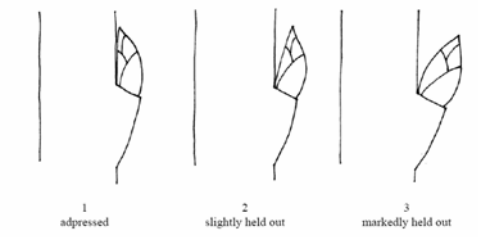

UPOV
Test Guidelines characteristics
Asterisked characteristics
TQ characteristics
Grouping characteristics


UPOV
Exercise:
is there a problem?

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

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

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



4.	**Leaf blade: texture**	
PQ	soft	1
	coriaceous	2

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

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

UPOV

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

UPOV

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

UPOV

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

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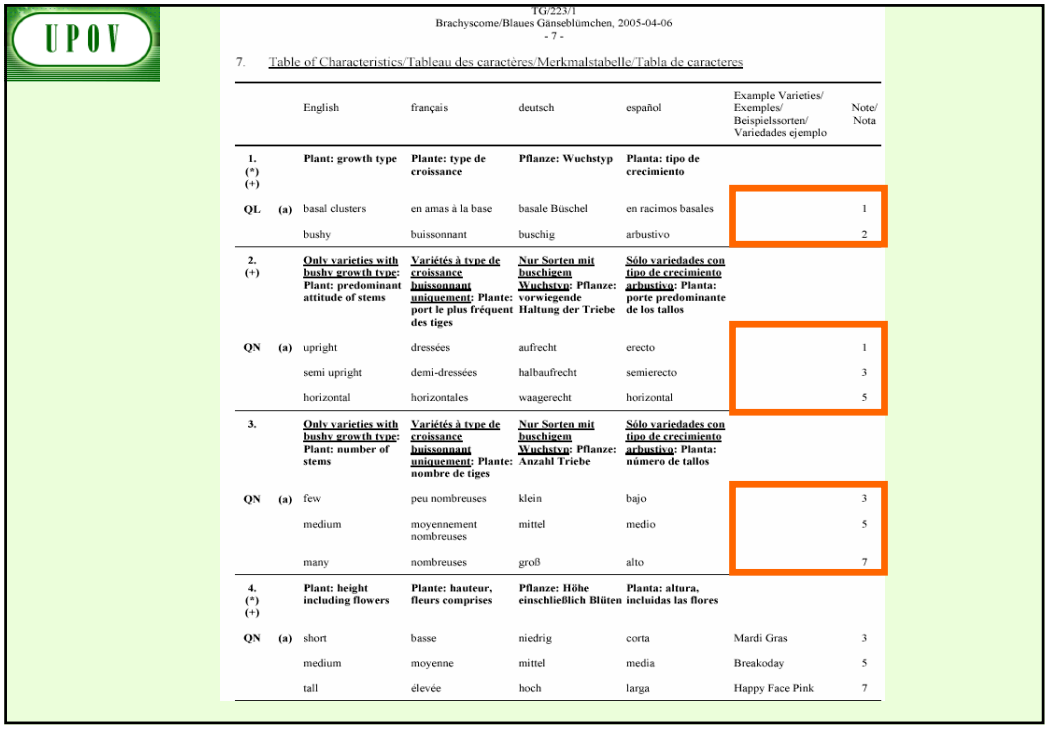
5. TEST GUIDELINES (document TGP/7)

(e) Example varieties

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

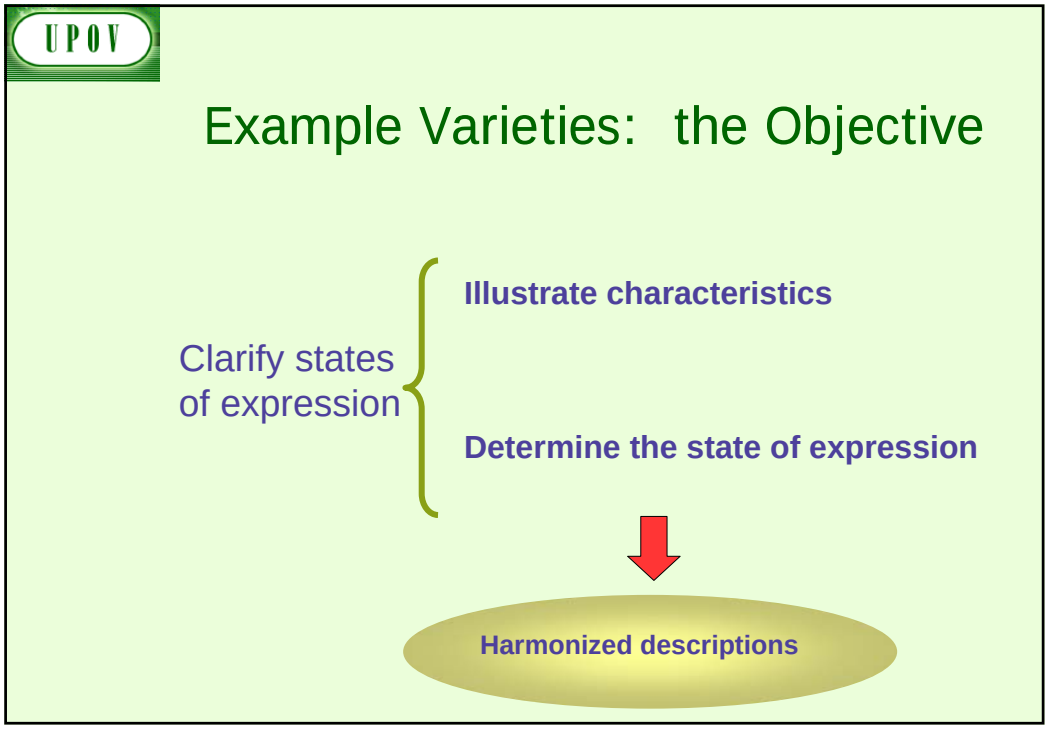
		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
14.	**VG**	**Leaf blade: intensity of purplish color of lower side**	**Limbe: intensité de la couleur pourpre de la face inférieure**	**Blattspreite: Intensität der Purpurfarbe der Unterseite**	**Limbo: intensidad del color purpúreo del envés**		
QN	**(a)**	very light	très claire	sehr hell	muy claro		1
		light	claire	hell	claro	Perlime	3
		medium	moyenne	mittel	medio		5
		dark	foncée	dunkel	oscuro	Perro	7
		very dark	très foncée	sehr dunkel	muy oscuro	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



TG/223/1
Brachyscome/Blaues Gänseblümchen, 2005-04-06
- 7 -

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

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ 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 Wuchstyp: 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 Wuchstyp: Pflanze: Anzahl Triebe**	**Sólo variedades con tipo de crecimiento arbustivo: Planta: número de tallos**		
QN	**(a)**	few	peu nombreuses	klein	bajo		3
		medium	moyennement nombreuses	mittel	medio		5
		many	nombreuses	groß	alto		7
4. (*) (+)		**Plant: height including flowers**	**Plante: hauteur, fleurs comprises**	**Pflanze: Höhe einschließlich Blüten**	**Planta: altura, incluidas las flores**		
QN	**(a)**	short	basse	niedrig	corta	Mardi Gras	3
		medium	moyenne	mittel	media	Breakoday	5
		tall	élevée	hoch	larga	Happy Face Pink	7



Example Varieties: the Objective

Clarify states of expression

- **Illustrate characteristics**
- **Determine the state of expression**

→ **Harmonized descriptions**

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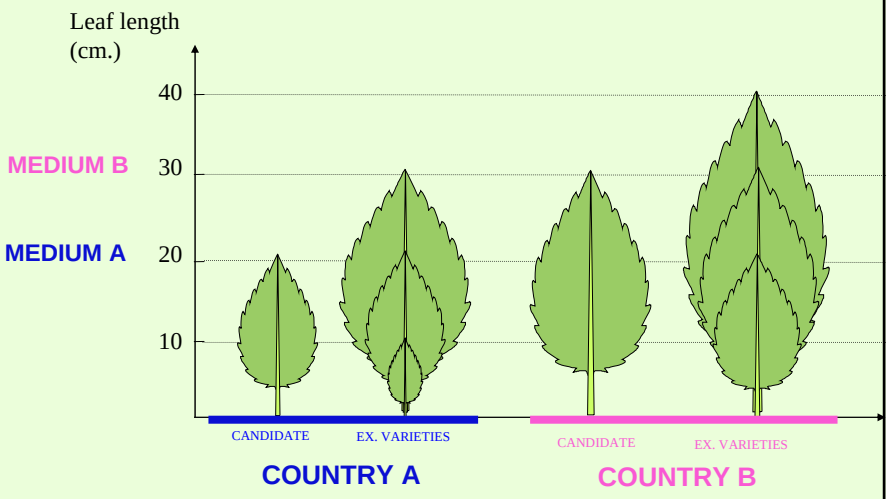
Example Varieties versus Measurements



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Example Varieties –the need

NO NEED

- **illustration** provided (e.g. photo); if necessary **and**
- characteristics **not** used to **harmonize descriptions** **or**
- characteristics **not influenced by the environment**

Example Varieties – the need

NEED

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

Example Varieties - availability

widely and freely available

- National Authority
- DUS examiners
- Breeders

Example Varieties within the collection

must show the range of expression in the collection

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

Example Varieties Fluctuation

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

Example Varieties number

All desired characteristics covered with the minimum number of example varieties

Example Varieties - agreement

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

Accepted if no objections are presented

UPOV

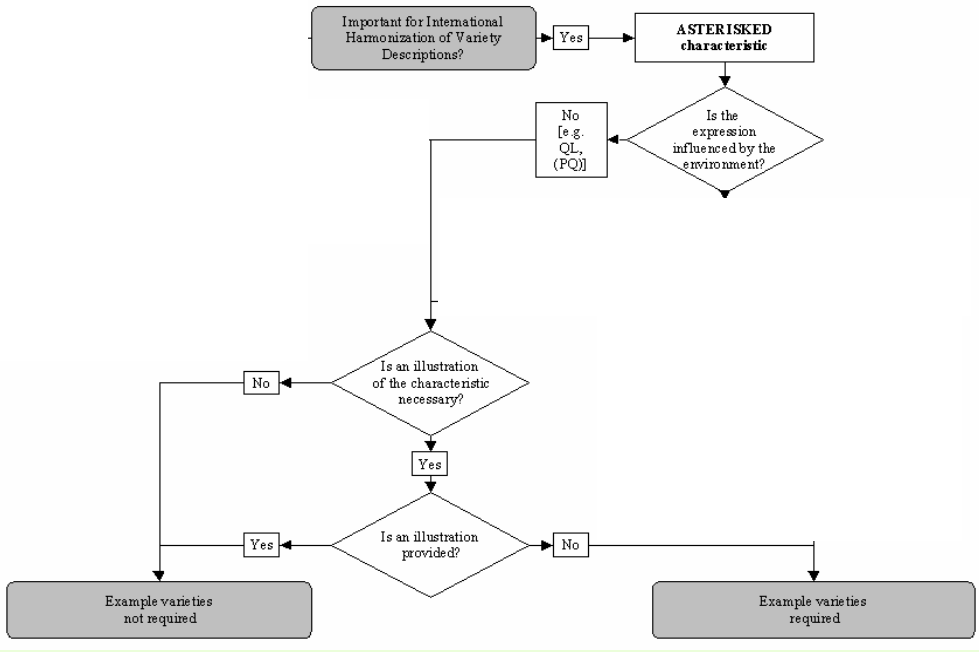
Example Varieties - multiple sets

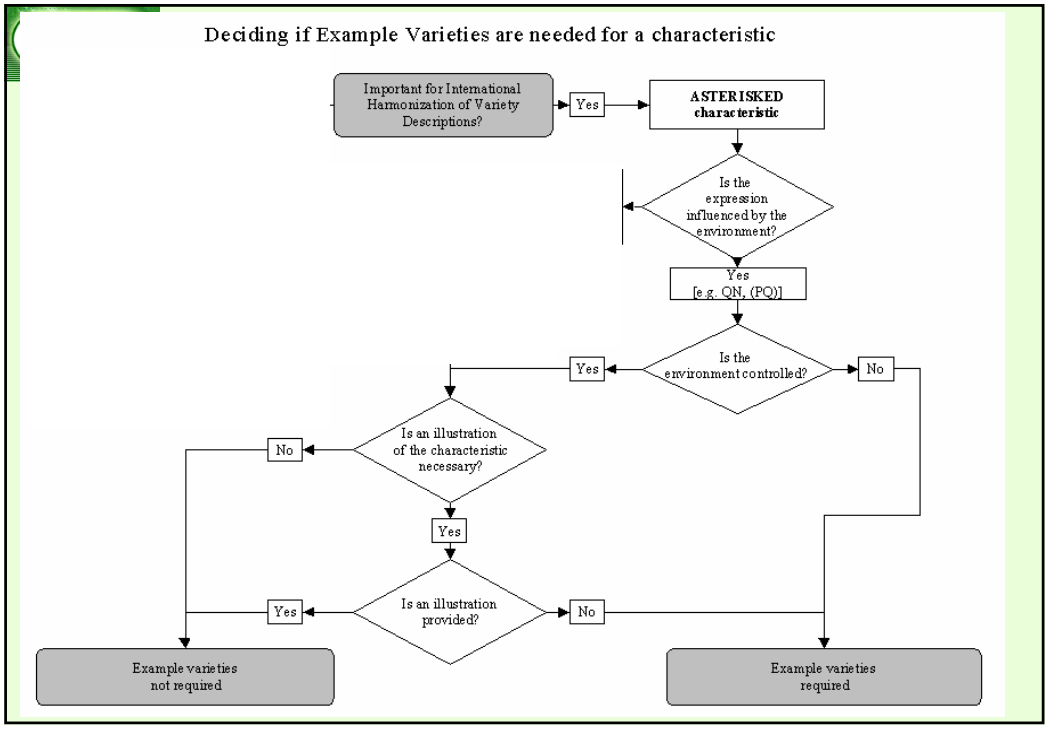
Regional Sets

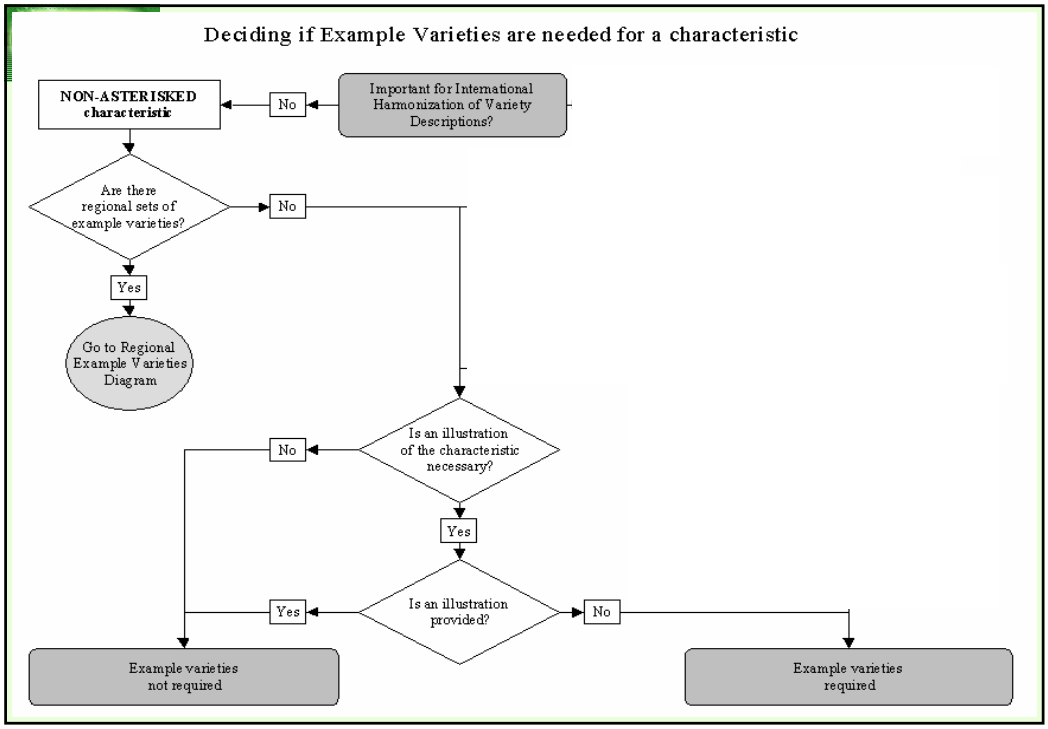
Different types

clear criteria for creating the sets !

Deciding if Example Varieties are needed for a characteristic




Deciding if Example Varieties are needed for a characteristic
Important for International Harmonization of Variety Descriptions?
Yes
ASTERISKED characteristic
Is the expression influenced by the environment?
Yes [e.g. QN, (PQ)]
Is the environment controlled?
Yes
No
Is an illustration of the characteristic necessary?
No
Yes
Is an illustration provided?
Yes
No
Example varieties not required
Example varieties required


Deciding if Example Varieties are needed for a characteristic
NON-ASTERISKED characteristic
No
Important for International Harmonization of Variety Descriptions?
Are there regional sets of example varieties?
No
Yes
Go to Regional Example Varieties Diagram
Is an illustration of the characteristic necessary?
No
Yes
Is an illustration provided?
Yes
No
Example varieties not required
Example varieties required

UPOV

Exercise

UPOV

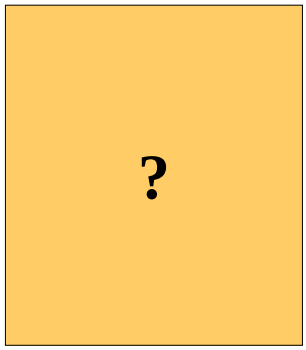
		English	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
4. (*) (+)		**Plant: height including flowers**		
QN	**(a)**	short	**?**	3
		medium		5
		tall		7

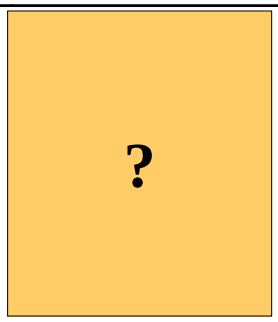
UPOV

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

UPOV

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

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

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

UPOV

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

UPOV

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

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

5. TEST GUIDELINES (document TGP/7)

(f) The process for developing UPOV Test Guidelines

UPOV

Test Guidelines

- **249 Test Guidelines** adopted

but...

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

UPOV

GENIE Database

(**Gen**us / spec**ie**s)

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)

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**

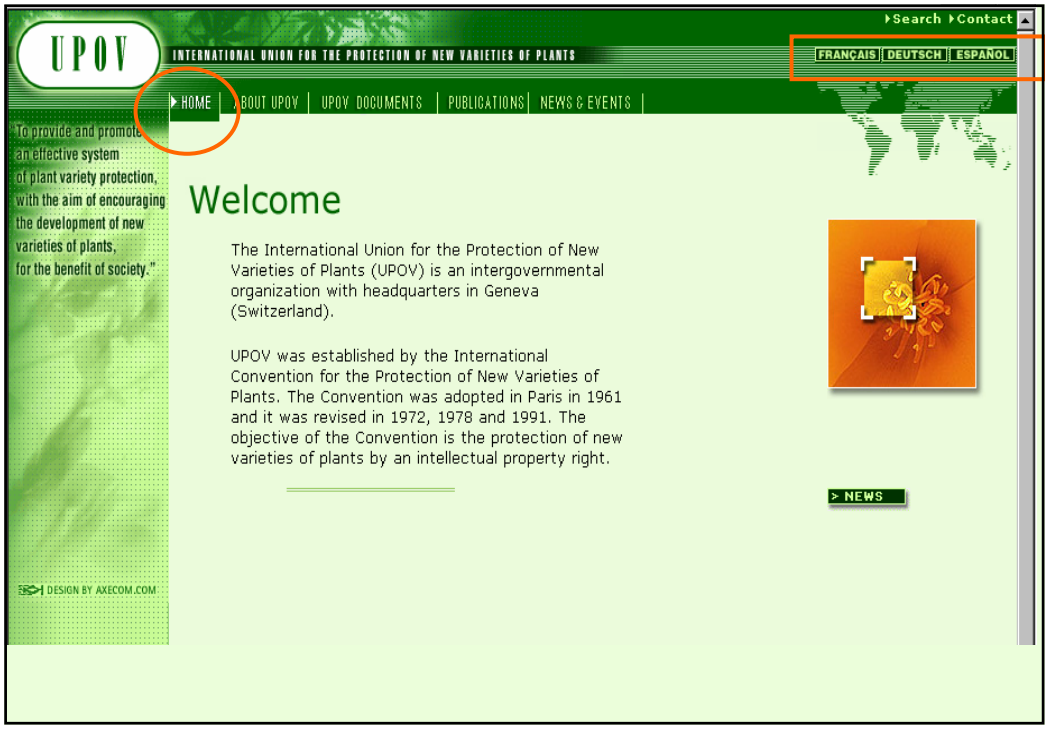
6. THE UPOV WEBSITE

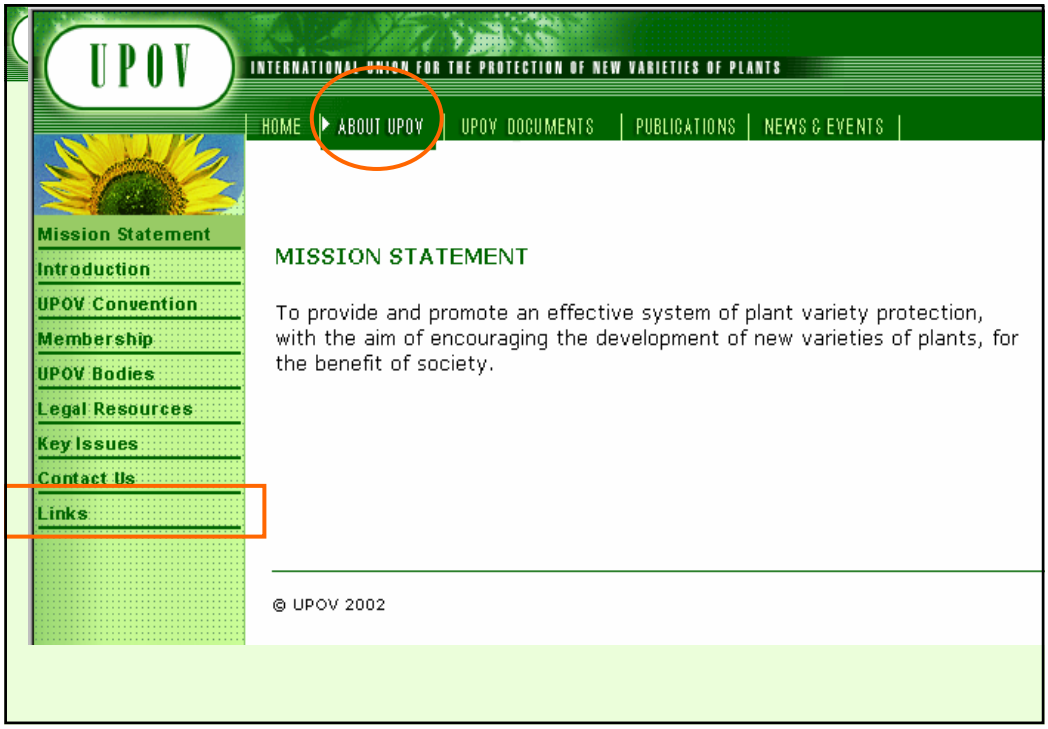
UPOV

UPOV Website

http://www.upov.int

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

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MISSION STATEMENT
To provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.
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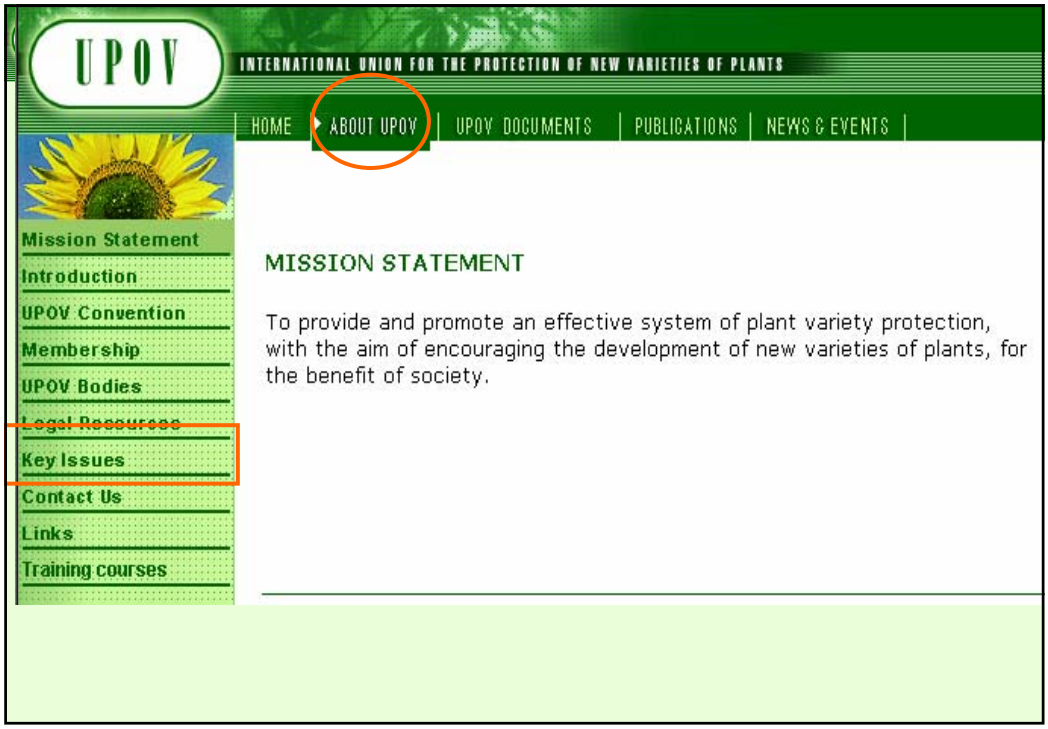
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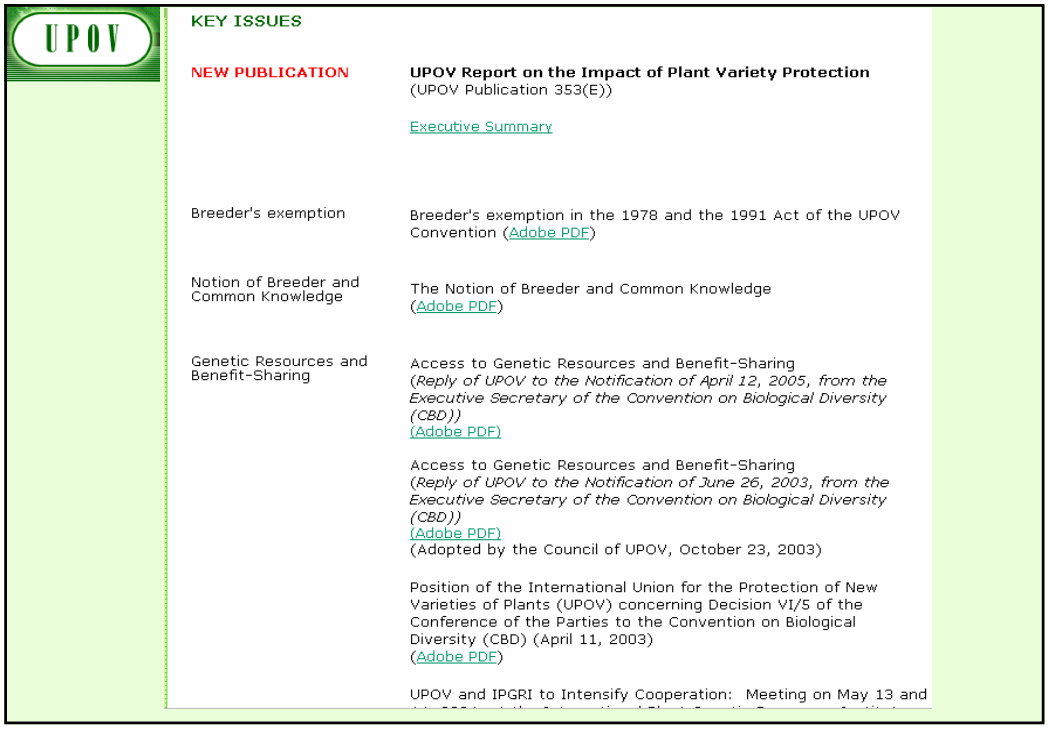
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(UPOV Publication 353(E))
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Breeder's exemption in the 1978 and the 1991 Act of the UPOV Convention (Adobe PDF)
Notion of Breeder and Common Knowledge
The Notion of Breeder and Common Knowledge
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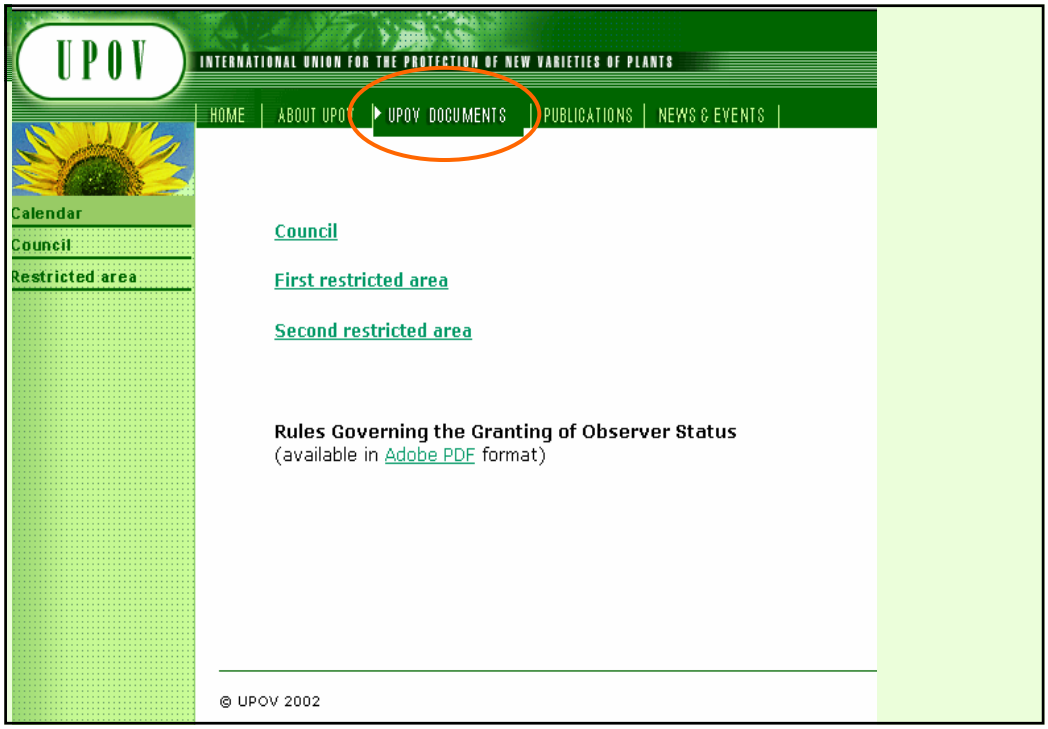
Genetic Resources and Benefit-Sharing
Access to Genetic Resources and Benefit-Sharing
(Reply of UPOV to the Notification of April 12, 2005, from the Executive Secretary of the Convention on Biological Diversity (CBD))
(Adobe PDF)
Access to Genetic Resources and Benefit-Sharing
(Reply of UPOV to the Notification of June 26, 2003, from the Executive Secretary of the Convention on Biological Diversity (CBD))
(Adobe PDF)
(Adopted by the Council of UPOV, October 23, 2003)
Position of the International Union for the Protection of New Varieties of Plants (UPOV) concerning Decision VI/5 of the Conference of the Parties to the Convention on Biological Diversity (CBD) (April 11, 2003)
(Adobe PDF)
UPOV and IPGRI to Intensify Cooperation: Meeting on May 13 and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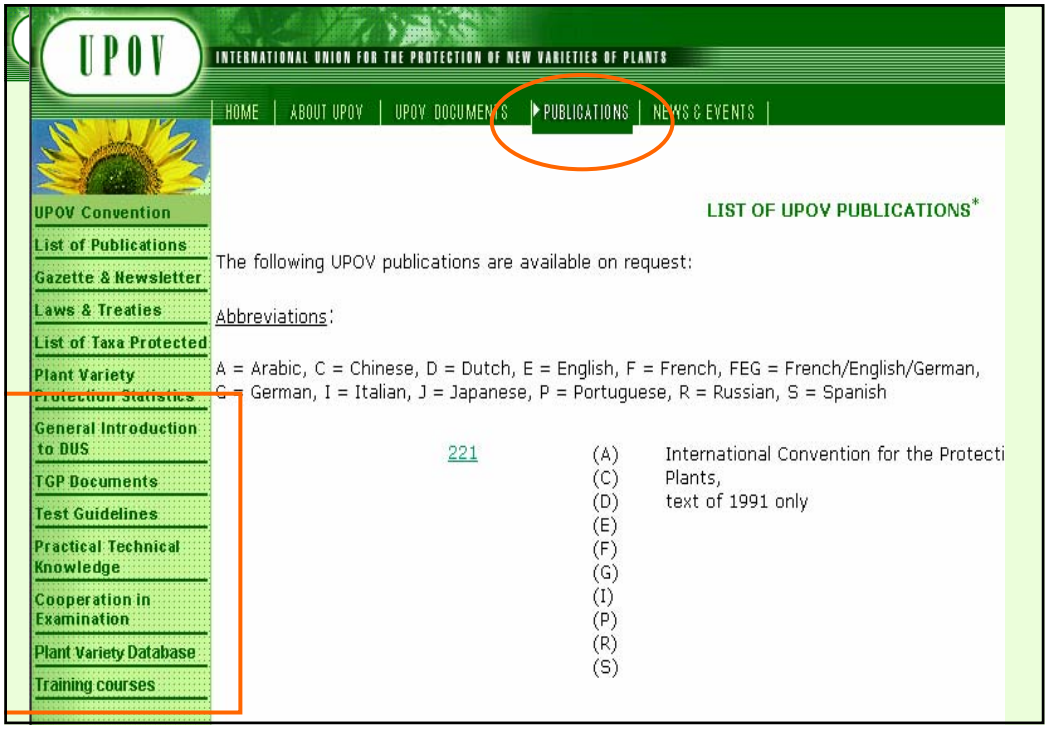
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LIST OF UPOV PUBLICATIONS*
The following UPOV publications are available on request:
Abbreviations:
A = Arabic, C = Chinese, D = Dutch, E = English, F = French, FEG = French/English/German,
G = German, I = Italian, J = Japanese, P = Portuguese, R = Russian, S = Spanish
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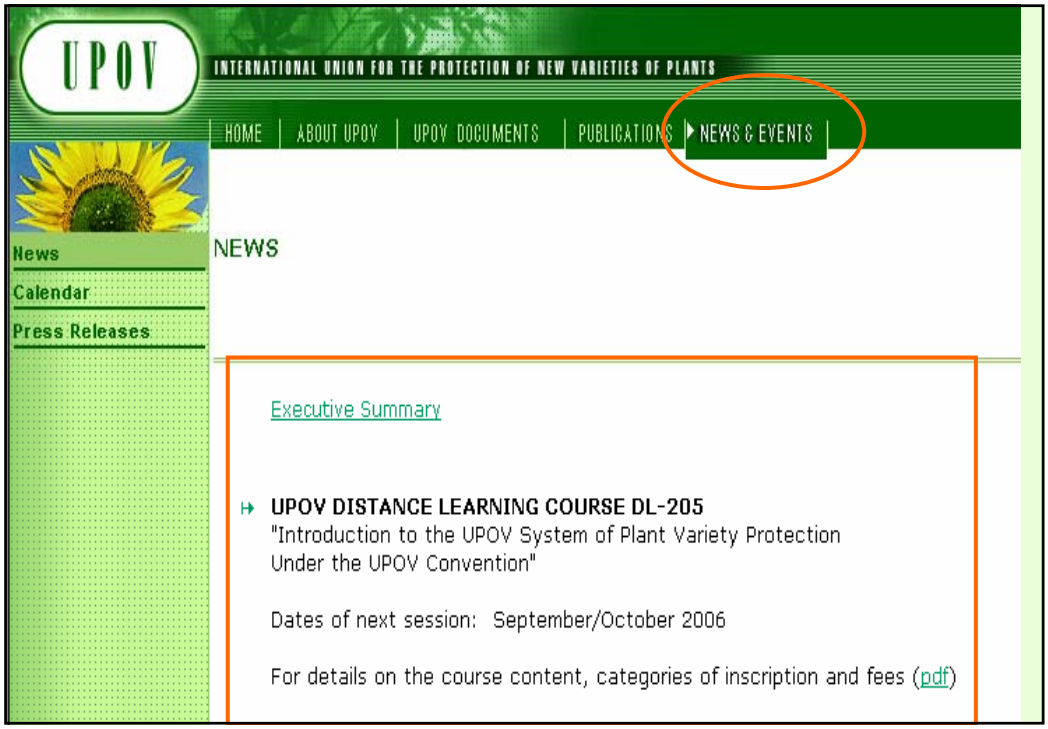
text of 1991 only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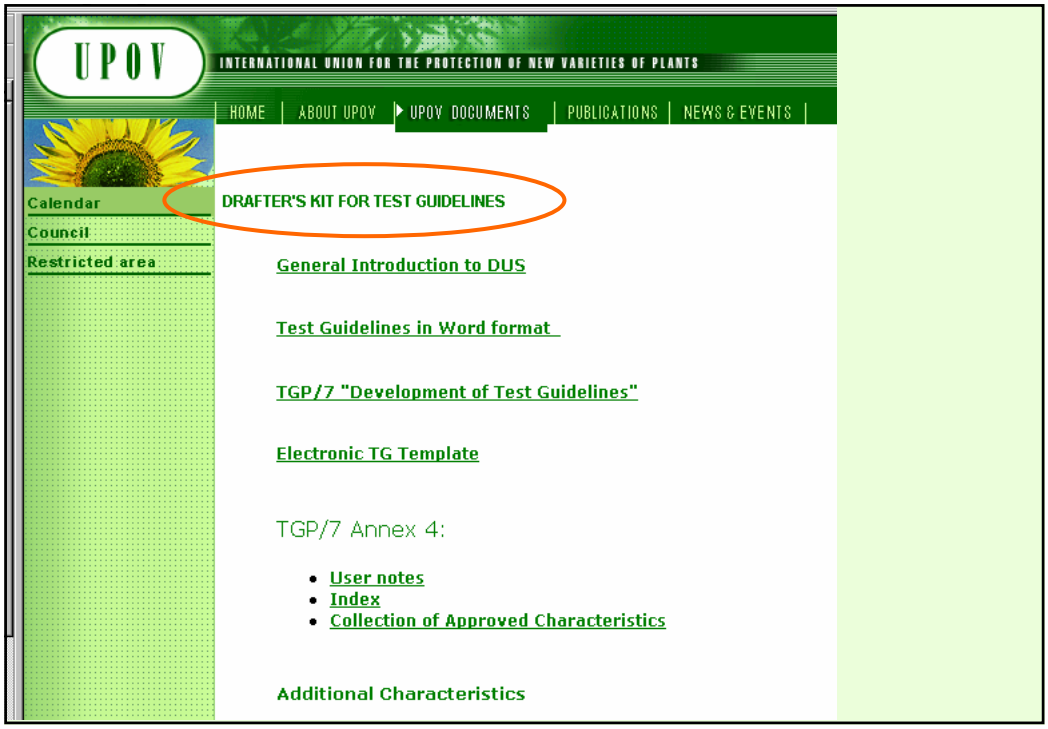
UPOV DISTANCE LEARNING COURSE DL-205
"Introduction to the UPOV System of Plant Variety Protection
Under the UPOV Convention"
Dates of next session: September/October 2006
For details on the course content, categories of inscription and fees (pdf)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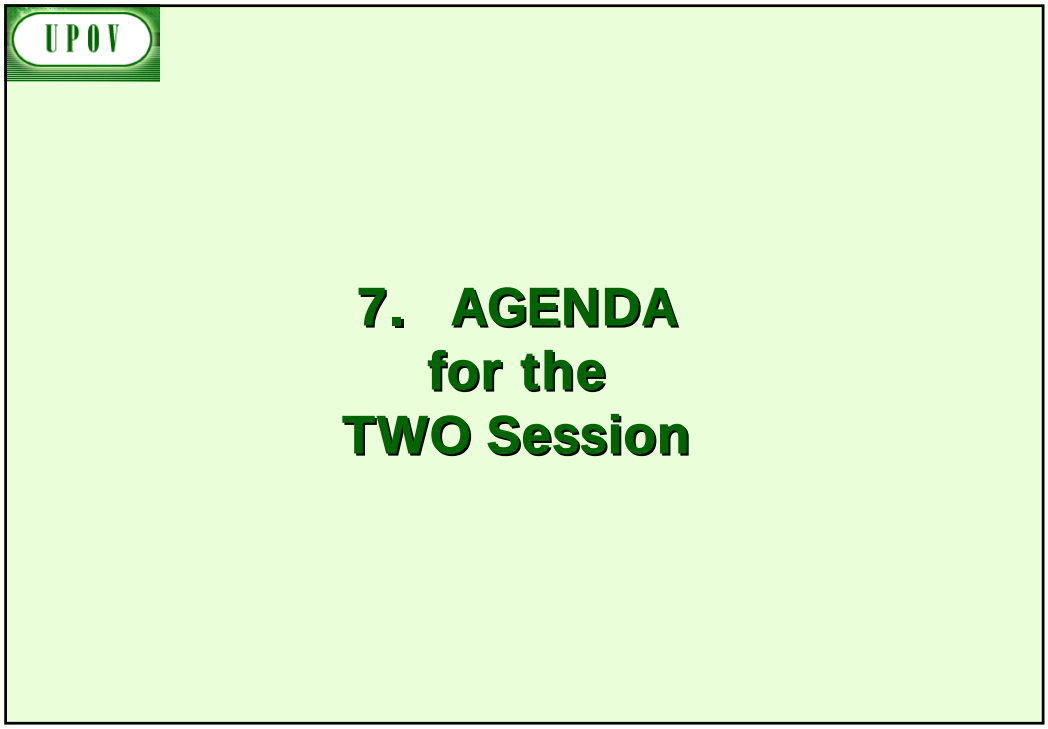
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7. AGENDA
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TWO Session

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THANK YOU