



BMT-TWA/Maize/2/10

ORIGINAL: English

DATE: November 29, 2007

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**AD HOC CROP SUBGROUP ON MOLECULAR TECHNIQUES
FOR MAIZE**


Second Session

Chicago, United States of America, December 3, 2007

OVERVIEW OF GUIDANCE FOR DUS EXAMINATION


document prepared by the Office of the Union

Slide 1



OVERVIEW OF
GUIDANCE
FOR DUS EXAMINATION

Slide 2



Guidance for 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)

Slide 3

UPOV

Guidance for Examination

General Principles for DUS Testing

Practical Guidance

TG/1/3
ORIGINAL: English
DATE: April 19, 2002

UPOV

General Introduction

TGP/

UPOV

Associated TGP Documents

TG/2/7

UPOV

MAIZE
UPOV Code: ZEAAA_MAY
Zea mays L.

TEST GUIDELINES FOR THE CONDUCT OF DUS TESTS

"TEST GUIDELINES"

Slide 4

UPOV

Guidance for Examination

General Principles for DUS Testing

TG/1/3
ORIGINAL: English
DATE: April 19, 2002

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General Introduction

TGP/

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Associated TGP Documents

The "General Introduction" (TG/1/3)

- General technical principles
- Organization of DUS Testing
- Associated "TGP" Documents

Slide 5

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Guidance for Examination

General Principles for DUS Testing

TG/1/3
ORIGINAL: English
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General Introduction

REQUIREMENTS FOR A CHARACTERISTIC

- (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
- (d) is capable of precise definition and recognition
- (e) allows uniformity requirements to be fulfilled
- (f) allows stability requirements to be fulfilled

Slide 6

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Guidance for Examination

Practical Guidance

- growing cycles of testing (usually one or two)
- number of plants (6 to 600)
- material to be tested
- characteristics (around 30-100)
- example varieties
- uniformity standards
- TQ

TG/2/7

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MAIZE
UPOV Code: ZEAAA_MAY
Zea mays L.

**TEST GUIDELINES
FOR THE CONDUCT OF
DUS TESTS**

"TEST GUIDELINES"

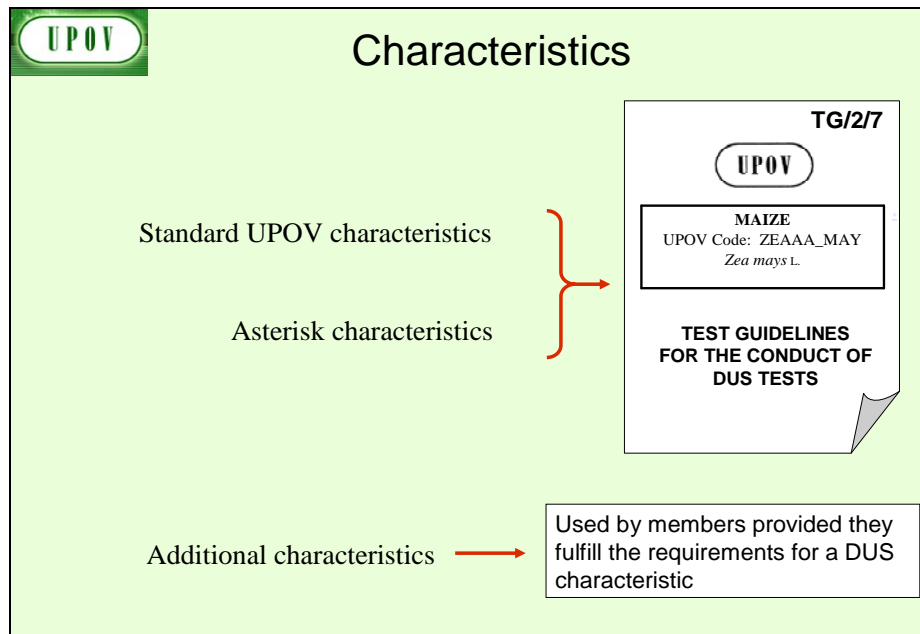
Slide 7

UPOV		
Characteristics		
Type	Function	Criteria
Standard Test Guidelines Characteristic	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.	<ol style="list-style-type: none"> 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.

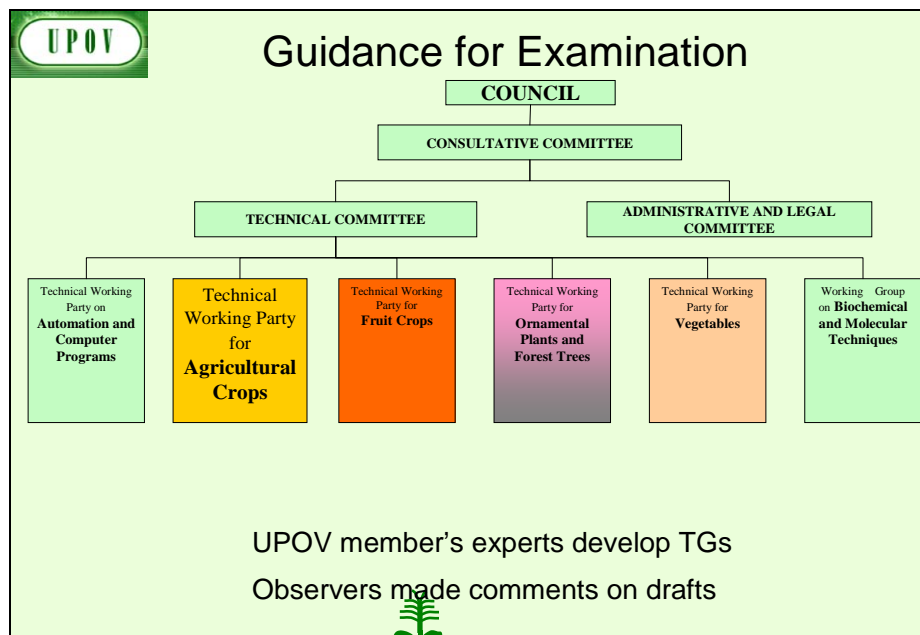
Slide 8

UPOV		
Characteristics		
Type	Function	Criteria
Asterisked Characteristic	1. Characteristics that are important for the international harmonization of variety descriptions.	<ol style="list-style-type: none"> 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.

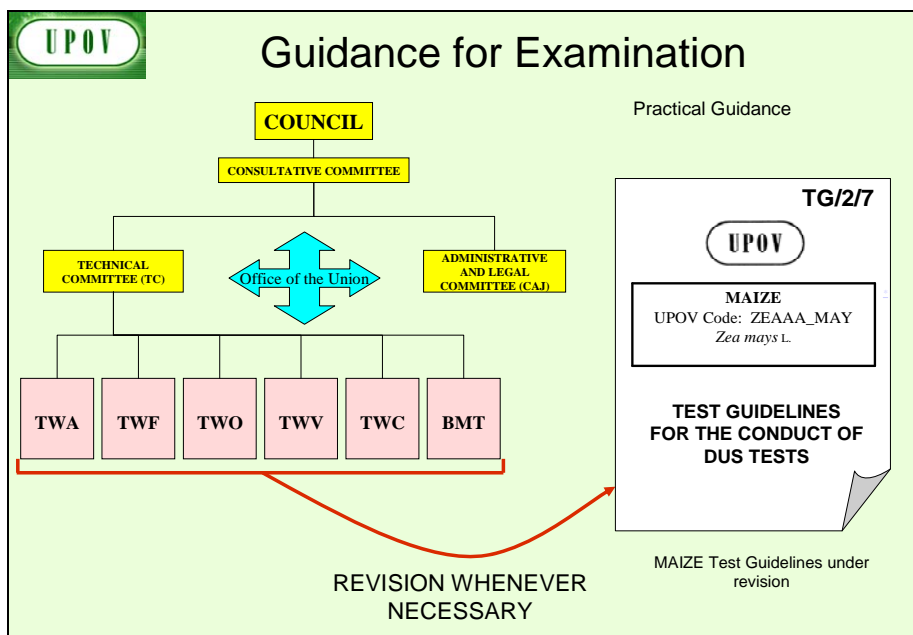
Slide 9



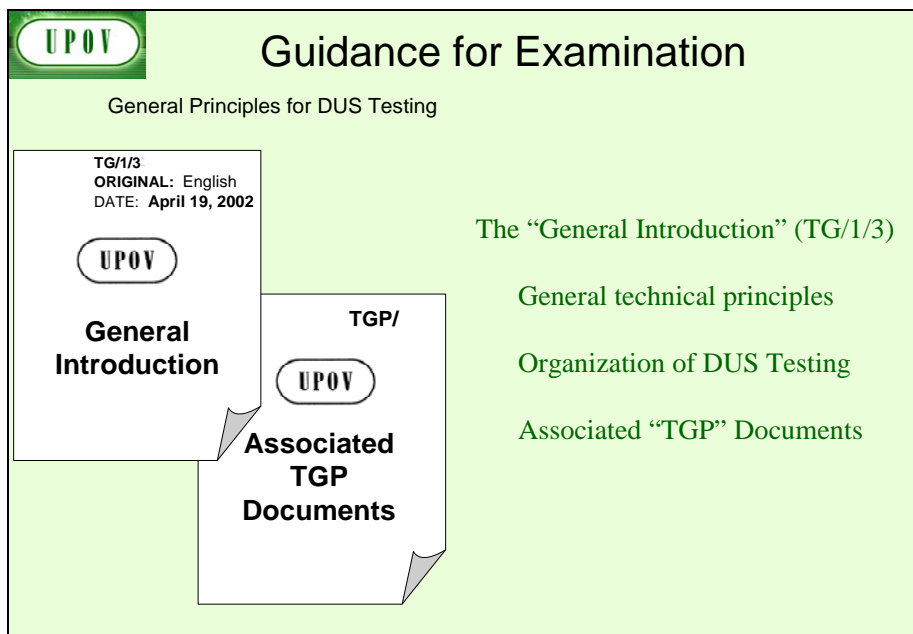
Slide 10




Slide 11



Slide 12



Slide 13




Guidance for Examination

Test Guidelines

237 Test Guidelines adopted

> 2500 genera and species protected

Slide 14



UPOV INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

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

LIST OF UPOV PUBLICATIONS*

The following UPOV publications are available on request:

Abbreviations:

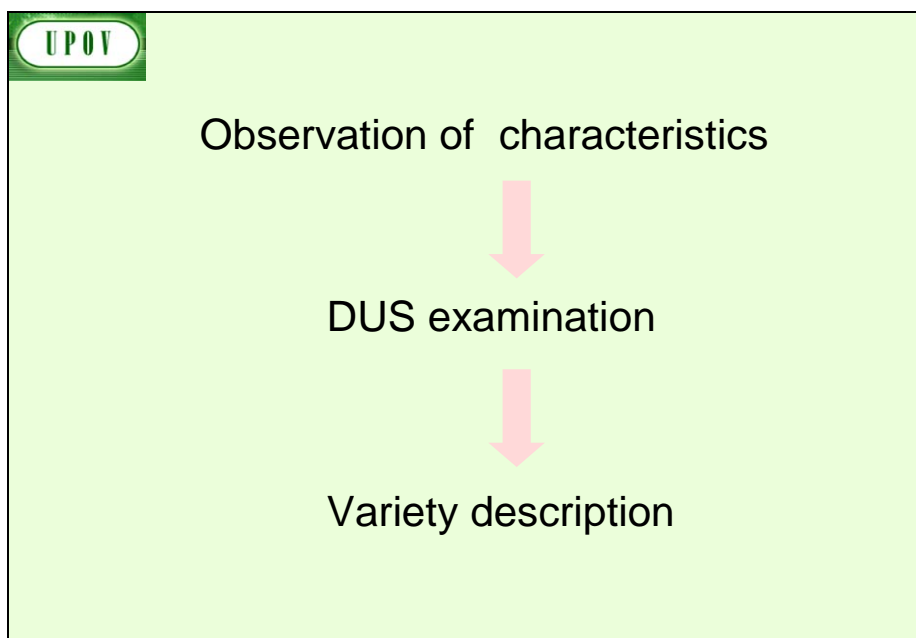
A = Arabic, C = Chinese, D = Dutch, E = English, F = French, FEG = French/English/German, G = German, I = Italian, J = Japanese, P = Portuguese, R = Russian, S = Spanish

221	(A)	International Convention for the Protection of
	(C)	Plants,
	(D)	text of 1991 only
	(E)	
	(F)	
	(G)	
	(I)	
	(P)	
	(R)	
	(S)	

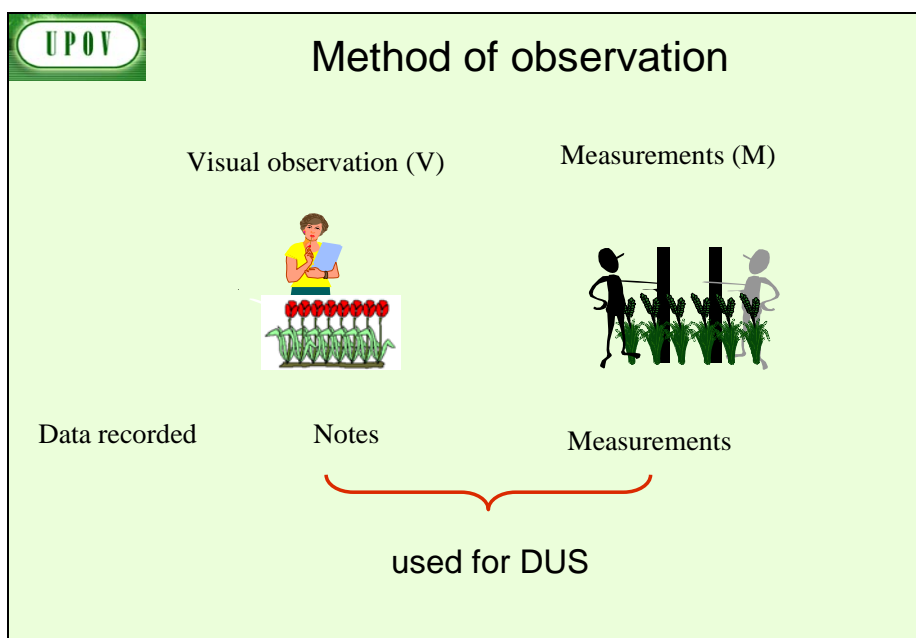
UPOV Convention

- List of Publications
- Gazette & Newsletter
- Laws & Treaties
- List of Taxa Protected
- Plant Variety
- Protection Statistics
- General Introduction to DUS
- TGP Documents
- Test Guidelines
- Practical Technical Knowledge
- Cooperation in Examination
- Plant Variety Database
- Training courses

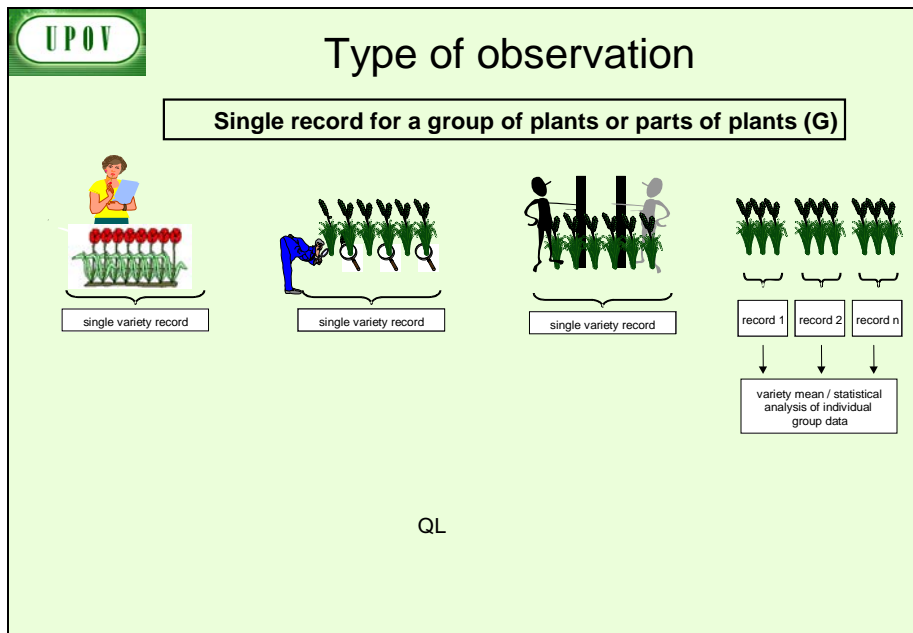
Slide 15



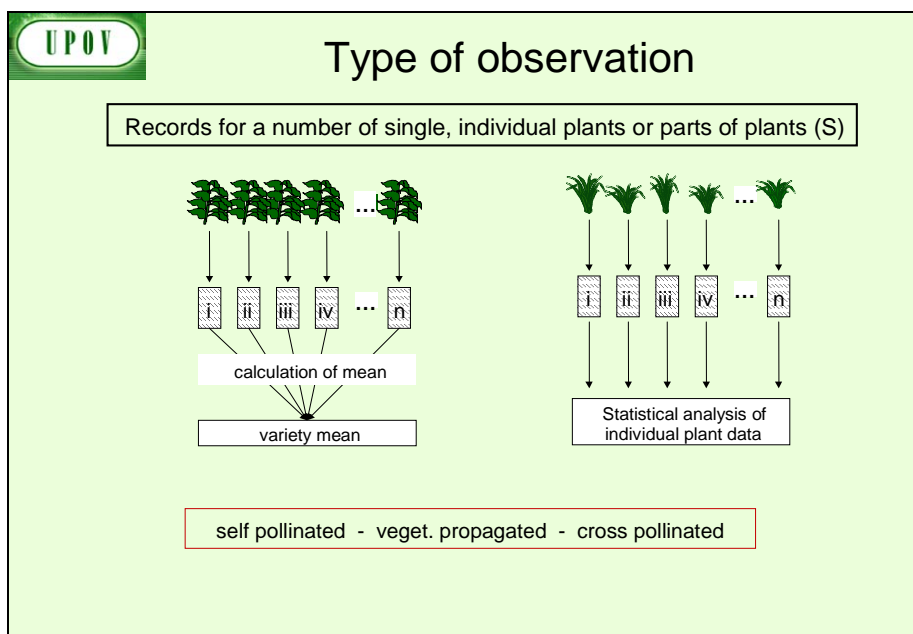
Slide 16




Slide 17



Slide 18




Slide 19



Type of observation

VG	VG
First leaf: anthocyanin coloration of sheath	Ear: anthocyanin coloration of silks
First leaf: shape of tip	Ear: intensity of anthocyanin coloration of silks
Leaf: angle between blade and stem	Leaf: anthocyanin coloration of sheath (in middle of plant)
Leaf: attitude of blade	Ear: type of grain
Tassel: anthocyanin coloration at base of glume	Ear: color of top of grain
Tassel: anthocyanin coloration of glumes excluding base	Ear: color of dorsal side of grain
Tassel: anthocyanin coloration of anthers	Ear: shape
Tassel: density of spikelets	
Tassel: angle between main axis and lateral branches	
Tassel: attitude of lateral branches	

Slide 20



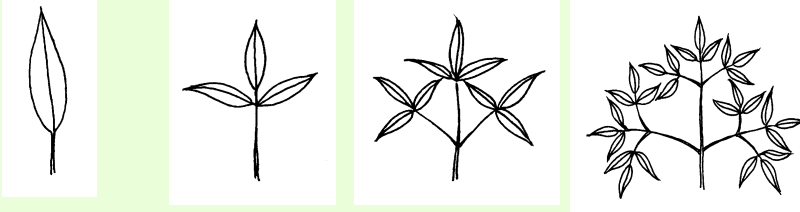
Type of observation

MG	MS
Tassel: time of anthesis	Tassel: length of main axis above <u>lowest</u> lateral branch
Tassel: number of primary lateral branches	Tassel: length of main axis above <u>upper</u> lateral branch
Ear: time of silk emergence (50% of plants)	Tassel: length of side branches
	Leaf: width of blade (leaf of upper ear on the widest part)
	Ear: length of peduncle
	Ear: length
	Ear: diameter (in middle)
	Ear: number of rows of grain

Slide 21

UPOV

Examining Distinctness

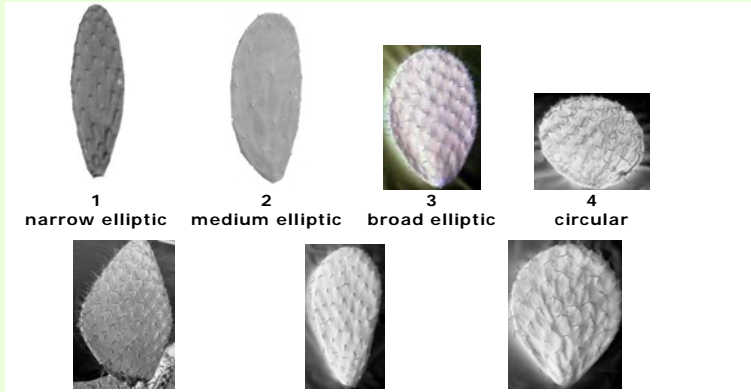


1 simple 2 ternate 3 biternate 4 triternate

Slide 22

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Examining Distinctness



1 narrow elliptic 2 medium elliptic 3 broad elliptic 4 circular

5 rhombic 6 narrow obovate 7 broad obovate

Slide 23

UPOV Examining Distinctness


VG	Tassel: density of spikelets	
	lax	3
QN	medium	5
	dense	7

QN: (visual observation)

Slide 24

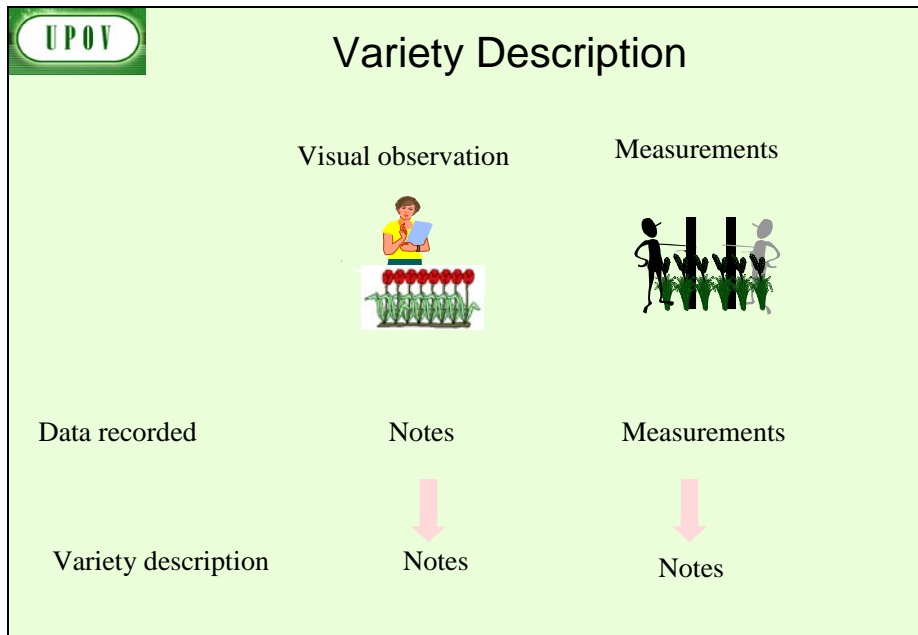
UPOV Examining Distinctness

Ear: length (without husks)

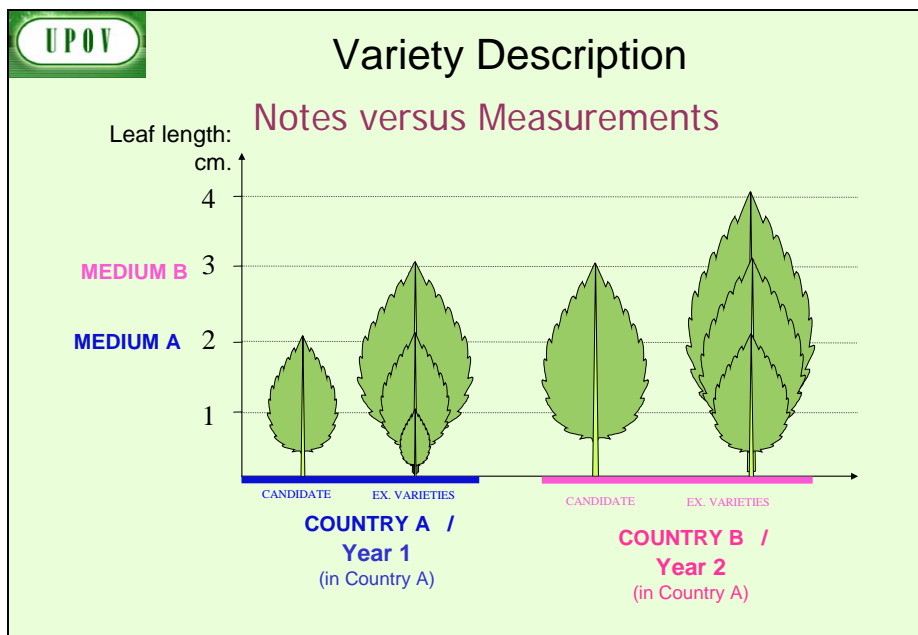


QN: (measurements)


Slide 25



Slide 26



Slide 27



Summary

Characteristics in UPOV TGs = useful for DUS examination

UPOV TGs are revised whenever necessary

Measurements / used

Slide 28



THANK YOU

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