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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

TECHNICAL WORKING PARTY
FOR
ORNAMENTAL PLANTS AND FOREST TREES

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WORKING PAPER ON REVISED DRAFT TEST GUIDELINES FOR WILLOW (*Salix* L.)

Document prepared by experts from Germany

The attached document Willow(proj.1) already incorporates the standard wording of document TGP/7.2, which was adopted by the Technical Committee at its thirty-eighth session in April 2002, and includes some additional standard wording from document TGP/7.1 Draft 1, also agreed at that session.

[Document Willow(proj.1) follows]

UPOV

Willow(proj.1)
ORIGINAL: English
DATE: October 10, 2002

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
 GENEVA

DRAFT

WILLOW*

*(Salix L.)**

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

Alternative Names: *

Latin	English	French	German	Spanish
<i>Salix L.</i>	Willow	Saule	Weide	Sauce

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.]

TABLE OF CONTENTS	PAGE
1. SUBJECT OF THESE GUIDELINES.....	3
2. MATERIAL REQUIRED	3
3. METHOD OF EXAMINATION	3
3.1 Duration of Tests	3
3.2 Testing Place	3
3.3 Conditions for Conducting the Examination	3
3.4 Test Design	4
3.5 Number of Plants/Parts of Plants to be Examined	4
4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY	5
4.1 Distinctness	5
4.2 Uniformity	5
4.3 Stability	5
5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL.....	6
6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS	6
6.1 Categories of Characteristics	6
6.1.1 Standard Test Guidelines Characteristics	6
6.1.2 Asterisked Characteristics	6
6.2 States of Expression and Corresponding Notes	6
6.3 Types of Expression	6
6.4 Example Varieties	7
6.5 Legend	7
7. TABLE OF CHARACTERISTICS	8
8. EXPLANATIONS OF THE TABLE OF CHARACTERISTICS.....	16
9. LITERATURE.....	18
10. TECHNICAL QUESTIONNAIRE.....	19

1. Subject of these Guidelines

1.1 These Test Guidelines apply to all varieties of *Salix* L. of the family Salicaceae.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of hardwood cuttings.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

30 hardwood cuttings
with a diameter of at least 1 cm and a length of 20 cm.

2.4 The cuttings should be taken from one year old main shoots from stools. If the applicant submits distinguishing characteristics, which can only be observed on adult trees, he should indicate to the authorities the location of at least one adult tree of the variety on which these characteristics can be observed. However, if the applicant does not submit such characteristics, it is still recommended that he enable the authorities to make observations on adult trees as this can facilitate the examination and shorten the testing period.

2.5 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.6 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 *Duration of Tests*

The minimum duration of tests should normally be two independent growing cycles.

3.2 *Testing Place*

The tests should normally be conducted at one place. If any characteristics of the variety, which are relevant for the examination of DUS, cannot be seen at that place, the variety may be tested at an additional place.

3.3 *Conditions for Conducting the Examination*

3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.3.2 The following growing conditions are recommended:

Time of submission of plant material:	second half of March (Northern Hemisphere)
Planting of plants for the test:	Beginning of April, in the open, planting distance 150 x 150 cm, 2 cuttings are planted per plant hole and one of them is removed after beginning of growth to have one growing plant
Soil:	sandy, humic soil
Fertilization:	according to soil analysis

3.3.3 Characteristics containing the following notes in the second column of the Table of Characteristics should be examined as indicated below:

- (a) All observations on the plant sex and spring foliage should be made at beginning of growth after winter dormancy.
- (b) All observations on the main shoot and the branches should be made in autumn.
- (c) Hairiness and color should be observed at 20 cm from the tip of the main shoot.
- (d) All observations on the lenticels should be made in the observed middle third of the main shoot.
- (e) All observations on the leaf should be made in the middle of the growing period on leaves of the middle third of the main shoot.

3.3.4 Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.

3.4 Test Design

3.4.1 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.4.2 Each test should be designed to result in a total of at least 10 plants.

3.5 Number of Plants/Parts of Plants to be Examined

Unless otherwise indicated, all observations determined by measuring or counting should be made on 10 plants.

3.6 *Additional Tests*

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 *Distinctness*

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The minimum duration of tests recommended in section 3.1 reflects, in general, the need to ensure that any differences in a characteristic are sufficiently consistent.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.2 *Uniformity*

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.1 The acceptable number of off-type tolerated in a sample size of 10 plants is 1 on the basis of a population standard of 1% and an acceptance probability of 95%.

4.3 *Stability*

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the previous materials supplied.

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 is 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 others 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 trials so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

Plant:sex(characteristic 1)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

6. Introduction to the Table of Characteristics

6.1 *Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and 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.

6.2 *States of Expression and Corresponding Notes*

States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.3 *Types of Expression*

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 *Example Varieties*

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 *Legend*

- (*) Asterisked characteristic –see Section 6.1.2
- (QL) Qualitative characteristic –see Section 6.3
- (QN) Quantitative characteristic –see Section 6.3
- (PQ) Pseudo-Quantitative characteristic –see Section 6.3
- (+) See Explanations on the Table of Characteristics in Chapter 8.
- (a)-(e) See section 3.3.3

7. Table of Characteristics/Table aude scaractères/Merkmalstabelle/Tablade caracteres

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	(a)	Plant:sex		Pflanze:Geschlecht			
		dioeciousfe male		zweihausigweiblich			1
		dioeciousmale		zweihausigmännlich			2
		monoecious unisexual		einhausig eingeschlechtlich			3
		monoecious hermaphrodite		einhausigzwittrig			4
2.	(a)	Plant:spring foliation		Pflanze: Frühjahrsaustrieb			
		veryear ly		sehrfrüh		I -3 -58	1
		early		früh		Godesberg	3
		medium		mittel		Metz	5
		late		spät		F -65 -02	7
		verylate		sehrspät		Mangahn	9
3.	(b)	Mainshoot:attitude		Haupttrieb: Haltung			
		straight		gerade		Bredevoort	1
		slightlycurved		schwachgebogen		I -3 -58	2
		curved		gebogen		MittlererInnV	3
		stronglycurved		starkgebogen		75/64(<i>S.fragilis</i> L.)	4
		sinuous		geschlängelt			5

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4.	(b) (c)	Mainshoot: color of the in the middle third (sunny side)		Haupttrieb: Farbe im mittleren Drittel (Sonnenseite)			
		yellow		gelb			1
		orange		orange		Gelbe Dotterweide	2
		grey		grau			3
		grey green		graugrün			4
		light green		hellgrün		Graupa 34	5
		green		grün		259/64 (S.x smithiana Willd.)	6
		brown green		braungrün		I-3 -5 8	7
		grey brown		graubraun			8
		red brown		rotbraun		Altenstadt 4	9
		brown		braun		Straubinger, Baumweide II	10
5.	(b) (c) (+)	Mainshoot: hairiness		Haupttrieb: Behaarung			
		absent or very weak		fehlend oder sehr gering			1
		weak		gering			3
		medium		mittel			5
		strong		stark			7
		very strong		sehr stark			9

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota	
6.	(b) (d)	Mainshoot: protrusion of lenticel		Haupttrieb: Hervorstehender Lentizelle				
			absent or very weak			fehlend oder sehr gering		1
			weak			gering		3
			medium			mittel		5
			strong			stark		7
		very strong		sehr stark		9		
7. (+)	(b) (c)	Mainshoot: color of leaf bud		Haupttrieb: Farbe der Blattknospe				
			light green			hellgrün		1
			green			grün		2
			greenish brown			grünlichbraun		3
			brown			braun		4
		reddish brown		rötlichbraun		5		
8. (+)	(b) (c)	Mainshoot: hairiness of leaf bud		Haupttrieb: Behaarung der Blattknospe				
			absent or very weak			fehlend oder sehr gering		1
			weak			gering		3
			medium			mittel		5
			strong			stark		7
		very strong		sehr stark		9		

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota				
9.	(b)	Branch: number of branches longer than 5cm		Zweig: Anzahl der Zweige länger als 5 cm							
								absent or very few	fehlend oder sehr gering	Altenstadt 4	1
								few	gering	Mittlerer Inn III	3
								medium	mittel	Bredevoort	5
								many	groß	Belders	7
		very many	sehr groß	I-3 -58	9						
10.	(b)	Branch: angle between first 5cm of branch and stem in the middle third of stem (time: autumn of 1st year)		Zweig: Winkel zwischen dem ersten 5cm des Zweigs und dem Haupttrieb im mittleren Drittel des Haupttriebes (Zeitpunkt: Herbst des 1. Jahres)							
								very small	sehr klein		1
								small	klein	Lievelde	3
								medium	mittel		5
								large	groß	259/64 (S.x.s. Willd.)	7
		very large	sehr groß		9						
11.	(b)	Branch: attitude		Zweig: Haltung							
								curved up	aufwärtsgebogen		1
								straight	gerade		2
								drooping	überhängend		3
		first curved down, then curved up	erst abwärts, dann aufwärtsgebogen		4						

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedadesejemplo	Note/ Nota
12. (+)	(b)	Branch:color (sunnyside)		Zweig:Farbe (Sonnenseite)			
	(c)						
			greybrown		graubraun		1
			redbrown		rotbraun	Boberg	2
		brown		braun		3	
13.	(e)	Leafblade:length ofmidrib		Blattspreite:Länge derMittelrippe			
			veryshort		sehrkurz		1
			short		kurz		3
			medium		mittel		5
			long		lang		7
			verylong		sehrlang		9
14.	(e)	Leafblade:width		Blattspreite:Breite			
			verynarrow		sehrschmal		1
			narrow		schmal		3
			medium		mittel		5
			broad		breit		7
			verybroad		sehrbreit		9
15.	(e)	Leafblade:position ofmaximumwidth		Blattspreite:Lage dergrößtenB reite			
			belowthemiddle		unterhalbderMitte		1
			approximatelyatthe middle		etwainderMitte		2
			abovethemiddle		oberhalbderMitte		3

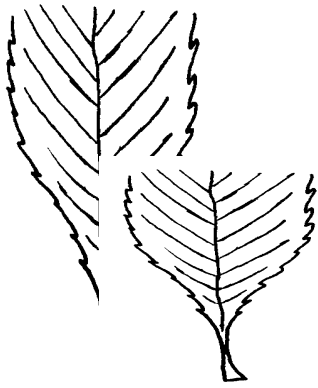
Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. (+)	(e)	Leafblade:shape of base		Blattspreite:Form der Basis			
		wedge-shaped, acuminate		keilförmig, zugespitzt			1
		wedge-shaped, acute		keilförmig, spitz			2
		wedge-shaped, rounded		keilförmig, gerundet			3
		rounded		abgerundet			4
		straight		gerade			5
		cordate		herzförmig			6
17. (+)	(e)	Leafblade:shape of tip		Blattspreite:Form der Spitze			
		mucronate		aufgesetzte Spitze			1
		acuminate		zugespitzt			2
		narrowly acute		schmal spitz			3
		acute		spitz			4
broadly acute		breit spitz			5		
18.	(e)	Leafblade:color of upper side		Blattspreite:Farbe der Oberseite			
		yellowgreen		gelbgrün			1
		greygreen		graugrün			2
		green		grün			3
		bluegreen		blaugrün			4
redgreen		rotgrün			5		

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.	(e)	Leafblade: hairiness of upper side		Blattspreite: Behaarung der Oberseite			
		absent or very weak		fehlend oder sehr gering			1
		weak		gering			3
		medium		mittel			5
		strong		stark			7
		very strong		sehr stark			9
20.	(e)	Leafblade: hairiness of flower side		Blattspreite: Behaarung der Unterseite			
		absent or very weak		fehlend oder sehr gering			1
		weak		gering			3
		medium		mittel			5
		strong		stark			7
		very strong		sehr stark			9
21.		Petiole: length		Blattstiel: Länge			
		very short		sehr kurz			1
		short		kurz			3
		medium		mittel			5
		long		lang			7
		very long		sehr lang			9
22.		Petiole: color of upper side		Blattstiel: Farbe der Oberseite			
		yellow green		gelbgrün			1
		green		grün			2
		red green		rotgrün			3
		violet green		violettgrün			4

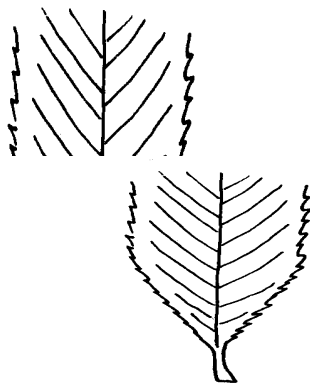
Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23.		Stipule:length		Nebenblatt:Länge			
		veryshort		sehrkurz			1
		short		kurz			3
		medium		mittel			5
		long		lang			7
		verylong		sehrlang			9
24.		Stipule:type		Nebenblatt:Typ			
(+)							
		type1		Typ1			1
		type2		Typ2			2
		type3		Typ3			3

8.

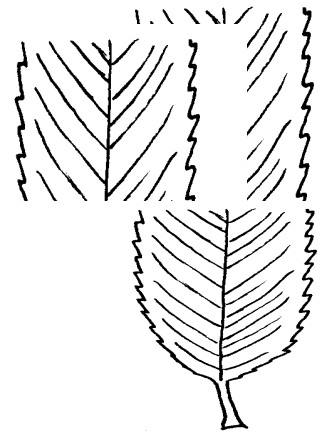
E



wedge



wedge

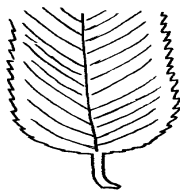


wedge

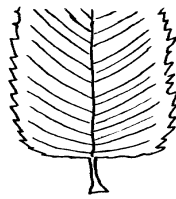
1
-shaped,acuminate

2
-shaped,acute

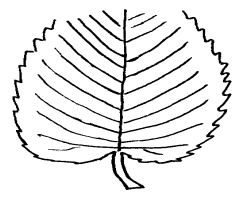
3
-shaped,rounded



4
rounded

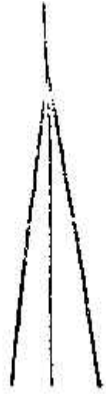


5
straight



6
cordate

Ad17:Leafblade:shapeoftip



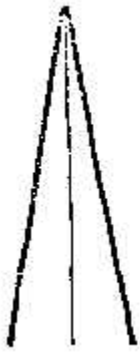
1
mucro



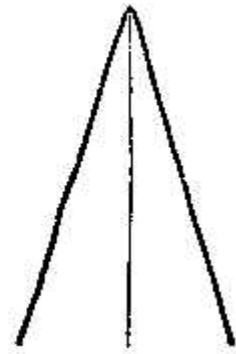
2
acuminate



3
narrowlyacute



4
acute



5
broadlyacute

Ad24:Stipule:type



1
type1



2
type2



3
type3

9. Literature

- Newsholme, Christopher "Willows, the genus Salix." London, B. T. Batsford Ltd., Great Britain, 1992

- Schiech htl, H.M. "WeideninderPraxis" Patzer Verlag, Hannover

10. TechnicalQuestionnaire

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
		Applicationdate: (nottobefilledinbytheapplicant)
TECHNICALQUESTIONNAIRE tobecompleted inconnectionwithanapplicationforplantbreeders'rights		
1. SubjectoftheTechnicalQuestionnaire		
1.1 LatinName	<input type="text" value="Salix L."/>	
1.2 CommonName	<input type="text" value="Willow"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
TelephoneNo.	<input type="text"/>	
FaxNo.	<input type="text"/>	
E-mailaddress	<input type="text"/>	
Breeder(ifdifferentfromapplicant)	<input type="text"/>	
3. Proposeddenominationandbreeder'sreference		
Proposeddenomination (ifavailable)	<input type="text"/>	
Breeder'sreference	<input type="text"/>	

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
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4. Informationonthebreedingschemeandpropagationofthevariety

4.1 BreedingScheme

4.1.1 Varietyresultingfrom:

(a) controlledcross
(pleasestateparentvarieties)

(b) partiallyunknowncross
(pleasestateknownparentvariety(ies))

(c) totallyunknowncross

4.1.2 Mutation
(pleasestateparentvariety)

4.1.3 Discovery
(pleasestatewhere,whenandhowdeveloped)

4.1.4 Other
(pleaseprovidedetails)

4.2 MethodofPropagatingtheVariety

(a) cuttings

(b) *invitro* propagation

(c) other(specifymethod)

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
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7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

7.1.1 Resistance to pest and diseases

Yes No

(If yes, please provide details)

7.1.2 Other

Yes No

(If yes, please provide details)

7.2 Special conditions for the examination of the variety

7.2.1 Are there any special conditions for growing the variety or conducting the examination?

Yes No

7.2.2 If yes, please give details:

7.3 Other information

A representative color photograph of the variety should accompany the Technical Questionnaire.

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes No

(b) Has such authorization been obtained?

Yes No

If the answer to (b) is yes, please attach a copy of the authorization.

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
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9. Therebydeclarethat,tothebestofmyknowledge,theinformationprovidedinthisform
isincorrect:

Applicant'sname

Signature

Date

[Endofdocument]