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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

CUCUMBER, GHERKIN

UPOV Code: CUCUM_SAT

(Cucumis sativus L.)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from the Netherlands

*to be considered by the Technical Working Party for Vegetables (TWV)
at its fortieth session to be held in Guanajuato, Guanajuato State, Mexico,
from June 12 to 16, 2006*

Alternative Names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Cucumis sativus L.</i>	Cucumber, Gherkin	Concombre, Cornichon	Gurken	Pepino, Pepinillo

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

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

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

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Cucumis sativus* L.

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 submitted:

- in the form of seed in the case of seed-propagated varieties, or
- in the form of plants in the case of vegetatively propagated varieties.

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

- 1,500 seeds in the case of seed-propagated varieties, or
- 50 plants in the case of vegetatively propagated varieties.

See comments in Endnote

In the case of seed, the seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.

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

2.5 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 *Number of Growing Cycles*

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

3.2 *Testing Place*

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 "Examining Distinctness".

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 recommended method of observing the characteristic is indicated by the following key in the second column of the Table of Characteristics:

- 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

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 40 plants in the open or 20 plants in the greenhouse, and should be divided between two or more replicates.

3.4.2 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.

3.5 *Number of Plants / Parts of Plants to be Examined*

Unless otherwise indicated, all observations should be made on 20 plants or parts taken from each of 20 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 differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

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*

4.2.1 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:

4.2.2 The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.3 For the assessment of uniformity of varieties other than cross-pollinated varieties, a population standard of 1 % and an acceptance probability of at least 95 % should be applied. In the case of a sample size of 40 plants, 2 off-types are allowed. In the case of a sample size of 20 plants, 1 off-type is allowed.

See comments in Endnote

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 material 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 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:

Fruit: type

- (a) Cotyledon: bitterness (characteristic 1)
- (b) Plant: sex expression (characteristic 14)
- (c) Fruit: parthenocarpy (characteristic 18)
- (d) Fruit: length (characteristic 19)
- (e) Fruit: ground color of skin at market stage (characteristic 27)
- (b) Fruit: color of vestiture (characteristic 37)

See comments in Endnote

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 Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3

QN: Quantitative characteristic – see Chapter 6.3

PQ: Pseudo-qualitative characteristic – see Chapter 6.3

MG: single measurement of a group of plants or parts of plants – see Chapter 3.3.2

MS: measurement of a number of individual plants or parts of plants – see Chapter 3.3.2

VG: visual assessment by a single observation of a group of plants or parts of plants – Chapter 3.3.2

VS: visual assessment by observation of individual plants or parts of plants” – see Chapter 3.3.2

(a)-(f) See Explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8.2

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

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<i>See general comments on Chapter 7 in Endnote</i>						
<i>See comments on characteristic 1 in Endnote</i>						
1.	VG	Cotyledon:				
(42)		bitterness				
(*)						
QL	(a)	absent			Rocket GS (C), Sandra (C)	1
		present			Farbio (C), Levo (G), Sporu (C)	9
2. (1)	VG	Plant: growth type				
(*)						
QL	(b)	determinate			Bush Crop (C), Shachal (C)	1
		indeterminate			Corona (C), Levina (G)	2
<i>See comments on characteristic 3 in Endnote</i>						
3.	MG	Plant: length of				
(New		main stem				
i)						
(+)						
QN		short			Kora (G)	3
		medium				5
		long			Cerrucho (C)	7
4.	MG	Plant: total length of				
(3)		first 15 internodes				
QN	(b)	very short				1
		short			Kora (G), Maram (C), Naf (G), Tagor (G)	3
		medium			Marketmore (C)	5
		long			Avir (C), Nimbus (G), Pepinex 69 (C)	7
		very long			Cerrucho (C)	9

English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
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See comments on characteristic 5 in Endnote

5.	VG	Leaf blade: attitude			
(New ii) (+)					
QN	(c)	predominantly erect		Akito (C)	1
		predominantly horizontal		Jazzer (C)	2
		predominantly drooping		Kastor (C), Nabil (C)	3
6.	VG/ MS	Leaf blade: length			
(+)					
QN	(c)	short		Levo (G)	3
		medium		Briljant (C)	5
		long		Corona (C)	7

See comments on characteristic 7 in Endnote

7.	VG/ MS	Leaf blade: ratio length of blade/ length of terminal lobe			
(New iii) (+)					
QN	(c)	very small		Delikatess (G)	1
		small			3
		medium		Corona (C)	5
		large		Kornim (G)	7
		very large		Defense (C)	9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
<i>See comments on characteristic 8 in Endnote</i>							
8.	VG	Leaf blade: shape of apex of terminal lobe					
(New iv)							
(+)							
PQ	(c)	acute			Delikatess (G)	1	
		rectangular			Hana (C)	2	
		obtuse			Melody (G)	3	
		rounded			Jazzer (C)	4	
9.	VG	Leaf blade: intensity of green color					
(6)							
QN	(c)	light			De Russie (C)	3	
		medium			Rocket GS (C), Stereo (C)	5	
		dark			Marketmore (C), Sandra (C), Tokyo Slicer (C)	7	
		very dark			Akito (C)	9	
10.	VG	Leaf blade: blistering					
(7)							
QN	(c)	absent or very weak			Silor (C)	1	
		weak			Pepinex 69 (C), Rocket GS (C)	3	
		medium			Monir (C)	5	
		strong			Tokyo Slicer (C)	7	
		very strong				9	

English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<i>See comments on characteristic 11 in Endnote</i>					
11. VG (8)	Leaf blade: undulation of margin				
QN (c)	absent or very weakly expressed			Jazzer (C)	1
	moderately expressed				2
	strongly expressed			Tokyo Slicer (C)	3
<i>See comments on characteristic 12 in Endnote</i>					
12. VG (New v)	Leaf blade: dentation of margin				
QN (c)	very weak			Jazzer (C)	1
	weak			Hana (C), Silor (C)	3
	medium			Susan (C)	5
	strong			Travito (C)	7
	very strong				9
13. MG (41)	Time of development of female flowers (80% of plants with at least one female flower)				
QN	early			Avir (C)	3
	medium				5
	late			Fin de Meaux (G), Riesenschäl (C)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
14. (12) (*)(+)	VG Plant: sex expression					
QL (d)	generally more male than female flowers				Hokus (G)	1
	mainly female flowers				Levo (G), Toska 70 (C)	2
	almost exclusively female flowers				Farbio (C), Sandra (C), Wilma (G)	3
	hermaphrodite and male flowers				Sunsweet (C)	4

See comments on characteristic 15 in Endnote

15. (13)	VG Plant: number of female flowers per node					
QN (d)	predominantly one				Dasher (C), Faraón (C)	1
	predominantly one or two				Brunex (C), Marumba (C)	2
	predominantly two				Corona (C)	3
	predominantly two or three				Tempo (C)	4
	predominantly four or five				Melody (G)	5
	predominantly more than five				Olympos (C)	6

See comments on characteristics 16 and 17 in Endnote

16. (14)	VG Young fruit: type of vestiture					
PQ (d)	hairs only				Doplus (G), Silor (C)	
	prickles only				Corona (C), Jazzer (C), Tagor (G)	
	hairs and prickles				De Bourbonne (G), De Massy (G)	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
17. VG	Young fruit: color of vestiture					
(16)						
PQ	(d)				Jazzer (C)	
					Akito (C)	
					Satina (G)	
					Gele Tros, Vert Petit de Paris (G)	
<i>See comments on characteristic 18 in Endnote</i>						
18. VG	Parthenocarpy					
(*)						
(+)						
QL					Levo (G), Toska 70 (C)	1
					Farbio (C), Rocket GS (C), Sandra (C), Wilma (G)	9
19. MS/ VG	Fruit: length					
(*)						
(+)						
QN	(e)				De Russie (C), Sunsweet (C)	1
					Levo (G), Tagor (C)	3
					Gemini (C), Jazzer (C)	5
					Corona (C)	7
					Kaliber (C)	9
20. MS/ VG	Fruit: maximum diameter					
(+)						
QN	(e)				Picobello (C), Wilma (G)	3
					Corona (C), Diamant (G)	5
					Delikatess (G), Riesenschäl (C),	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
21. MS/	Fruit: ratio					
(*) VG	length/diameter					
(+)						
	(e)	very small			Sunsweet (C)	1
QN		small			Akord (G), Sonate (G)	3
		medium			Picobello (C), Jazzer (C), Wilma (G)	5
		large			Corona (C)	7
		very large			Kyoto 3 Feet (C)	9

See comments on characteristic 22 in Endnote

22. VG	Fruit: core diameter					
	in relation to					
	diameter of fruit					
QN	(e)	very small				1
		small			Riesenschäl, Telepathy (C)	3
		medium			Corona (C)	5
		large			Vert petit de Paris (G)	7
		very large			Sunsweet	9

See comments on characteristic 23 in Endnote

23. VG	Fruit: shape in					
(New	transverse section					
vi)						
QN	(e)	predominantly round			Telepathy (C), Susan (C)	1
		round to angular			Dasher (C)	2
		predominantly angular			Anico (G), Gele Tros, Regal (G),	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
24.	VG	Fruit: shape of stem end				
(23)						
(*)						
(+)						
PQ	(e)	necked			Sandra (C), Tasty Green (C)	1
		acute			De Massy (G)	2
		obtuse			Maram (C), Score (G), Tagor (G)	3
25.	VG	<u>Only necked</u> varieties: Fruit: length of neck				
(24)						
QN	(e)	very short				1
		short			Saskia (C)	3
		medium			Corona (C), Telepathy (C)	5
		long			Kamaron (C)	7
		very long			Tasty Green (C)	9
<i>See comments on characteristic 26 in Endnote</i>						
26.	VG	Fruit: shape of calyx end				
(25)						
PQ	(e)	acute			Dardos (C)	1
		obtuse			Reno (C)	2
		rounded			Bellissima (C)	3
		truncate			Medusa (G)	4
27.	VG	Fruit: ground color of skin at market stage				
(26)						
(*)						
QL	(e)	white			Bonneuil (C)	1
		yellow			Gele Tros (C)	2
		green			Corona (C)	3

English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
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See comments on characteristic 28 in Endnote

28.	VG	<u>Only varieties with yellow and green ground color of skin:</u> Fruit: intensity of ground color of skin			
(27)					
QN	(e)	light			3
		medium			5
		dark			7

[In 2005, the discussions stopped at this point, the following was not yet discussed nor agreed.]

See comments on characteristics 29 to 31 in Endnote

29.	VG	Fruit: ribs			
mod					
(*)					
(+)					
QL	(e)	absent		Corona (C)	1
		present		Vert petit de Paris (G)	9

30.	VG	Fruit: sutures			
(vii)					
(*)					
(+)					
QL	(e)	absent		Corona (C), Hana (C)	1
		present		Nabil (C), Silor (C)	9

31.	VG	Fruit: creasing			
(viii)					
(*)					
(+)					
QL	(e)	absent		Jazzer (C)	1
		present		Corona (C), Nabil (C)	9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
32.	VG	Fruit: degree of creasing					
(ix)							
QN	(e)	very weak			Silor (C)	1	
		weak			Nabil (C)	3	
		medium			Corona (C), Galileo (C)	5	
		strong			Grizzly (C)	7	
		very strong			Suyo Long (C)	9	

33.
(29)
del **Fruit: prominence of ribs**

34.
(30)
del **Fruit: coloration of ribs compared to ground color**

See comments on characteristic 35 in Endnote

35. **VG** **Fruit: type of vestiture**
(x)
(*)

PQ	(e)	hairs only			Silor (C), Doplus (G)	1
		prickles only			Jazzer (C), Corona (C), Tagor	2
		hairs and prickles			De Bourbonne (G), De Massy (G)	3

See comments on characteristic 36 in Endnote

36. **VG** **Fruit: density of vestiture**
(31)
mod

QN	(e)	absent or very sparse			Beth Alpha (C), Vert petit de Paris (G)	1
		sparse				3
		medium			Tasty Green (C)	5
		dense			Silor (C), Suyo Long (C)	7
		very dense			Moneta (C), Parmel (G)	9

English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<i>See comments on characteristic 37 in Endnote</i>					
37.	VG	Fruit: color of			
(xi)	new	vestiture			
(*)					
PQ	(e)	white		Jazzer (C)	1
		light brown		Akito (C)	2
		dark brown		Satina (G)	3
		black		Gele Tros (C), Vert petit de Paris (G)	4
38.	VG	Fruit: warts			
(32)					
(*)					
QL	(e)	absent		Diana	1
		present		Dumex (C), Regal (G), Chinese Slangen (C)	9
<i>See comments on characteristic 39 in Endnote</i>					
39.	VG	Fruit: size of warts			
(xii)					
QN	(e)	very small		Parmel (G)	1
		small		Jazzer (C)	3
		medium		Regal (G)	5
		large		Chinese Slangen (C)	7
		very large		Tasty Green (C)	9
<i>See comments on characteristic 40 in Endnote</i>					
40.	VG	Fruit: dotted stripes			
(33)					
mod					
(*)					
(+)					
QL	(e)	absent		Pepinex 69 (C)	1
		present		Levo (G), Suyo Long (C)	9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
41. VG (34) mod	Fruit: length of dotted stripes					
QN (e)	very short					1
	short				Astrea (C)	3
	medium				Breso (C)	5
	long				Finvo (G), Pioneer (G), Tagor (G), Tokyo Slicer (C)	7
	very long				Suyo Long (C)	9
42. VG (35) mod (*)	Fruit: dots (stripes excluded)					
QL (e)	absent				Sensation (C)	1
	present				Delicatesse (G), White Sun (C)	9
<i>See comments on characteristic 43 in Endnote</i>						
43. VG (36) mod	Fruit: type of dots					
PQ (e)	small and round				Finvo (G), Paro (G), Tokyo Slicer (C), White Sun (C)	1
	large and irregular				Delicatess (G), Fin de Meaux (G), Marketer (C), Vert petit de Paris (G)	2

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
44.	VG					
(37)	Fruit: density of dots					
mod						
QN	(e)					
	very sparse					1
	sparse				Raider (C)	3
	medium				Hyclos (G), Le Génereux (C), Levo (G)	5
	dense				Mesa (C), Paro (G)	7
	very dense				Carnito (C), White Sun (C)	9

See comment on characteristic 45 in Chapter 11

45.	VG					
(xv)	Fruit: glaucosity					
(+)						
QN	(e)					
	absent or very weak				Corona (C)	1
	weak				Crispina (G)	3
	medium				Jizzer (C)	5
	strong					7
	very strong					9

46.	VG/					
(38)	MS					
	Fruit: length of peduncle					
QN	(e)					
	short				Admirable (C), Belcanto (C)	3
	medium				Aries (C), Femdan (C)	5
	long				Pepinex 69 (C)	7

See comments on characteristic 47 in Endnote

47.						
(39)	Fruit: thickness of peduncle					
del						

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
48. (40)	VG	Fruit: ground color of skin at physiological ripening					
PQ	(e)	white				1	
		yellow				2	
		green				3	
		orange				4	
		brown			Vert petit de Paris (G)	5	
<i>See comments on characteristic 49 in Endnote</i>							
49. (43) (*)	VG	Fruit: bitterness at stem end					
QL	(e)	absent			Farbio (C), Levo (G), Rocket GS (C)	1	
		present			Fin de Meaux G), Imanol (C)	9	
<i>See comments on characteristic 50 in Endnote</i>							
50. (44) mod		Resistance to Cladosporium cucumerinum (Ccu)					
	(+)						
QL		absent			Pepinex 69 (C)	1	
		present			Maketmore 76 (C)	9	
51. (45) (+)		Resistance to Cucumis mosaic virus (CMV)					
QN		susceptible			Gele Tros (C)	1	
		intermediate resistant			Gardon (C), Levo (G)	2	
		highly resistant			Hokus (G), Naf (G)	3	

English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<i>See comments on characteristic 52 in Endnote</i>					
52. (46)	Resistance to powdery mildew (Sphaerotheca fuliginea) (Sf)				
(+)					
QN	susceptible			Corona (C)	1
	intermediate resistant			Flamingo (C)	2
	highly resistant			Cordoba (C)	3
<i>See comments on characteristic 53 in Endnote</i>					
53. (47)	Resistance to powdery mildew (Erysiphe cichoracearum)				
del					
<i>See comments on characteristic 54 in Endnote</i>					
54. (48)	Resistance to downy mildew (Pseudoperonospora cubensis) (Pc)				
(+)					
QL	absent			Pepinex 69 (C)	1
	present			Sonate	9
<i>See comments on characteristic 55 in Endnote</i>					
55. (49)	Resistance to Corynespora blight and target leaf spot (Corynespora cassiicola) (Cca)				
mod					
(+)					
QL	absent			Beth Alpha (C)	1
	present			Corona (C)	9
56. (xiii)	Resistance to Cucumber Vein Yellowing Virus (CVYV)				
(+)					
QL	absent			Corona (C)	1
	present			Tornac (C)	9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<i>See comments on characteristic 57 in Endnote</i>						
57.	Resistance to					
(xiv)	Zucchini Yellow					
(+)	Mosaic Virus					
	(ZYMV)					
QL	absent				Corona (C)	1
	present				Dina (C)	9

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

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

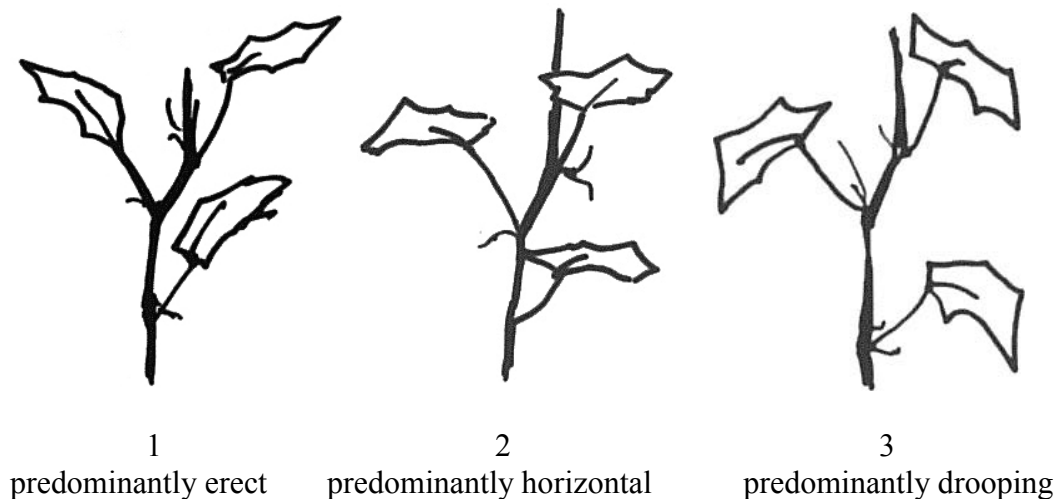
- (a) Cotyledon: bitterness should be observed just before the development of the first true leaf, by tasting
- (b) Plant: Should be observed when the concerned part of the main stem is fully developed
- (c) Leaf blade: should be observed on fully developed leaf blade, from the 7th node upwards
- (d) Plant: all observations on flowering should be made between the 5th and the 15th node.
- (e) Fruit: all observations on the fruits should, except when stated otherwise, be made on fruits around 14 days after flowering, between the 5th and 15th node.

Explanations for individual characteristics

ISF: Not all drawings are very clear. Would it be possible to replace some with pictures?

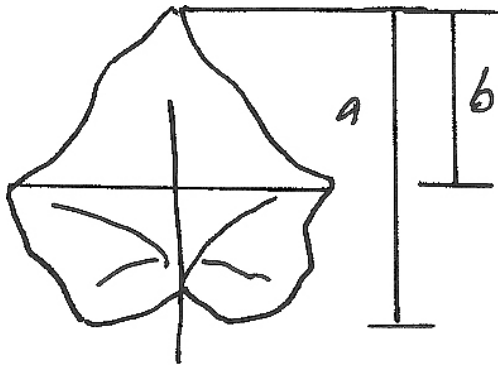
Ad. 5. Leaf blade: attitude

To be observed only for staked, vertically grown varieties.

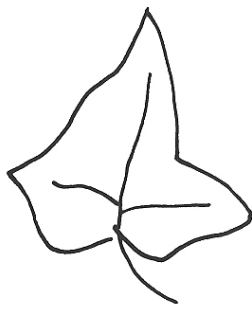


Ad. 6: Leaf blade: length: a

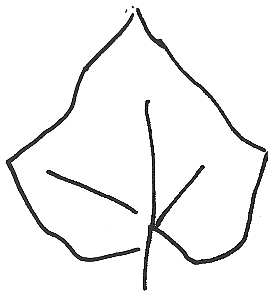
Ad. 7: Leaf blade: ratio length of blade/length of terminal lobe: a/b



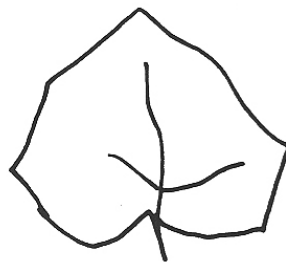
Ad. 8: Leaf blade: shape of apex of terminal lobe



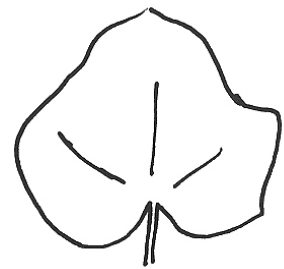
1
acute



2
rectangular



3
obtuse



4
rounded

Ad. 14: Plant: sex expression

generally more male than female flowers	All the nodes with mixed flowering, per node more male then female flowers <u>OR</u> <u>plants with an alternation of few nodes with only male flowers and few nodes with only female flowers.</u>	monoecious	Hokus (G)	1
mainly female flowers	All the nodes with female flowers, none or a few male flowers per node	subgynoecious	Levo (G), Toska 70 (C)	2
almost exclusively female flowers	All the nodes with female flowers, very rarely a node with a few male flowers	gynoecious	Farbio (C), Sandra (C), Wilma (G)	3
hermaphrodite and male flowers	All the nodes with hermaphrodite and male flowers		Sunsweet (C)	4

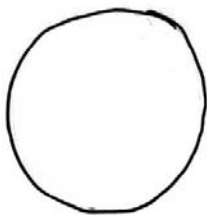
Ad. 18: Parthenocarpy:

The development of the fruit without pollination should be observed under circumstances where pollination by insects (bees, bumblebees, etc.) is not possible: in an insect free glasshouse or at a time of the year when no insects are active.

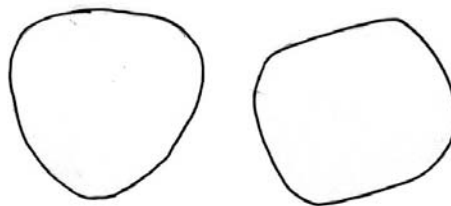
Ad. 19: Fruit: length:

Because this characteristic covers the full range from the shortest to the longest fruit type, this means that there is no even distribution over the characteristic. It also means that varieties with the same state, still may be distinct based on a significant fruit length difference.

Ad. 23: (new vi): Fruit: shape in transverse section

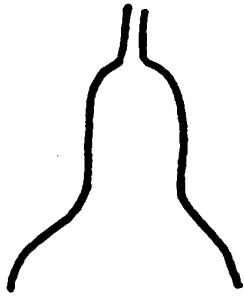


1
predominantly round

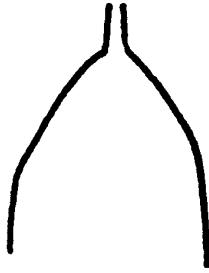


2
predominantly angular

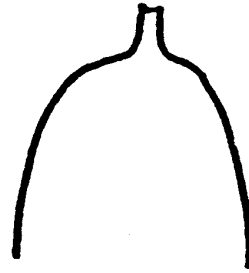
Ad. 24: Fruit: shape of stem end



1
necked



2
acute



3
obtuse

Ad. 26: Fruit: shape of calyx end



1
acute



2
obtuse

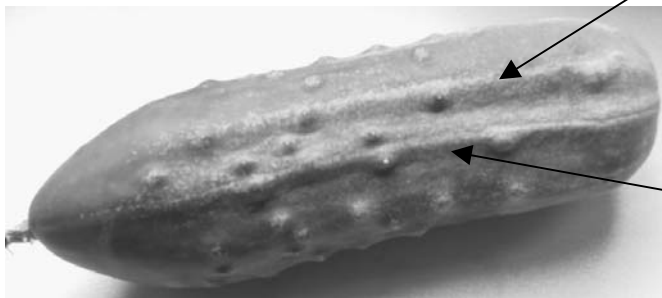


3
rounded

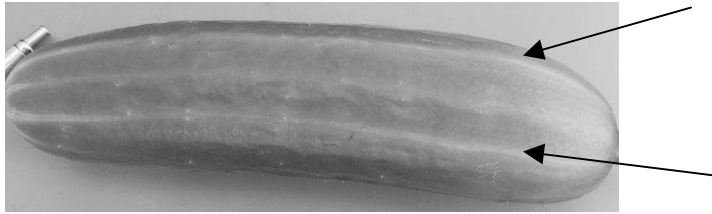


4
truncate

Ad. 29: Fruit: ribs

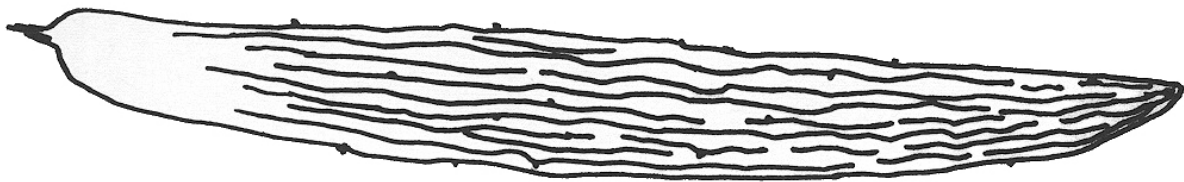


Ad. 30: Fruit: sutures

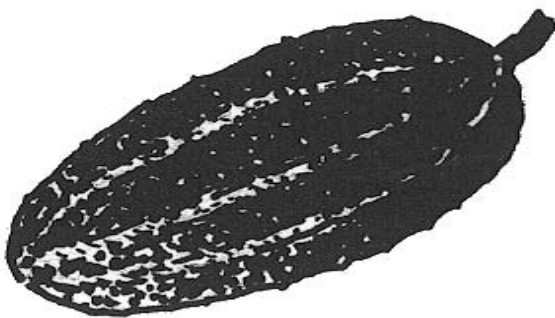


Ad. 31: Fruit: creasing

F agrees



Ad. 40: Fruit: dotted stripes



The stripes are situated at the position of the sutures.

Ad. 45: Fruit: glaucosity:

Glaucosity: the fact that the surface of an organ is coated with a whitish or grayish waxy layer.

Ad. 50: Resistance to *Cladosporium cucumerinum* (Ccu)

Method

Maintenance of races

Type of medium:	PDA (Potato Dextrose Agar)
Special conditions:	7-8 days in the dark at 20°C
Remarks:	The spore suspension should have a concentration of 0.5×10^5 spores/ml. Keep maximum 4 days in refrigerator at 4°C.

<u>Preparation of inoculum:</u>	Scrape off the fungus from the PDA medium, collect it in a beaker and filter it through a cheese cloth.
---------------------------------	---

Raising the plants

Sowing:	In potting soil
Temperature:	22/20°C (d/n)
Light:	At least 16 hours
Number of plants:	30 plants per sample

Inoculation

Growth stage of plants:	The plants should have a first leaf with a diameter of three centimeters.
Method of inoculation:	Spraying of spore suspension on leaves

Special conditions after inoculation

Temperature:	22/20°C (d/n)
Light:	At least 16 hours
Special conditions:	A plastic cover over the plants. Closed during the first three days. Then slightly open at daytime.

Duration of test

- From sowing to inoculation: 12 days
- From inoculation to last reading: 6-8 days

<u>Standard varieties:</u>	Resistance absent: Pepinex 69 Resistance present: Marketmore 76
----------------------------	--

Ad. 51: Resistance to Cucumis Mosaic Virus (CMV)

Method

Maintenance of races

Type of medium: On susceptible living plants

Remarks: Keep the greenhouse free from aphids

Preparation of inoculum: Mix freshly infected leaves with water. Prepare a solution with a concentration of 1:15 (inoculum: water).

Raising the plants

Sowing: In potting soil

Temperature: 22/20°C (d/n)

Light: At least 16 hours

Number of plants: 30 plants per sample

Inoculation

Growth stage of plants: Fully developed cotyledons

Method of inoculation: Mechanical, by rubbing the cotyledons. Use carborundum powder and wash it away after inoculation.

Special conditions after inoculation

Temperature: 22/18°C (d/n)

Light: 16 hours

Duration of test

- From sowing to inoculation: 6-7 days
- From inoculation to last reading: 10-14 days

Scheme of observation:

I Susceptible:

II

restricted growth, cotyledon
slightly blistered, leaves
completely mottled

Gele Tros

III curled leaves, heavy mosaic
symptoms over whole leave

2. Intermediate resistant

IV curled leaves, slight mosaic
symptoms Gardon

V slightly curled leaves, slight
mosaic symptoms, many
necrotic spots Levo

VI leaves not curled, vague mosaic
symptoms, few necrotic spots

3. Highly resistant

VII very few virus symptoms, very
few necrotic spots

VIII no symptoms Hokus, Naf

Ad. 52: Resistance to powdery mildew (*Sphaerotheca fuliginea*) (Sf)

Method

Maintenance of races

Type of medium:	On susceptible living plants
<u>Preparation of inoculum:</u>	Wash the spores from the infected leaves and prepare a suspension with a concentration of 10^5 spores/ml. Filter the suspension through a cheese-cloth before infecting the plants.

Raising the plants

Sowing:	In potting soil
Temperature:	22/20°C (d/n)
Light:	At least 16 hours
Number of plants:	30 plants per sample

Inoculation

Growth stage of plants:	Fully developed cotyledons
Method of inoculation:	Spraying of spore suspension on leaves: the first, the second and the fifth day after planting out.

Special conditions after inoculation

Temperature:	20/20°C (d/n)
Light:	16 hours

Duration of test

- From sowing to inoculation: 7, 8 and 11 days
- From inoculation to last reading: 12 days

Scheme of observation

1. Susceptible: hypocotyls and cotyledons infected, first leaf strongly infected, high sporulation,
2. Intermediate resistant: hypocotyls and cotyledons not infected, first leaf moderately infected with moderate sporulation, moderate colonization
3. Highly resistant: hypocotyls and cotyledons not infected, first leaf very weakly or not infected, few colonies, very weak sporulation,

Scheme of observation:

ISF: 2. Intermediate resistant: should be: hypocotyls not infected, cotyledons and first leaf moderately infected.

Standard varieties:

1. Susceptible: Corona
2. Intermediate resistant: Flamingo
3. Highly resistant: Cordoba

Ad. 53: Resistance to powdery mildew (*Erysiphe cichoriacearum*)

Method

Maintenance of races

Type of medium: On susceptible living plants

Preparation of inoculum: Wash the spores from the infected leaves and prepare a suspension with a concentration of 10^5 spores/ml. Filter the suspension through a cheese-cloth before infecting the plants.

Raising the plants

Sowing: In potting soil

Temperature: 22/20°C (d/n)

Light: At least 16 hours

Number of plants: 30 plants per sample

Inoculation

Growth stage of plants: Fully developed cotyledons

Method of inoculation: Spraying of spore suspension on leaves: the first, the second and the fifth day after planting out.

Special conditions after inoculation

Temperature: 20/20°C (d/n)

Light: 16 hours

Duration of test

- From sowing to inoculation: 7, 8 and 11 days

- From inoculation to last reading: 12 days

Standard varieties: Resistance absent: Beth Alpha
Resistance present: Bresó

Ad. 54: Resistance to downy mildew (*Pseudoperonospora cubensis*) (Pc)

Method

Maintenance of races

Type of medium: On susceptible living plants

Preparation of inoculum: Wash the spores from the infected leaves with cold distilled water and prepare a suspension. Use it immediately.

Raising the plants

Sowing: In potting soil

Temperature: 22/20°C (d/n)

Light: At least 16 hours

Number of plants: 30 plants per sample

Inoculation

Growth stage of plants: Two first leaves fully developed

Method of inoculation: Spraying of spore suspension on leaves.

Special conditions after inoculation

Temperature: 22/20°C (d/n)

Light: 16 hours

Relative humidity: 48 hours after inoculation 100%

Special conditions: A plastic cover over the plants. Closed during the first three days, then slightly open during daytime.

Duration of test

- From sowing to inoculation: 20 days
- From inoculation to last reading: \pm 10 days

Standard varieties: Resistance absent: Pepinex 69
Resistance present: Ellom, Poinsett, Silor

ISF: Among the reference varieties at Downy mildew the variety Silor is mentioned. The breeder of this variety would definitely not qualify this variety as resistant. The variety does have some form of horizontal resistance which results in a few days later infection, but the variety does not contain any of the genes which give resistance to this disease. The same is true for the other varieties mentioned there.

NL proposal: to replace Ellom, Poinsett and Silor by Sonate.

Ad. 55: Resistance to blight and target leaf spot (*Corynespora cassiicola* (Cca)

Method

Maintenance of races

Type of medium:	PDA (Potato Dextrose Agar)
Special conditions:	12-14 days in the dark at 20°C
Remarks:	The spore suspension should have a concentration of 0.5×10^5 spores/ml. Keep maximum 4 days in refrigerator at 4°C
<u>Preparation of inoculum:</u>	Scrape off the fungus from the nutrient medium, collect it in a beaker and filter it through a cheese cloth.

Raising the plants

Sowing:	In potting soil
Temperature:	22/20°C (d/n)
Light:	At least 16 hours
Number of plants:	30 plants per sample

Inoculation

Growth stage of plants:	The plants should have a first leaf with a diameter of three centimeters
Method of inoculation:	Spraying of spore suspension on leaves

Special conditions after inoculation

Temperature:	25/15°C (d/n)
Light:	At least 16 hours
Special conditions:	A plastic cover over the plants. Closed during the first three days. Then slightly open at daytime.

Duration of test

- From sowing to inoculation: 12-13 days
- From inoculation to last reading: 8-10 days

<u>Standard varieties:</u>	Resistance absent: Beth Alpha Resistance present: Corona (C)
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Ad. 56: Resistance to Cucumber Vein Yellowing Virus (CVYV)

Method

Maintenance of isolate

Type of medium:	On susceptible living plants
Special conditions:	Fresh inoculum or stored for maximum 3 months at – 20°C

Execution of test

Growth stage of plants:	Appearance of first leaf
Temperature:	16 to 30°C
Light:	16 hours
Growing method:	Glasshouse
Method of inoculation:	Mechanical, by rubbing of cotyledons
Duration of test:	From inoculation to reading: 14 days
Number of plants tested:	At least 15 plants
Standard varieties:	Susceptible: Corona (C) Resistant: Tornac
Remark:	Resistant varieties may give a slight discoloration of the veins of older leaves

Ad. 57: Resistance to Zucchini Yellow Mosaic Virus (ZYMV)

Method

Maintenance of isolate

Type of medium:	On susceptible living plants
Special conditions:	Fresh inoculum or stored for maximum 6 months at - 20°C

Execution of test

Growth stage of plants:	Appearance of first leaf
Temperature:	23 to 25°C day and night
Light:	16 hours
Growing method:	Glasshouse
Method of inoculation:	Mechanical, by rubbing of cotyledons
Duration of test:	From inoculation to reading: 14 days
Number of plants tested:	At least 15 plants
Standard varieties:	Susceptible: Corona (C) Resistant: Dina
Remark:	Resistant varieties may give a slight discoloration of the veins of older leaves. Susceptible varieties give systemic mosaic symptoms.

9. Literature

Kristkova, E., Lebeda, A., Vinter, V., Blahousek, O., 2003, Genetic resources of the genus *Cucumis* and their morphological description, Hort. Sci., Prague, 30, pag 14-42.

Messiaen, C.M., Blancard, D., Rouxel, F., Lafon, R., 1991, Les maladies des plantes maraîchères, INRA, Paris, Fr.

Recommended Codes for Pest Organisms in Vegetable Crops, 2004, ISF.

Wehner, Todd C, Vegetable Cultivar Descriptions for North America, Dept. of Horticultural Science, North Carolina University, Raleigh, US.

Xie, J., Wehner, T.C., Gene List 2001 for cucumber, Dept. of Horticultural Science, North Carolina University, Raleigh, US.

Vilmorin-Andrieux, M.M., The Vegetable Garden, John Murray (Publishers), Ltd., London.

Harrison, B.E., Masefield, G.B., Wallis, M., 1969, The Oxford Book of Food Plants, Oxford University Press.

Grubben, G.J.H & Denton, O.A., 2004, Plant Resources of Tropical Africa 2. Vegetables, Prota Foundation, Wageningen, Netherlands.

Tapley, W.T., Enzie, W.D., Eseltine, G.P. van, 1937, The Vegetables of New York, New York State Agricultural Experiment Station.

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)
<p>TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights</p> <p>“In the case of hybrid varieties which are the subject of an application for plant breeders' rights, and where the parent lines are to be submitted as a part of the examination of the hybrid variety, this Technical Questionnaire should be completed for each of the parent lines, in addition to being completed for the hybrid variety.”</p>		
1. Subject of the Technical Questionnaire		
1.1 Botanical name	<input type="text" value="Cucumis sativus L."/>	
1.2 Common name	<input type="text" value="Cucumber, Gherkin"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
Telephone No.	<input type="text"/>	
Fax No.	<input type="text"/>	
E-mail address	<input type="text"/>	
Breeder (if different from applicant)	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>3. Proposed denomination and breeder's reference</p> <p>Proposed denomination (if available) <input style="width: 90%; height: 20px;" type="text"/></p> <p>Breeder's reference <input style="width: 90%; height: 20px;" type="text"/></p>		
<p>ISF: We have objections to questions 4.1 and GN 32 in the TQ in which detailed information is asked about the parent lines. In case a hybrid variety is applied for Plant Breeders Rights, breeders feel that they do not wish to give any information about the relevant parent lines. This is not standard practice in vegetable crops, and we propose to delete these parts.</p>		
<p>#4. Information on the breeding scheme and propagation of the variety</p> <p>4.1 Breeding scheme</p>		
<p>“Variety resulting from:</p> <p>“4.1.1 Crossing</p> <p style="margin-left: 40px;">“(a) controlled cross [] (please state parent varieties)</p> <p style="margin-left: 40px;">“(b) partially known cross [] (please state known parent variety(ies))</p> <p style="margin-left: 40px;">“(c) unknown cross []</p> <p>“4.1.2 Discovery and development [] (please state where and when discovered and how developed)</p> <p>“4.1.3 Other []” (please provide details)”</p> <div style="border: 1px solid black; height: 30px; width: 40%; margin: 10px auto;"></div>		

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<hr/>		
4.2 Method of propagating the variety		
4.2.1 Seed-propagated varieties		
“(a) Self-pollination		[]
“(b) Cross-pollination		
(i) population		[]
(ii) synthetic variety		[]
“(c) Hybrid		[]
“(d) Other		[]
(please provide details)”		
<i>ISF: to add the option “parent line”</i>		
<i>NL: oke</i>		
4.2.2 Vegetatively propagated varieties		
“(a) cuttings		[]
“(b) <i>in vitro</i> propagation		[]
“(c) other (state method)		[]
[... ..]		
4.2.3 Other		[]
(please provide details)”		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p data-bbox="209 331 304 376">GN 32</p> <p data-bbox="188 416 1430 524">“In the case of hybrid varieties the production scheme for the hybrid should be provided on a separate sheet. This should provide details of all the parent lines required for propagating the hybrid e.g.</p> <p data-bbox="268 562 464 600">“<i>Single Hybrid</i></p> <p data-bbox="331 636 927 674">“(… female parent …) x (… male parent …)</p> <p data-bbox="268 710 528 748">“<i>Three-Way Hybrid</i></p> <p data-bbox="331 784 863 822">“(… female line …) x (… male line …)</p> <p data-bbox="416 857 1235 896">“=> single hybrid used as female parent x (… male parent …)</p> <p data-bbox="188 931 632 969">“and should identify in particular:</p> <p data-bbox="268 1005 619 1043">“(a) any male sterile lines</p> <p data-bbox="268 1043 887 1081">“(b) maintenance system of male sterile lines.”</p> <p data-bbox="197 1117 1193 1155"><i>F; GN 32 : We think it is more relevant in agricultural crop. Not to add here.</i></p> <p data-bbox="197 1191 584 1229"><i>NL proposal to delete GN 32</i></p>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
<p>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).</p>			
	Characteristics	Example Varieties	Note
5.1 (1)	Cotyledon: bitterness		
	absent	Rocket GS (C), Sandra (C)	1 []
	present	Farbio (C), Levo (G), Sporu (C)	9 []
5.2 (14)	Plant: sex expression		
	generally more male than female flowers	Hokus (G)	1 []
	mainly female flowers	Levo (G), Toska 70 (C)	2 []
	almost exclusively female flowers	Farbio (C), Sandra (C), Wilma (G)	3 []
	hermaphrodite and male flowers	Sunsweet (C),	4 []
5.3 (18)	Parthenocarpy		
	absent	Levo (G), Toska 70 (C)	1 []
	present	Farbio (C), Rocket GS (C), Sandra (C), Wilma (G)	9 []
5.4 (19)	Fruit: length		
	very short	De Russie (C), Sunsweet (C)	1 []
	short	Levo (G), Tagor (C)	3 []
	medium	Gemini (C), Jazzer (C)	5 []
	long	Corona (C)	7 []
	very long	Kaliber (C)	9 []

TECHNICAL QUESTIONNAIRE		Page {x} of {y}	Reference Number:
Characteristics		Example Varieties	Note
5.5 (24)	Fruit: shape of stem end		
	necked	Sandra (C), Tasty Green (C)	1 []
	acute	De Massy (G)	2 []
	obtuse	Maram (C), Score (G), Tagor (g)	3 []
5.6 (26)	Fruit: ground color of skin at market stage		
	white	Bonneuil (C)	1 []
	yellow	Gele Tros (C)	2 []
	green	Corona (C)	3 []
5.7 (35)	Fruit: type of vestiture		
	hairs only	Doplus (G), Silor (C)	1 []
	prickles only	Corona (C), Jazzer (C), Tagor	2 []
	hairs and prickles	De Bourbonne (G), De Massy (G)	3 []
5.8 (37)	Fruit: color of vestiture		
	white	Jazzer (C)	1 []
	light brown	Akito (C)	2 []
	dark brown	Satina (G)	3 []
	black	Gele Tros (C), Vert petit de Paris (G)	4 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
<p>6. Similar varieties and differences from these varieties</p> <p><i>Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.</i></p>			
Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<p>Comments:</p>			

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>#7. Additional information which may help in the examination of the variety</p> <p>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?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>(If yes, please provide details)</p> <p>7.2 Are there any special conditions for growing the variety or conducting the examination?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>(If yes, please provide details)</p> <p>7.3 Other information</p> <div style="background-color: #e0e0e0; padding: 5px;"> <p>7.3.1 Main use</p> <p>(a) Processing <input type="checkbox"/></p> <p>(b) Fresh market <input type="checkbox"/></p> <p>(c) other <input type="checkbox"/></p> <p>(please provide details)</p> <p>7.3.2 Type of culture</p> <p>(a) Greenhouse, staked <input type="checkbox"/></p> <p>(b) Greenhouse, non staked <input type="checkbox"/></p> <p>(c) In the open,, staked <input type="checkbox"/></p> <p>(d) In the open, non staked <input type="checkbox"/></p> <p>(c) other <input type="checkbox"/></p> <p>(please provide details)</p> <p>7.3.3 Fruit type</p> <p>(a) Gherkin <input type="checkbox"/></p> <p>(b) Cucumber <input type="checkbox"/></p> <p style="margin-left: 20px;">1. BethAlpha</p> <p style="margin-left: 20px;">2. Dutch type</p> <p style="margin-left: 20px;">3. American Slicer</p> <p style="margin-left: 20px;">4. Asian</p> <p style="margin-left: 20px;">5. other</p> <p>(c) other <input type="checkbox"/></p> <p>(please provide details)</p> </div> <p>“A representative color photograph of the variety should accompany the Technical Questionnaire.”</p> <p>ISF: ASW 16 = "A representative color photograph of the variety SHOULD accompany the Technical Questionnaire".</p> <p>ISF has indicated its objections to this requirement on previous occasions.</p> <p>We repeat our objections here again.</p> <p>F: to replace by: a representative photography of the fruit of the variety.....</p>		

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>8. Authorization for release</p> <p>(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?</p> <p>Yes [] No []</p> <p>(b) Has such authorization been obtained?</p> <p>Yes [] No []</p> <p>If the answer to (b) is yes, please attach a copy of the authorization.</p>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:												
<p>9. Information on plant material to be examined or submitted for examination.</p> <p>9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.</p> <p>9.2 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 the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:</p> <table data-bbox="284 801 1407 1061"><tr><td>(a) Microorganisms (e.g. virus, bacteria, phytoplasma)</td><td>Yes []</td><td>No []</td></tr><tr><td>(b) Chemical treatment (e.g. growth retardant, pesticide)</td><td>Yes []</td><td>No []</td></tr><tr><td>(c) Tissue culture</td><td>Yes []</td><td>No []</td></tr><tr><td>(d) Other factors</td><td>Yes []</td><td>No []</td></tr></table> <p>Please provide details for where you have indicated “yes”.</p> <p>.....</p> <p>“9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?</p> <p>Yes []</p> <p>(please provide details as specified by the Authority)</p> <p>No []”</p>			(a) Microorganisms (e.g. virus, bacteria, phytoplasma)	Yes []	No []	(b) Chemical treatment (e.g. growth retardant, pesticide)	Yes []	No []	(c) Tissue culture	Yes []	No []	(d) Other factors	Yes []	No []
(a) Microorganisms (e.g. virus, bacteria, phytoplasma)	Yes []	No []												
(b) Chemical treatment (e.g. growth retardant, pesticide)	Yes []	No []												
(c) Tissue culture	Yes []	No []												
(d) Other factors	Yes []	No []												
<p>10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:</p> <table data-bbox="284 1756 1430 1890"><tr><td>Applicant's name</td><td colspan="2"><input type="text"/></td></tr><tr><td>Signature</td><td><input type="text"/></td><td>Date <input type="text"/></td></tr></table>			Applicant's name	<input type="text"/>		Signature	<input type="text"/>	Date <input type="text"/>						
Applicant's name	<input type="text"/>													
Signature	<input type="text"/>	Date <input type="text"/>												

[End of document]

11. ENDNOTE

Comments

Section 2.3

D: proposal to reduce the number of seeds to 1000;

F: the applicant has to supply 1500 seeds. It seems to be a big quantity.

In the old guideline only 20g have to be supplied.

- Weight of 1000 seeds (average) in cucumber: 28g, so 1500 seeds corresponds to around 42g, instead of 20g...
- Do we really need to double the quantity of seeds?

NL: proposal: to keep 1500 seeds (melon is 2000 seeds, tomato 2500, pepper 2500)

Section 4.2.3

ISF: "Cross pollinated varieties" are not very relevant in *Cucumis sativus*, or is this related to the pollinator line?

NL: proposal: cucumber is autogamous (forced) but also a cross pollinating species (open pollinated varieties). Proposal to keep.

Section 5.3

F: We propose to add "Young fruit: type of vestiture"

We propose to replace "Fruit: color of vestiture" by "Young fruit: color of vestiture"

NL: see the discussion at the relevant characteristics

General Comments on Chapter 7:

It is proposed not make a division between cucumber and gherkin. There are several considerations that support this proposal:

- Within the species *Cucumis sativus* L., one of the divisions of varieties that is commonly known, is between cucumber and gherkin. This division is also made in the European Common Catalogue of vegetable species. However, this division is not a botanical one: there is no specific subspecies of gherkin or cucumber to be found in literature.
- The division between cucumber and gherkin seems to be based only on the use of the fruit: gherkin to indicate that the fruit is usually pickled; cucumber to indicate that the fruit is eaten fresh. So whether a *Cucumis sativus* variety is a gherkin or a cucumber, is defined by its use.
- Furthermore, in connection with this different use, usually a gherkin fruit is harvested at a young stage. But this stage of the fruit cannot be exactly described or defined, because it is the market or the industry that demands the size or development stage of the fruit. It can range from a very small fruit, picked just after flowering, to a fruit that is fully developed but still green.
- Within the species *Cucumis sativus* L. there are several morphological types of fruit; in different regions, the perception of what the morphological characteristics of a gherkin or a cucumber are, differ from one another.

Sk has no objection to have no division between cucumber and gherkin
ISF agrees that all Cucumis sativus should be described in one and the same way
NL: conclusion: one guideline, with no separate characteristics for cucumber and gherkin
ISF: General comment (also made on previous occasions)
The Example varieties are in several cases very old (e.g. Levo, Kaliber, Kastor) and we question whether these are still being maintained. We wonder who is providing the examining offices now with the seeds. Who is watching over the variety's identity? We propose to test whether there are still official maintainers for these varieties.

NL: invitation to TWV to delete and add example varieties

Comment on characteristic 1: Cotyledon: bitterness

ISF: VG Cotyledon: bitterness
Bitterness cannot be assessed in a visual way, so VG should be changed into MG or MS
NL: proposal to keep this, tasting is not measuring

Comment on characteristic 3: Plant: length of main stem

Proposal to delete char. 3, because length of main stem in fact only can be observed when the plant has stopped to grow, at the end of the life cycle
D, SK, ISF, F agree
NL conclusion: to delete

Comment on characteristic 5: Leaf blade: attitude

SK, ISF, F agree to add, NL to add

Comment on characteristic 7: Leaf blade: ratio length of blade/length of terminal lobe

SK agree
E: Ch.7 Ratio leaf blade length /terminal lobe length. The inverse ratio is more intuitive concept; it represents the relative length of the terminal lobe. Proposal: *to indicate Ratio terminal lobe length / leaf blade length*

F agrees with Spanish proposal
NL: proposal to use the inverse ratio: this means that when the ratio is large, the lobe is relatively short.

Comment on characteristic 8: Leaf blade: shape of apex of terminal lobe

SK, F agree
NL: to add

Comment on characteristic 11: Leaf blade: undulation of margin

F agrees with the levels of expression

Comment on characteristic 12: Leaf blade: dentation of margin

F agrees to add

Comment on characteristic 15: Plant: number of female flowers per node

ISF: We understand the need for extension of the old protocol, however this subdivision is too detailed and rather subjective. There is an environmental component involved. We therefore propose the following:

predominantly one or two
predominantly three or four
predominantly five or more

F: proposal to add the state of expression “predominantly three or four” in between.

NL: proposal to keep, this subdivision is quite clear and easy to observe, the wording indicates that it is not absolute. F to provide an example variety for the proposed state.

Comment on characteristic 16: Young fruit: type of vestiture

Comment on characteristic 17: Young fruit: color of vestiture

Discussion on the following characteristics 16 and 17, in connection with characteristics New (x) and (xi):

SK agree to delete 16 and 17, because the observation in the stage of young fruit is difficult
E: Ch 16 and 17. The characteristics of vestiture (type and color) are easier to observe in the first stages of the fruit than later for all the types of varieties. Proposal :*To keep the young fruit stage as time to observe.*

ISF : We feel that characteristics 16 & 17 are useful and char's which are easy to assess, and for which there is still variation. We would like to retain these char's. And possibly discuss the addition of "For prickled varieties only: Number of prickles: Few - Medium - Many".

F: “type of vestiture” and “color of vestiture”: as the Spanish colleague, we would like to keep these characteristics. We don't have any experiences with the light brown and dark brown states of expression...

NL: The characteristics 16 and 17 are characteristics probably in connection with the use of the fruits in a young stage, maybe as gherkins for pickling. However, this stage is not defined and might be different for every use and country or region. Moreover, in a stage younger than fourteen days, the color of the vestiture on the fruit, and also the kind of vestiture cannot be observed: the tissue on the skin which will form the hairs or prickles is still not dried, but consists of living, green cells. The color can only be observed when the tissue is dead. This is the reason why the proposal still is to delete these. The stage at which to describe the fruit characteristics, among which those two characteristics (New (x) and (xi)), which is much easier and which is the same for all fruit types, is given in the explanation under chapter 8

Comment on characteristic 18: Parthenocarpy

E: Parthenocarpy: Too complicate to divide the trials in two glasshouses, with and without insects. In fact a special trial is needed to observe it adequately. Proposal : To delete the asterisk.

F: Parthenocarpy.: We agree your explanation. It is a very important characteristic; we prefer to maintain the asterisk.

NL: to keep the characteristic. It is very distinctive

Comment on characteristic 22: Fruit: core diameter in relation to diameter of fruit

F: We observed very little variability in this characteristic. We propose to delete it.
NL: between different types and also within (depending on what type) there is variability.
Proposal to keep

Comment on characteristic 23: Fruit: shape in transverse section

SK agree
F: Is it possible to add a drawing or a photograph?

NL: drawing added

Comment on characteristic 26: Fruit: shape of calyx end

ISF: to add a drawing or picture as a clarification
NL: drawing added

Comments on characteristic 29: Fruit: ribs
characteristic 30: Fruit: sutures
characteristic 31: Fruit: creasing

ISF comments on characteristics 29 to 31:

Characteristic 29: Fruit: ribs

In the example varieties, Corona is mentioned as absent. This should be present, as in the old protocol.

We are in favour of first asking Absent or Present and then in the next question ask for Prominence.

Characteristic 30: Fruit: sutures

We question the relevance for cucumber & gherkin and propose to delete this char.

Characteristic 31: Fruit: creasing

What is the value of this addition, next to 'ribs'.

Characteristic 34: Fruit: coloration of ribs compared to ground color. We propose to maintain this char.

E: comments on characteristics 29 to 31

I think that may be confusion between ribs and sutures in certain groups (slicer and gherkin).
May be confusion also between ribs and creasing in Dutch cucumber

We agree that the concept of ribs in the ancient guideline must be split at least in two different concepts: Creasing (Wrinkles) and Ribs(straight relieves). We have the doubt if the division between Ribs and Sutures is clear.

We have observed a similar pair of characteristics in watermelon along several years and the conclusion was that the same variety may have both depressed and prominent lines on the skin, depending on the fruit and the year.

However if it is checked that the characteristic of sutures(depressed straight relieves) in cucumber varieties is uniform for some varieties,(not appear fruits with prominent straight relieves) , the characteristic should be accepted. For the moment we have no a defined proposal about sutures.

F comments on characteristics 29 to 31

Characteristic 29: We agree the Spanish proposal. “Fruit: prominence of ribs”, with 4 states of expression.

- Please add a drawing to well illustrate what is a rib.

Characteristic 30: “Fruit: sutures” – We agree to add. The drawing has to be improved to well illustrate what is a suture.

Perhaps, Marian you can bring with you some cucumber fruits in your luggage, and we could touch and visualise what is a rib, a suture, the creasing... No it's a joke. But if you have some good photographs, I could be very useful, if we don't want to spend hours on semantic problems...

- Characteristic 31: “Fruit: creasing” – We agree to add. Is the asterisk necessary?
- Characteristic 32: “Degree of creasing” – We agree to add.
- Characteristic 34: Fruit: coloration of ribs compared to ground color” and Char.29 – We agree to delete.
- Characteristic 36: “Fruit:density of vestiture” – we agree to add.

SK agrees with deleting 29 and 33

NL explanation: The wording suture and creasing of these characteristics is chosen analogous to the melon guideline. The Cucumis sativus fruit has 10 sutures (analogous to Cucumis melo). They are related to the structure of the 5- merous flower. These sutures are depressed, paralel ridges, running from the calyx end of the fruit to the peduncle end, They are very distinctive for some varieties. Ribs lie near the position of the sutures, but they lie above the surface. Creasing is the longitudinal wrinkling of the skin of the fruit, independent of the position of the sutures.

Maybe there are better understandable words fot these characteristics?

Pictures of sutures, ribs and creasing are added in the explanation

Comments on characteristic 29: Fruit: ribs

F agrees with modification of E.

NL: proposal: agree with E

CZ: Please add explanation what you mean by it.

E: To keep, but with the new meaning of ribs

Fruit: Prominence of ribs

Absent or very weak	1	Darius
Weak	2	Diana
Medium	3	Sprint
Strong	4	Cornichon de Paris

Comments on characteristic 30: Fruit: suture

D: Please give details

SK: to improve the picture. What is the difference between sutures and creasing?

NL: see the explanation above and in chapter 8

Comments on characteristic 31: Fruit: creasing

CZ: Please add explanation what you mean by it.

D: How to distinguish between ribs and creasing?

NL: see the explanation above and in chapter 8

Comments on characteristic 35: Fruit: type of vestiture

SK agree

Comments on characteristic 36: Fruit: density of vestiture

SK agree

Comments on characteristic 37: Fruit: color of vestiture

D: proposal to delete, see before

SK: to leave it

ISF: proposal to maintain, mainly in relation to the Asian types

E: The brown prickles appear in varieties with white prickles in the young fruit stage. Is a change in the prickles color at maturity. In our opinion must be observed independently, at maturity. It should be a concentrate quantitative characteristic.

Proposal:

Ch. New (Only varieties with white vestiture at stage of young fruit)

Fruit:Color of vestiture

- | | |
|----------------|----------------|
| 1.White | Jazzer |
| 2.Light brown | Regal,Spiffy |
| 3 Medium brown | Medusa,Olympia |
| 4.Dark brown | Mathilde |

F: does not have experience, will discuss with Spain

NL: to combine the proposal of E with New (xi)

Comments on characteristic 39: Fruit: size of warts

SK: agree

Comments on characteristic 40: Fruit: dotted stripes

SK: agree, maybe to add picture

F: We don't understand the meaning of "dotted stripes". We know what are stripes at the apical part of the fruit, but what is a dotted stripe?

NL explanation: dotted is what used to be called marbled, drawing is added under 8

Comments on characteristic 43: Fruit: type of dots

E: Fruit: Type of dots:

We understand it more as

Distribution of the dots:

- | | | |
|--------------------------------|---|--------------------|
| Uniformly spread | 1 | Marinda, White Sun |
| Spread and concentrated | 2 | Anico |
| Concentrated on areas or lines | 3 | Cornichon de Paris |

Proposal NL to replace 36 by this proposal from E, with VG and QL; D and ISF agree with proposal

Comments on characteristic 45: Fruit: glaucosity

Republic of Korea proposal from last year, to provide example varieties

Sk agree; ISF understands, but find the word confusing; possible to add a photograph?

F: "Fruit: glaucosity". We need some explanation. Are we talking about the hue of the secondary color of green fruit? For example, the fruit can be green but with a secondary color more or less grey blue color. Or do we speak of wax? A thin layer at the surface of the fruit, you can put off if you just rub a little bit the skin? Please provide us explanation.

NL: proposal to add a botanical definition of glaucosity in the explanation, see chapter 8

Comments on characteristic 47: Fruit: thickness of peduncle

SK, F agree

Comments on characteristic 49: Fruit: bitterness at stem end

D: to delete? char. is quite influenced by environment

SK, F agree; ISF proposes to maintain it as it is genetic in origin.

Proposal NL to delete: bitterness is already included in the cotyledon characteristic and the expression in the fruit is influenced by the environment.

NL: adapted to QL, except for 45

Comments on characteristic 50: Resistance to *Cladosporium cucumerinum* (Ccu)

D: no significance in our country according to Federal Biological Institute

NL proposal to introduce a condensed quantitative scale for CMV and powdery mildew, F agrees

Comments on characteristics 50, 51, 52, 53, 54

E: The PQ in certain resistances must be convincingly explained. Actually, in our knowledge, qualitative or quantitative characteristics should be in general more appropriate for resistance characteristics.

F: Ad. 50, 52, 53, 54: to put the latin name in italics. To update the latin name, if we change of nomenclature like in melon guideline.

NL: France to provide the update

Comments on characteristics 52 and 53: Resistance to powdery mildew

F: for char. 52 and 53 the new latin name to be introduced?

NL: France to provide the new latin names

Comments on characteristic 53: Resistance to powdery mildew (*Erysiphe cichoracearum*)

ISF, F proposal to keep

NL: only to keep if this resistance distincts varieties apart from the *Sphaerotheca* resistance

Comments on characteristic 54: Resistance to downy mildew (*Pseudoperonospora cubensis*) (Pc)

ISF: We propose to change the states of expression (as in char. 46) into susceptible, intermediate resistant and highly resistant. We think this char. is not QL, but QN
NL: ISF to provide a protocol and example varieties

Comments on characteristic 55: Resistance to *Corynespora* blight and target leaf spot (*Corynespora cassicola*) (Cca)

D: no significance in our country according to Federal Biological Institute
NL: to keep, very much significant in the long cucumbers

Comments on characteristic 57: Resistance to Zucchini Yellow Mosaic Virus (ZYMV)

ISF: We propose to add Resistance to CYSDV (Cucumber Yellow Stunting Disorder Virus) with states absent/present

NL: ISF to provide a protocol and example varieties

Comment on technical Questionnaire ASW 13

F: We think this comment is relevant in the case of agriculture crop, where you have to study the components (parent's lines) to protect a hybrid (for example in maize). Of course, in vegetable crops, we study parents lines, but as a variety, as a hybrid, not as the component of a hybrid. We think it is not necessary to add the paragraph.

NL proposal to delete ASW 13

Comment on Technical Questionnaire, Section 5

- F: we propose to replace in the technical questionnaire:
 - o Fruit: type of vestiture
 - o Fruit: color of vestiture
- by:
 - o Young fruit: type of vestiture
 - o Young fruit: color of vestiture

NL: proposal depending on previous discussion

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