

**Technical Working Party for Vegetables**

TWV/57/23

**Fifty-Seventh Session  
Antalya, Türkiye, May 1 to 5, 2023****Original:** English  
**Date:** April 2, 2023

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**PARTIAL REVISION OF THE TEST GUIDELINES FOR VEGETABLE MARROW, SQUASH***Document prepared by an expert from France**Disclaimer: this document does not represent UPOV policies or guidance*

1. The purpose of this document is to present a proposal for a partial revision of the Test Guidelines for Vegetable Marrow, Squash (document TG/119/4 Corr. 2).
2. The Technical Working Party for Vegetables (TWV), at its fifty-sixth session organized by electronic means, from April 18 to 22, 2022, agreed that the Test Guidelines for Vegetable Marrow, Squash (document TG/119/4 Corr. 2) be partially revised (see document TWV/56/22 “Report”, Annex II).
3. The following changes are proposed:
  - (a) Addition of new Characteristic 82 “Resistance to *Zucchini yellow mosaic virus* (ZYMV)” at the end of the Table of Characteristics
  - (b) Addition of an explanation Ad. 82 “Resistance to *Zucchini yellow mosaic virus* (ZYMV)” in Chapter 8.2 “Explanations for individual characteristics”
  - (c) Addition of new Characteristic 83 “Resistance to *Watermelon mosaic virus* (WMV)” at the end of the Table of Characteristics
  - (d) Addition of an explanation Ad. 83 “Resistance to *Watermelon mosaic virus* (WMV)” in Chapter 8.2 “Explanations for individual characteristics”
  - (e) Inclusion of characteristics from the Table of Characteristics in the Technical Questionnaire (see documents TWV/56/22 “Report”, paragraphs 102 and 103, and TWP/7/6 “Revision of Test Guidelines”)

Proposal to add new Characteristic 82 “Resistance to *Zucchini yellow mosaic virus (ZYMV)*” at the end of the Table of Characteristics

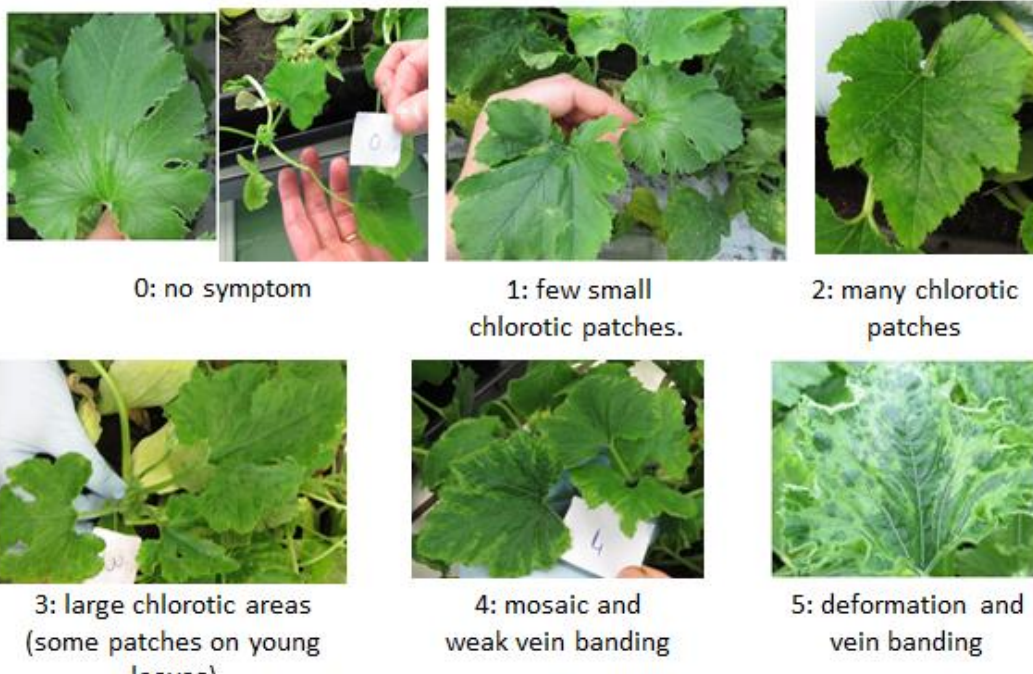
	English	français	Deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>82. VS (+)</b>	<b>Resistance to <i>Zucchini yellow mosaic virus (ZYMV)</i></b>	<b>Resistance au <i>Zucchini yellow mosaic virus (ZYMV)</i></b>	<b>Resistenz gegen <i>Zucchini yellow mosaic virus (ZYMV)</i></b>	<b>Resistencia a <i>Zucchini yellow mosaic virus (ZYMV)</i></b>		
<b>QN</b>	absent or low	absente ou faible	gering	baja	Cora	1
	medium	moyenne	mittel	media	Mirza	2
	high	élevée	hoch	alta	Mikonos	3

Proposed addition of an explanation Ad. 82 “Resistance to *Zucchini yellow mosaic virus (ZYMV)*” in Chapter 8.2 “Explanations for individual characteristics”

Ad. 82: Resistance to *Zucchini yellow mosaic virus (ZYMV)*

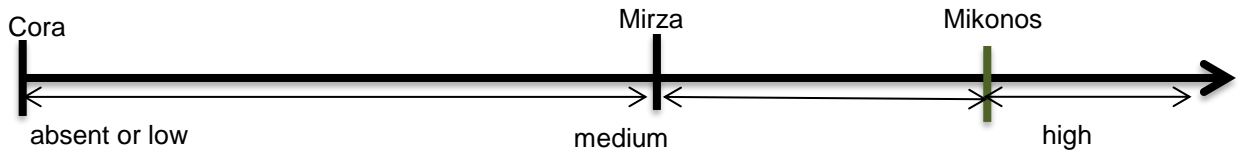
1.	Pathogen	<i>Zucchini yellow mosaic virus (ZYMV)</i>
2.	Quarantine status	No
3.	Host species	<i>Cucurbita pepo</i> L.
4.	Source of inoculum	GEVES (FR) <sup>1</sup>
5.	Isolate	e.g. strain E9 = MAT/REF/06-08-02-02
6.	Establishment isolate identity	-
7.	Establishment pathogenicity	Symptoms on susceptible squash variety
8.	Multiplication inoculum	
8.1	Multiplication medium	Living plant
8.2	Multiplication variety	e.g. Cora
8.3	Plant stage at inoculation	-
8.4	Inoculation medium	-
8.5	Inoculation method	-
8.6	Harvest of inoculum	-
8.7	Check of harvested inoculum	-
8.8	Shelf life/viability inoculum	-
9.	Format of the test	
9.1	Number of plants per genotype	At least 20
9.2	Number of replicates	At least 2 (e.g. 2x10 plants)
9.3	Control varieties	To illustrate and define the UPOV states <ul style="list-style-type: none"> <li>absent to low resistance (=susceptible): Cora</li> <li>medium resistance: Mirza (low threshold of medium resistance level):</li> <li>high resistance: Mikonos (low threshold of high resistance level)</li> </ul>
9.4	Test design	add non inoculated plants
9.5	Test facility	Climatic room or greenhouse
9.6	Temperature	e.g. 22°C or 24°C/18°C
9.7	Light	12h-16h
9.8	Season	

<sup>1</sup> matref@geves.fr

9.9	Special measures	keep glasshouse free of aphids
10.	Inoculation	
10.1	Preparation inoculum	1 g leaf with symptoms with 4 mL of PBS with carborundum (400 mg) and activated carbon (400 mg) or similar buffer, homogenize
10.2	Quantification inoculum	
10.3	Plant stage at inoculation	First expanded leaf
10.4	Inoculation method	Rubbing cotyledons with virus suspension Optional: repeat the inoculation after 3 days
10.5	First observation	14 days post-inoculation
10.6	Second observation	-
10.7	Final observations	21 days post-inoculation
11.	Observations	
11.1	Method	Visual observation
11.2	Observation scale	Class 0: no symptom Class 1: few small chlorotic patches Class 2: many chlorotic patches Class 3: large chlorotic areas (some patches on young leaves) Class 4: mosaic and weak vein banding Class 5: deformation and vein banding
 <p style="text-align: center;">0: no symptom                      1: few small chlorotic patches.                      2: many chlorotic patches</p> <p style="text-align: center;">3: large chlorotic areas (some patches on young leaves)                      4: mosaic and weak vein banding                      5: deformation and vein banding</p>		
Courtesy of GEVES-SNES		
11.3	Validation of test	The high resistance control (Mikonos), the medium resistance control (Mirza) and the absent to low resistance (=susceptible) control (Cora) are necessary to validate the aggressiveness of test.  Results should be compared with results of controls, based on disease index (DI) and distribution of plants over the classes.
11.4	Off-types	-

<p>12.</p>	<p>Interpretation of data in terms of UPOV characteristic states</p>	<ul style="list-style-type: none"> <li>- Note 1: Most plants are in class 4 and/or 5 (absent to low resistance = susceptible)</li> <li>- Note 2 Most plants are in class 2 and/or 3 (medium resistance)</li> <li>- Note 3: Most plants are in class 0 and/or 1 (high resistance)</li> </ul> <p>A variety with a lower resistance than Mirza (note 2) will be described note 1. A variety with a lower resistance than Mikonos (note 3), will be described note 2.</p> <p>An additional statistical analysis can be used to finalize the pathologist's raw observation to the assessment of uniformity, and relative position regarding the controls results.</p>
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Resistance to ZYMV:



<p>13.</p>	<p>Critical control points</p>	<p>Date of notation may be adapted depending on expression of symptoms on controls.          Environmental conditions can influence the expression of symptoms over time. In this case a second notation could be necessary.          Aphids may transmit ZYMV as well as other viruses that may contaminate the ZYMV strain. Test should be in aphid-free compartment.</p>
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Proposed addition of new Characteristic 83 “Resistance to *Watermelon mosaic virus* (WMV)” at the end of the Table of Characteristics







	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>83. VS</b>	<b>Resistance to <i>Watermelon mosaic virus</i> (WMV)</b>	<b>Resistance au <i>Watermelon mosaic virus</i> (WMV)</b>	<b>Resistenz gegen <i>Watermelon mosaic virus</i> (WMV)</b>	<b>Resistencia a <i>Watermelon mosaic virus</i> (WMV)</b>		
<b>(+)</b>						
<b>QN</b>	absent	absente	fehlend	ausente	Cora	1
	present	présente	vorhanden	presente	Mikonos, Sofia, Syros	9

Proposed addition of an explanation Ad. 83 “Resistance to *Watermelon mosaic virus* (WMV)” in Chapter 8.2 “Explanations for individual characteristics”

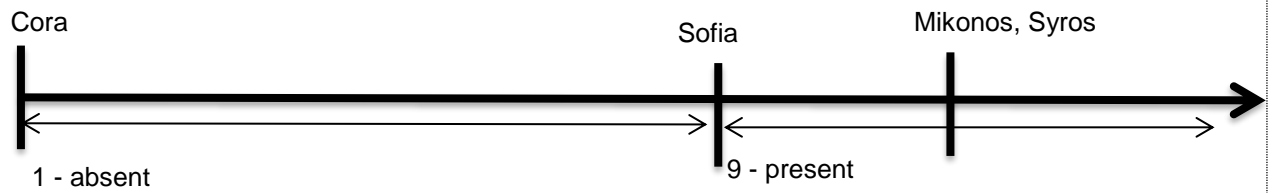
Ad. 83: Resistance to *Watermelon mosaic virus* (WMV)

1.	Pathogen	<i>Watermelon mosaic virus</i> (WMV)
2.	Quarantine status	No
3.	Host species	<i>Cucurbita pepo</i> L.
4.	Source of inoculum	GEVES (FR) <sup>2</sup>
5.	Isolate	e.g., strain LL1A = MAT/REF/06-09-01 <sup>2</sup>
6.	Establishment isolate identity	-
7.	Establishment pathogenicity	Symptoms on susceptible squash variety
8.	Multiplication inoculum	
8.1	Multiplication medium	Living plant
8.2	Multiplication variety	e.g. Cora
8.3	Plant stage at inoculation	-
8.4	Inoculation medium	-
8.5	Inoculation method	-
8.6	Harvest of inoculum	-
8.7	Check of harvested inoculum	-
8.8	Shelf life/viability inoculum	-
9.	Format of the test	
9.1	Number of plants per genotype	At least 20
9.2	Number of replicates	At least 2 (e.g. 2 x 10 plants)
9.3	Control varieties	To illustrate UPOV notes: <ul style="list-style-type: none"> <li>• resistance absent: Cora</li> <li>• resistance present: Sofia (minimum resistance level)</li> </ul> Mikonos, Syros have higher resistance than Sofia, but not resistant enough to illustrate a high resistance.
9.4	Test design	add non inoculated plants
9.5	Test facility	Climatic room or greenhouse
9.6	Temperature	e.g., 22°C or 24°C/18°C
9.7	Light	12h-16h
9.8	Season	
9.9	Special measures	Keep glasshouse free of aphids
10.	Inoculation	

<sup>2</sup> matref@geves.fr

10.1	Preparation inoculum	1 g leaf with symptoms with 4mL of PBS with carborundum (400mg) and activated carbon (400mg) or similar buffer, homogenize
10.2	Quantification inoculum	-
10.3	Plant stage at inoculation	First expanded leaf
10.4	Inoculation method	Rubbing cotyledons with virus suspension Optional: repeat the inoculation after 3 days
10.5	First observation	14 days post-inoculation
10.6	Second observation	-
10.7	Final observations	21 days post-inoculation
11.	Observations	
11.1	Method	Visual observation
11.2	Observation scale	Class 0: no symptom Class 1: few small chlorotic patches Class 2: many chlorotic patches Class 3: large chlorotic areas (some patches on young leaves) Class 4: mosaic, weak vein banding Class 5: deformation and vein banding
<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="text-align: center;">  <p>0: no symptom</p> </div> <div style="text-align: center;">  <p>1: few small chlorotic patches</p> </div> <div style="text-align: center;">  <p>2: many chlorotic patches</p> </div> <div style="text-align: center;">  <p>3: large chlorotic areas (some patches on young leaves)</p> </div> <div style="text-align: center;">  <p>4: mosaic, weak vein banding</p> </div> <div style="text-align: center;">  <p>5: deformation and vein banding</p> </div> </div> <p style="text-align: right; margin-top: 10px;">Courtesy of GEVES-SNES</p>		
11.3	Validation of test	On three controls: Sofia, Mikonos or Syros, and Cora The presence of Syros or Mikonos (and not only Sofia) is necessary to validate the aggressiveness of the test.  Results should be compared with the results of controls, based on disease index (DI) and distribution of plants over the classes.
11.4	Off-types	-
12.	Interpretation of data in terms of UPOV characteristic states	Note 1: Most plants are in class 4 and/or 5 (resistance absent or low to be considered) Note 9: Most plants are in class 0, 1, 2 and/or 3 (resistance present -more or less intensely)  A variety with a lower level of resistance than Sofia (note 9), will be described as note 1  An additional statistical analysis can be used to finalize the pathologist's raw observation to the assessment of uniformity, and relative position regarding the controls results.

Resistance to WMV:



13.	Critical control points	Date of notation may be adapted depending on expression of symptoms on controls. Environmental conditions can influence the expression of symptoms over time. In this case a second notation could be necessary. Aphids may transmit WMV as well as other viruses that may contaminate the WMV strain. Test should be in aphid-free compartment.
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Inclusion of characteristics from the Table of Characteristics in the Technical Questionnaire (see documents TWV/56/22 "Report", paragraphs 102 and 103, and TWP/7/6 "Revision of Test Guidelines")

4. The TWV is invited to consider the inclusion of the following characteristics in the TQ (characteristics for inclusion indicated in highlight and underline):

Char. No.	(*)	Characteristic Name	
		Types of edible varieties: Fruit: type	
4	(*)	Plant: growth habit	
5	(*)	Plant: branching	
8	(*)	<u>Stem: color</u>	
9		<u>Stem: intensity of green color</u>	
13	(*)	<u>Leaf blade: incisions</u>	
15	(*)	Leaf blade: silvery patches	
16		<u>Leaf blade: relative area covered by silvery patches</u>	
17		<u>Petiole: length</u>	
26		<u>Only Zucchini and Rounded Zucchini type varieties: Young fruit: general shape</u>	Option "not applicable" added
27	(*)	<u>Young fruit: main color of skin (excluding color of ribs or grooves)</u>	
29		<u>Only varieties with green color of skin: Young fruit: intensity of green color of skin (as for 27)</u>	Option "not applicable" added
30	(*)	<u>Fruit: general shape</u>	
31.1	(*)	<u>Only Scallop type varieties: Fruit: length</u>	Option "not applicable" added
31.2	(*)	<u>Only Acorn type varieties: Fruit: length</u>	Option "not applicable" added
31.3	(*)	<u>Only Neck type varieties: Fruit: length</u>	Option "not applicable" added
31.4	(*)	<u>Only Zucchini type varieties: Fruit: length</u>	Option "not applicable" added
32.1		<u>Only Scallop type varieties: Fruit: maximum diameter</u>	Option "not applicable" added
32.2		<u>Only Acorn type varieties: Fruit: maximum diameter</u>	Option "not applicable" added
32.3		<u>Only Zucchini type varieties: Fruit: maximum diameter</u>	Option "not applicable" added
34.1	(*)	<u>Only Pumpkin type varieties: Fruit: size</u>	Option "not applicable" added
34.2	(*)	<u>Only Rondini type varieties: Fruit: size</u>	Option "not applicable" added
46	(*)	<u>Fruit: grooves</u>	
50	(*)	Fruit: main color of skin (excluding color of dots, patches, stripes and bands)	
51		<u>Only varieties with yellow color of skin: Fruit: intensity of yellow color of skin (as for 50)</u>	Option "not applicable" added
52		<u>Only varieties with green color of skin: Fruit: intensity of green color of skin (as for 50)</u>	Option "not applicable" added
54		<u>Fruit: stripes in grooves</u>	
57		<u>Fruit: dots</u>	
59		<u>Fruit: secondary green color between ribs (excluding dots)</u>	
61		<u>Fruit: distribution of secondary green color between ribs</u>	
69	(*)	<u>Ripe fruit: main color of skin (excluding color of mottles, patches, stripes and bands)</u>	
71	(*)	<u>Ripe fruit: secondary color of skin (as for 69)</u>	
74	(*)	<u>Ripe fruit: color of flesh</u>	
<u>82</u>		<u>Resistance to Zucchini yellow mosaic virus (ZYMV)</u>	Proposed addition based on current partial revision
<u>83</u>		<u>Resistance to Watermelon mosaic virus (WMV)</u>	Proposed addition based on current partial revision



TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in the Test Guidelines; please mark the state of expression which best corresponds).		
Characteristics	Example Varieties	Note
<b>5.1 Types of edible varieties: Fruit: type</b>		
Pumpkin	Halloween, Little Boo, Small Sugar	1[ ]
Miniature Pumpkin	Jack Be Little	2[ ]
Scallop	Patty Pan, Scallopini	3[ ]
Acorn	Table Queen	4[ ]
Neck	Early Prolific Straightneck, Yellow Summer Crookneck	5[ ]
Zucchini	Ambassador, Beiruti, Clarita, Elite, Ibis, Romano	6[ ]
Rounded Zucchini	De Nice à fruit rond, Redondo	7[ ]
Delicata	Delicata	8[ ]
Spaghetti Squash	Pasta, Vegetable Spaghetti	9[ ]
Rondini	Little Gem	10[ ]
Ölkürbis	Markant	11[ ]
Other		12[ ]
<b>5.2 Plant: growth habit (4)</b>		
bush	Greyzini	1[ ]
semi-trailing	Cinderella, Everest, Twickers	2[ ]
trailing	Becky, Long Green Trailing	3[ ]
<b>5.3 Plant: branching (5)</b>		
absent	Goldi	1[ ]
present	Patty Green Tint	9[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note
<b>5.4 Stem: color</b>		
<b>(8)</b>		
<u>completely green</u>	<u>Becky</u>	1[ ]
<u>partly green and partly yellow</u>	<u>Autumn Gold</u>	2[ ]
<b>5.5 Stem: intensity of green color</b>		
<b>(9)</b>		
<u>very light</u>	<u>Maayan</u>	1[ ]
<u>very light to light</u>		2[ ]
<u>light</u>	<u>Bianchini</u>	3[ ]
<u>light to medium</u>		4[ ]
<u>medium</u>	<u>Cinderella</u>	5[ ]
<u>medium to dark</u>		6[ ]
<u>dark</u>	<u>Greyzini</u>	7[ ]
<u>dark to very dark</u>		8[ ]
<u>very dark</u>	<u>Goldrush</u>	9[ ]
<b>5.6 Leaf blade: incisions</b>		
<b>(13)</b>		
<u>absent or very shallow</u>	<u>Scallopini</u>	1[ ]
<u>very shallow to shallow</u>		2[ ]
<u>shallow</u>	<u>Everest</u>	3[ ]
<u>shallow to medium</u>		4[ ]
<u>medium</u>	<u>Jackpot</u>	5[ ]
<u>medium to deep</u>		6[ ]
<u>deep</u>	<u>Civac</u>	7[ ]
<u>deep to very deep</u>		8[ ]
<u>very deep</u>	<u>Isotta</u>	9[ ]
<b>5.4.7 Leaf blade: silvery patches</b>		
<b>(15)</b>		
<u>absent</u>	<u>Black Forest, Scallopini</u>	1[ ]
<u>present</u>	<u>Civac</u>	9[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note
<b>5.8</b> <b>(16)</b>	<b><u>Leaf blade: relative area covered by silvery patches</u></b>	
<u>very small</u>	<u>Albo</u>	1
<u>very small to small</u>		2
<u>small</u>	<u>Aziz</u>	3
<u>small to medium</u>		4
<u>medium</u>	<u>Ambassador</u>	5
<u>medium to large</u>		6
<u>large</u>	<u>Cora</u>	7
<u>large to very large</u>		8
<u>very large</u>	<u>Summerstar</u>	9
<b>5.9</b> <b>(17)</b>	<b><u>Petiole: length</u></b>	
<u>very short</u>		1
<u>very short to short</u>		2
<u>short</u>	<u>Jack be Little, Karioka</u>	3
<u>short to medium</u>		4
<u>medium</u>	<u>Goldi</u>	5
<u>medium to long</u>		6
<u>long</u>	<u>Autumn Gold, Baikal</u>	7
<u>long to very long</u>		8
<u>very long</u>		9
<b>5.10</b> <b>(26)</b>	<b><u>Only Zucchini and Rounded Zucchini type varieties: Young fruit: general shape</u></b>	
<u>globular</u>	<u>De Nice à Fruit Rond</u>	1
<u>pear shaped</u>	<u>Clarita</u>	2
<u>tapered elliptical</u>	<u>Top Kapi</u>	3
<u>elliptical</u>	<u>Table Dainty</u>	4
<u>cylindrical</u>	<u>Ambassador, Ibis</u>	5
<u>tapered cylindrical</u>		6
<u>not applicable</u>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note
<b>5.11 (27) <u>Young fruit: main color of skin (excluding color of ribs or grooves)</u></b>		
<u>white</u>	<u>White Bush Scallop</u>	1
<u>cream</u>	<u>Tivoli</u>	2
<u>yellow</u>	<u>Goldi</u>	3
<u>green</u>	<u>Elite, Opal, Romano</u>	4
<u>partly white and partly yellow</u>		5
<u>partly white and partly green</u>		6
<u>partly yellow and partly green</u>	<u>Sunburst, Zephyr</u>	7
<b>5.12 (12) <u>Only varieties with green color of skin: Young fruit: intensity of green color of skin (as for 27)</u></b>		
<u>very light</u>	<u>Clarita, Goya, Patty Green Tint</u>	1
<u>very light to light</u>		2
<u>light</u>	<u>Arlika</u>	3
<u>light to very light</u>		4
<u>medium</u>	<u>Baccara</u>	5
<u>medium to dark</u>		6
<u>dark</u>	<u>Arlesa, Sandra, Zefira</u>	7
<u>dark to very dark</u>		8
<u>very dark</u>	<u>Carnaval, Corsair</u>	9
<u>not applicable</u>		
<b>5.13 (30) <u>Fruit: general shape</u></b>		
<u>disc shaped</u>		1
<u>transverse elliptical</u>		2
<u>transverse broad elliptical</u>		3
<u>globular</u>		4
<u>top shaped</u>		5
<u>broad elliptical</u>		6
<u>ovate</u>		7
<u>elliptical</u>		8
<u>cylindrical</u>		9
<u>pear shaped</u>		10
<u>bottle shaped</u>		11
<u>club shaped</u>		12

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note
<b>5.14 Only Scallop type varieties: Fruit: length</b>		
<b>(31.1)</b>		
<u>very short</u>		1
<u>very short to short</u>		2
<u>short</u>	<u>Bennings Green Tint</u>	3
<u>short to medium</u>		4
<u>medium</u>	<u>Sunburst</u>	5
<u>medium to long</u>		6
<u>long</u>	<u>Yellow Bush Scallop</u>	7
<u>long to very long</u>		8
<u>very long</u>		9
<u>not applicable</u>		
<b>5.15 Only Acorn type varieties: Fruit: length</b>		
<b>(31.2)</b>		
<u>very short</u>		1
<u>very short to short</u>		2
<u>short</u>	<u>Table Gold</u>	3
<u>short to medium</u>		4
<u>medium</u>	<u>Swan White Acorn</u>	5
<u>medium to long</u>		6
<u>long</u>	<u>Ebony Table Queen</u>	7
<u>long to very long</u>		8
<u>very long</u>		9
<u>not applicable</u>		
<b>5.16 Only Neck type varieties: Fruit: length</b>		
<b>(31.3)</b>		
<u>very short</u>		1
<u>very short to short</u>		2
<u>short</u>	<u>Wryneck</u>	3
<u>short to medium</u>		4
<u>medium</u>	<u>Yellow Summer Crookneck</u>	5
<u>medium to long</u>		6
<u>long</u>	<u>Sunbar</u>	7
<u>long to very long</u>		8
<u>very long</u>		9
<u>not applicable</u>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note
<b>5.17</b> <u>Only Zucchini type varieties: Fruit: length</u> <b>(31.4)</b>		
<u>very short</u>	<u>Jericho</u>	1
<u>very short to short</u>		2
<u>short</u>	<u>Jedida</u>	3
<u>short to medium</u>		4
<u>medium</u>	<u>Cora</u>	5
<u>medium to long</u>		6
<u>long</u>	<u>Carlotta</u>	7
<u>long to very long</u>		8
<u>very long</u>	<u>Altea</u>	9
<u>not applicable</u>		
<b>5.18</b> <u>Only Scallop type varieties: Fruit: maximum diameter</u> <b>(32.1)</b>		
<u>very small</u>		1
<u>very small to small</u>		2
<u>small</u>	<u>Scallopini</u>	3
<u>small to medium</u>		4
<u>medium</u>	<u>Yellow Bush Scallop</u>	5
<u>medium to large</u>		6
<u>large</u>	<u>White Bush Scallop</u>	7
<u>large to very large</u>		8
<u>very large</u>		9
<u>not applicable</u>		
<b>5.19</b> <u>Only Acorn type varieties: Fruit: maximum diameter</u> <b>(32.2)</b>		
<u>very small</u>		1
<u>very small to small</u>		2
<u>small</u>	<u>Table Gold</u>	3
<u>small to medium</u>		4
<u>medium</u>	<u>Table King</u>	5
<u>medium to large</u>		6
<u>large</u>	<u>Swan White Acorn</u>	7
<u>large to very large</u>		8
<u>very large</u>		9
<u>not applicable</u>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note
<b>5.20 Only Zucchini type varieties: Fruit: maximum diameter</b> <b>(32.3)</b>		
<u>very small</u>		1
<u>very small to small</u>		2
<u>small</u>	<u>Goldi</u>	3
<u>small to medium</u>		4
<u>medium</u>	<u>Opal</u>	5
<u>medium to large</u>		6
<u>large</u>	<u>Jericho, Spidi</u>	7
<u>large to very large</u>		8
<u>very large</u>		9
<u>not applicable</u>		
<b>5.21 Only Pumpkin type varieties: Fruit: size</b> <b>(34.1)</b>		
<u>very small</u>	<u>Wee-B-Little</u>	1
<u>very small to small</u>		2
<u>small</u>	<u>Peek-a-Boo</u>	3
<u>small to medium</u>		4
<u>medium</u>	<u>Spirit</u>	5
<u>medium to large</u>		6
<u>large</u>	<u>Ghost Rider</u>	7
<u>large to very large</u>		8
<u>very large</u>	<u>Howden</u>	9
<u>not applicable</u>		
<b>5.22 Only Rondini type varieties: Fruit: size</b> <b>(34.2)</b>		
<u>very small</u>		1
<u>very small to small</u>		2
<u>small</u>	<u>Pomme d'Or</u>	3
<u>small to medium</u>		4
<u>medium</u>	<u>Rolet</u>	5
<u>medium to large</u>		6
<u>large</u>	<u>Little Gem</u>	7
<u>large to very large</u>		8
<u>very large</u>		9
<u>not applicable</u>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note
<b>5.23</b> <b>(46)</b>	<b>Fruit: grooves</b>	
	<u>absent</u>	1[ ]
	<u>present</u>	9[ ]
<b>5.5 24</b> <b>(50)</b>	<b>Fruit: main color of skin (excluding color of dots, patches, stripes and bands)</b>	
	white	Pâtisson blanc panaché de vert 1[ ]
	cream	Early White Bush Scallop, Little Boo 2[ ]
	yellow	Autumn Gold 3[ ]
	green	Ambassador, Baby Bear 4[ ]
	partly white and partly yellow	5[ ]
	partly white and partly green	6[ ]
	partly yellow and partly green	Sunburst, Zephyr 7[ ]
<b>5.25</b> <b>(51)</b>	<b>Only varieties with yellow color of skin: Fruit: intensity of yellow color of skin (as for 50)</b>	
	<u>very light</u>	1[ ]
	<u>very light to light</u>	2[ ]
	<u>light</u>	3[ ]
	<u>light to medium</u>	4[ ]
	<u>medium</u>	5[ ]
	<u>medium to dark</u>	6[ ]
	<u>dark</u>	7[ ]
	<u>dark to very dark</u>	8[ ]
	<u>very dark</u>	9[ ]
	<u>not applicable</u>	[ ]



TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note
<b>5.26</b> <b>(52)</b> <b>Only varieties with yellow color of skin: Fruit: intensity of yellow color of skin (as for 50)</b>		
<u>very light</u>		1 [ ]
<u>very light to light</u>		2 [ ]
<u>light</u>		3 [ ]
<u>light to medium</u>		4 [ ]
<u>medium</u>		5 [ ]
<u>medium to dark</u>		6 [ ]
<u>dark</u>	<u>Cora</u>	7 [ ]
<u>dark to very dark</u>		8 [ ]
<u>very dark</u>	<u>Baby Bear, Sardane</u>	9 [ ]
<u>not applicable</u>		[ ]
<b>5.27</b> <b>(54)</b> <b>Fruit: stripes in grooves</b>		
<u>absent</u>	<u>Baby Bear, Jack Be Little</u>	1 [ ]
<u>present</u>	<u>Delicata, Heart of Gold, Pâtisson jaune panaché de vert</u>	9 [ ]
<b>5.28</b> <b>(57)</b> <b>Fruit: dots</b>		
<u>absent</u>	<u>Sunburst</u>	1 [ ]
<u>present</u>	<u>Gold Rush, Table Queen</u>	9 [ ]
<b>5.29</b> <b>(59)</b> <b>Fruit: secondary green color between ribs (excluding dots)</b>		
<u>absent</u>	<u>Grey Zucchini, Small Sugar</u>	1 [ ]
<u>present</u>	<u>Beatrice, Greyzini, Heart of Gold, Steierischer Ölkürbis, Tonda Padana, Zubi</u>	9 [ ]
<b>5.30</b> <b>(61)</b> <b>Fruit: distribution of secondary green color between ribs</b>		
<u>sparse patches</u>	<u>Greyzini, Elite</u>	1 [ ]
<u>dense patches</u>	<u>Steierischer Ölkürbis</u>	2 [ ]
<u>one colored stripes</u>	<u>Altea</u>	3 [ ]
<u>two colored stripes</u>		4 [ ]
<u>one colored bands covering the whole surface</u>	<u>Badger Cross, Twickers, Zubi</u>	5 [ ]
<u>two colored bands covering the whole surface</u>	<u>Beatrice</u>	6 [ ]

TECHNICAL QUESTIONNAIRE		Page {x} of {y}	Reference Number:
Characteristics	Example Varieties	Note	
<b>5.31</b> <b>(69)</b>	<b>Ripe fruit: main color of skin (excluding color of mottles, patches, stripes and bands)</b>		
<u>white</u>	<u>Pâtisson blanc panaché de vert</u>	<u>1</u>	<u> </u>
<u>whitish</u>	<u>White Bush Scallop</u>	<u>2</u>	<u> </u>
<u>cream</u>	<u>Bianchini, Opal</u>	<u>3</u>	<u> </u>
<u>yellow</u>	<u>Gold Rush</u>	<u>4</u>	<u> </u>
<u>orange</u>	<u>Autumn Gold</u>	<u>5</u>	<u> </u>
<b>5.32</b> <b>(71)</b>	<b>Ripe fruit: secondary color of skin (as for 69)</b>		
<u>whitish</u>		<u>1</u>	<u> </u>
<u>cream</u>		<u>2</u>	<u> </u>
<u>yellow</u>		<u>3</u>	<u> </u>
<u>orange</u>		<u>4</u>	<u> </u>
<u>green</u>		<u>5</u>	<u> </u>
<b>5.33</b> <b>(74)</b>	<b>Ripe fruit: color of flesh</b>		
<u>cream</u>	<u>Elite</u>	<u>1</u>	<u> </u>
<u>yellow</u>	<u>Sunburst, Vegetable Spaghetti</u>	<u>2</u>	<u> </u>
<u>orange</u>	<u>Autumn Gold</u>	<u>3</u>	<u> </u>
<b>5.34</b> <b>(82)</b>	<b>Resistance to <i>Zucchini yellow mosaic virus</i> (ZYMV)</b>		
<u>absent or low</u>	<u>Cora</u>	<u>1</u>	<u> </u>
<u>medium</u>	<u>Mirza</u>	<u>2</u>	<u> </u>
<u>high</u>	<u>Mikonos</u>	<u>3</u>	<u> </u>
<u>not tested</u>			<u> </u>
<b>5.35</b> <b>(83)</b>	<b>Resistance to <i>Watermelon mosaic virus</i> (WMV)</b>		
<u>absent</u>		<u>1</u>	<u> </u>
<u>present</u>		<u>9</u>	<u> </u>
<u>not tested</u>			<u> </u>