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## INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

## GRANADILLA, PASSION FRUIT

UPOV Code(s): PASSI\_EDU

*Passiflora edulis* Sims

## GUIDELINES

## FOR THE CONDUCT OF TESTS

## FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by experts from Australia  
to be considered by the  
Technical Working Party for Fruit Crops  
at its fifty-fifth session, to be held virtually  
from 2024-06-03 to 2024-06-06*

*Disclaimer: this document does not represent UPOV policies or guidance*

Alternative names:\*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Passiflora edulis</i> Sims	Granadilla, Passion fruit	Barbadine, Fruit de la passion	Passionsfrucht, Purpurgranadilla	Granadilla, Maracuyá

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](http://www.upov.int)), for the latest information.]

TABLE OF CONTENTS	PAGE
1. SUBJECT OF THESE TEST GUIDELINES.....	<a href="#">3</a>
2. MATERIAL REQUIRED.....	<a href="#">3</a>
3. METHOD OF EXAMINATION.....	<a href="#">3</a>
3.1 Number of Growing Cycles.....	<a href="#">3</a>
3.2 Testing Place.....	<a href="#">3</a>
3.3 Conditions for Conducting the Examination.....	<a href="#">3</a>
3.4 Test Design.....	<a href="#">5</a>
3.5 Additional Tests.....	<a href="#">5</a>
4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY.....	<a href="#">5</a>
4.1 Distinctness.....	<a href="#">5</a>
4.2 Uniformity.....	<a href="#">6</a>
4.3 Stability.....	<a href="#">6</a>
5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL.....	<a href="#">7</a>
6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS.....	<a href="#">7</a>
6.1 Categories of Characteristics.....	<a href="#">7</a>
6.2 States of Expression and Corresponding Notes.....	<a href="#">7</a>
6.3 Types of Expression.....	<a href="#">8</a>
6.4 Example Varieties.....	<a href="#">8</a>
6.5 Legend.....	<a href="#">9</a>
7. TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES.....	<a href="#">10</a>
8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS.....	<a href="#">28</a>
8.1 Explanations covering several characteristics.....	<a href="#">28</a>
8.2 Explanations for individual characteristics.....	<a href="#">35</a>
9. LITERATURE.....	<a href="#">41</a>
10 TECHNICAL QUESTIONNAIRE.....	<a href="#">42</a>

1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Passiflora edulis* Sims of the *Passifloraceae* family.

2. Material Required

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

2.2 The material is to be supplied in the form of rooted cuttings or young plants.

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

5 rooted cuttings or 5 young plants.

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*

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

3.1.2 The two independent growing cycles may be observed from a single planting, examined in two separate growing cycles.

3.1.3 The growing cycle is considered to be the period ranging from the beginning of active vegetative growth or flowering, continuing through active vegetative growth or flowering and fruit development and concluding with the harvesting of fruit.

3.1.4 In particular, it is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles.

3.1.5 To ensure satisfactory crop of good quality fruits, four freshly opened flower from each of the five plants should be hand pollinated and marked. Fruit developed from these flowers should be used for assessing fruit characteristics.

3.1.6 The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test.

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*

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.

### 3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 5 plants.

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 *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.

#### 4.1.4 Number of Plants or Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 5 plants or parts of plants taken from each of 5 plants and any other observations made on all plants in the test, disregarding any off-type plants.

In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 2.

#### 4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the Table of Characteristics (see document TGP/9 "Examining Distinctness", Section 4 "Observation 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

Type of observation: visual (V) or measurement (M)

“Visual” observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

## 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 These Test Guidelines have been developed for the examination of vegetatively propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.
- 4.2.3 For the assessment of uniformity of vegetatively propagated 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 5 plants, no off-types are allowed.

## 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 further examined by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the initial 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:
- (a) Flower: anthocyanin spots on style (characteristic 37)
  - (b) Fruit: height (characteristic 39)
  - (c) Fruit: color of skin (characteristic 44)
  - (d) Fruit: fresh weight (characteristic 46)
  - (e) Fruit: color of pulp (characteristic 47)
  - (f) Plant: self-incompatibility (characteristic 50)
- 5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 "Examining Distinctness".

## 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*

6.2.1 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.

6.2.2 All relevant states of expression are presented in the characteristic.

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 "Development of Test Guidelines".

### 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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1	2	3	4	5	6	7	
		Name of characteristics in English	Nom du caractère en français	Name des Merkmals auf Deutsch	Nombre del carácter en español		
		states of expression	types d'expression	Ausprägungsstufen	tipos de expresión		

- 1 Characteristic number
- 2 (\*) Asterisked characteristic – see Chapter 6.1.2
- 3 Type of expression  
 QL Qualitative characteristic – see Chapter 6.3  
 QN Quantitative characteristic – see Chapter 6.3  
 PQ Pseudo-qualitative characteristic – see Chapter 6.3
- 4 Method of observation (and type of plot, if applicable)  
 MG, MS, VG, VS – see Chapter 4.1.5
- 5 (+) See Explanations on the Table of Characteristics in Chapter 8.2
- 6 (a)-(i) See Explanations on the Table of Characteristics in Chapter 8.1
- 7 Not applicable

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

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>1.</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>				
	<b>Plant: vigor</b>						
		very weak				Lacey	1
		weak				Misty Gem	2
		medium				Tango	3
		strong				Flamenco	4
		very strong				Toms Special	5
<b>2.</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>				
	<b>Shoot: color</b>						
		light green				Nellie Kelly Black, Summer Queen	1
		medium green				Misty Gem	2
		dark green				Charité, Ester	3
		greenish purple					4
		purple				Panama Gold	5
<b>3.</b>	<b>QN</b>	<b>VG</b>					
	<b>Shoot: surface</b>						
		smooth				Flamenco, Misty Gem	1
		rough				Sweetheart, Tango	9
<b>4.</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>				
	<b>Plant: relative number of leaves with three lobes</b>						
		absent or very few				OPA6/19	1
		few					2
		medium				OPA4/19	3
		many				Misty Gem	4
		very many				Flamenco, Toms Special	5
<b>5.</b>	<b>QN</b>	<b>VG</b>					
	<b>Tendril: anthocyanin coloration</b>						
		absent				Nellie Kelly Black	1
		present				Panama Gold	9



	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>6.</b>	<b>QN</b>	<b>VG</b>				
	<b>Stipules: intensity of anthocyanin coloration</b>					
	absent or weak				Flamenco	1
	medium					2
	strong				Panama Gold	3
<b>7.</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>			
	<b>Leaf blade: blistering</b>					
	absent or weak				Panama Gold	1
	medium				Panama Red	2
	strong				Nellie Kelly Black	3
<b>8.</b>	<b>QN</b>	<b>MS/VG</b>	<b>(a), (d)</b>			
	<b>Leaf blade: length</b>					
	very short					1
	very short to short					2
	short				Lacey	3
	short to medium				Sweetheart	4
	medium				Flamenco, Misty Gem	5
	medium to long				Panama Red	6
	long				OPA3/19, OPA4/19	7
	long to very long				OPA12/19	8
	very long				OPA6/19	9
<b>9.</b>	<b>QN</b>	<b>MS/VG</b>	<b>(a), (d)</b>			
	<b>Leaf blade: width</b>					
	very narrow					1
	very narrow to narrow					2
	narrow				E23	3
	narrow to medium				Lacey	4
	medium				Misty Gem, Toms Special	5
	medium to broad				Flamenco	6
	broad				OPA13/19, Tango	7
	broad to very broad				OPA3/19	8
	very broad					9

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>10</b>	<b>QN</b>	<b>MS/VG</b>	<b>(a), (d)</b>				
	<b>Leaf blade: width of the middle lobe (only for varieties where three lobed leaves are present)</b>						
	very narrow						1
	very narrow to narrow						2
	narrow					Lacey, Sweetheart	3
	narrow to medium					E23, Toms Special	4
	medium					Misty Gem	5
	medium to broad					OPA5/19, OPA7/19	6
	broad					OPA11/19, OPA4/19	7
	broad to very broad					McGuffies Red, OPA3/19	8
	very broad					OPA12/19	9
<b>11</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>				
	<b>Leaf blade: intensity green color of the upper side</b>						
	very light						1
	light					Lacey	2
	medium					McGuffies Red, Pandora	3
	dark					Sweetheart, Tango	4
	very dark					OPA6/19	5
<b>12</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>				
	<b>Leaf blade: glossiness of upper side</b>						
	weak					E23	1
	medium					Flamenco, Tango	2
	strong					OPA6/19, Sweetheart	3
<b>13</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>			
	<b>Leaf blade: shape of base</b>						
	acute						1
	obtuse						2
	truncate						3
	weakly cordate					OPA4/19	4
	strongly cordate					Flamenco, Misty Gem	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>14</b>	<b>QN</b>	<b>MS/VG</b>	<b>(a), (d)</b>			
	<b>Leaf blade: depth of sinus</b>					
	absent or very shallow				OPA6/19	1
	shallow					2
	medium				Panama Red	3
	deep				Panama Gold	4
	very deep					5
<b>15</b>	<b>QN</b>	<b>MS/VG</b>	<b>(a)</b>			
	<b>Petiole: length</b>					
	very short					1
	very short to short					2
	short				Tango, Toms Special	3
	short to medium				Misty Gem, OPA13/19	4
	medium				Flamenco, OPA3/19	5
	medium to long				McGuffies Red, OPA4/19	6
	long				OPA11/19, OPA7/19	7
	long to very long				OPA12/19	8
	very long					9
<b>16</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>			
	<b>Petiole: intensity of anthocyanin coloration</b>					
	absent or weak				Misty Gem, Toms Special	1
	medium				Lacey, McGuffies Red	2
	strong				Panama Gold	3
<b>17</b> (*)	<b>QL</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>		
	<b>Petiole: position of nectaries</b>					
	adjacent to the base of the leaf blade				Flamenco, Lacey	1
	away from the base of the leaf blade				E23, OPA3/19	2

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>18</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b)</b>			
	<b>Flower: length of pedicel</b>					
	very short					1
	short				Lacey	2
	medium				Misty Gem	3
	long				Flamenco, Toms Special	4
	very long				OPA11/19, Sweetheart	5
<b>19</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (h)</b>			
	<b>Flower: length of bract</b>					
	very short					1
	short				Lacey, Misty Gem	2
	medium				OPA3/19, Toms Special	3
	long				McGuffies Red, OPA6/19	4
	very long				OPA12/19, Sweetheart	5
<b>20</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (h)</b>			
	<b>Flower: width of bract</b>					
	very narrow					1
	narrow				Flamenco, OPA13/19	2
	medium				McGuffies Red, Pandora	3
	broad				OPA7/19, Tango	4
	very broad				OPA6/19	5
<b>21</b>	<b>QL</b>	<b>VG</b>	<b>(b)</b>			
	<b>Flower: nectaries on bract</b>					
	absent					1
	present					9
<b>22</b>	<b>QL</b>	<b>VG</b>	<b>(b)</b>			
	<b>Only varieties with Flower: nectaries on bract: present: Flower: color of nectaries on bract</b>					
	green				Lacey	1
	purple					2

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>23</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (h)</b>			
	<b>Flower: length of sepal</b>					
	very short					1
	short				Lacey	2
	medium				Misty Gem, Sweetheart	3
	long				OPA11/19	4
	very long					5
<b>24</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (h)</b>			
	<b>Flower: width of sepal</b>					
	very narrow					1
	narrow				OPA5/19	2
	medium				Lacey, Misty Gem	3
	broad				OPA11/19	4
	very broad					5
<b>25</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (h)</b>			
	<b>Flower: length of petal</b>					
	very short					1
	short				OPA5/19	2
	medium				Flamenco, Sweetheart	3
	long				McGuffies Red, Panama Red	4
	very long					5
<b>26</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (h)</b>			
	<b>Flower: width of petal</b>					
	very narrow					1
	narrow				Lacey, OPA3/19	2
	medium				Flamenco, Sweetheart	3
	broad				Toms Special	4
	very broad					5
<b>27</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (g)</b>			
	<b>Flower: length of androgynophore</b>					
	very short					1
	short				Lacey, Misty Gem	2
	medium				OPA12/19, Toms Special	3
	long				Flamenco, OPA3/19	4
	very long					5

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>28</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>				
	<b>Flower: intensity of color on the internal filaments in the throat</b>							
	absent or light					Flamenco	1	
	medium					OPA3/19, Toms Special	2	
	dark					OPA12/19	3	
<b>29</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b)</b>	<b>(f)</b>				
	<b>Flower: diameter of corona including filaments</b>							
	very small						1	
	small					Lacey	2	
	medium					Misty Gem, Sweetheart	3	
	large					OPA12/19	4	
	very large						5	
<b>30</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b)</b>	<b>(f)</b>				
	<b>Flower: width of the purple rings on the corona filaments</b>							
	absent or very narrow						1	
	narrow					OPA7/19	2	
	medium					OPA5/19, Sweetheart	3	
	broad					OPA12/19	4	
	very broad						5	
<b>31</b>	<b>(*)</b>	<b>QN</b>	<b>VG</b>	<b>(b)</b>				
	<b>Flower: intensity of color of purple rings on corona filaments</b>							
	light					OPA7/19	1	
	medium					Lacey, Misty Gem	2	
	dark					OPA12/19	3	
<b>32</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b)</b>	<b>(i)</b>				
	<b>Anther: length</b>							
	short						1	
	medium					Flamenco, Misty Gem	2	
	long					OPA11/19, OPA12/19	3	

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>33</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (i)</b>				
	<b>Anther: width</b>						
	narrow						1
	medium					Sweetheart, Toms Special	2
	broad					OPA13/19, OPA4/19	3
<b>34</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (g)</b>				
	<b>Ovary: length</b>						
	short					E23	1
	medium					Flamenco, Sweetheart	2
	long					OPA11/19, Toms Special	3
<b>35</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b), (g)</b>				
	<b>Ovary: width</b>						
	narrow					E23	1
	medium					Flamenco, Sweetheart	2
	wide					OPA11/19, Toms Special	3
<b>36</b>	<b>QN</b>	<b>VG</b>	<b>(b)</b>				
	<b>Anther: number of anthocyanin spots on filament</b>						
	absent or very few						1
	few					Flamenco, Toms Special	2
	medium					OPA11/19, Sweetheart	3
	many					Lacey, OPA3/19	4
	very many						5
<b>37</b>	<b>(*) QN</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>			
	<b>Flower: anthocyanin spots on style</b>						
	absent or few					Lacey, OPA11/19	1
	medium					OPA5/19, OPA7/19	2
	many					OPA3/19	3
<b>38</b>	<b>QN</b>	<b>VG</b>	<b>(b)</b>				
	<b>Flower: number anthocyanin spots on the androgynophore</b>						
	absent or few					Lacey, OPA13/19, OPA3/19	1
	medium					OPA4/19, Sweetheart	2
	many					Flamenco, Toms Special	3

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>39</b>	<b>QN</b>	<b>MS/VG</b>	<b>(c), (e)</b>				
	<b>Fruit: height</b>						
	very short						1
	very short to short						2
	short				E23, Lacey		3
	short to medium						4
	medium				Flamenco, OPA13/19		5
	medium to tall						6
	tall				McGuffies Red, OPA11/19		7
	tall to very tall						8
	very tall				Golden Giant		9
<b>40</b>	<b>QN</b>	<b>MS/VG</b>	<b>(c), (e)</b>				
	<b>Fruit: diameter</b>						
	very small						1
	very small to small						2
	small				E23, Lacey		3
	small to medium						4
	medium				Flamenco, Pandora		5
	medium to large						6
	large				OPA12/19		7
	large to very large						8
	very large				Golden Giant		9
<b>41</b>	<b>QN</b>	<b>MS/VG</b>					
	<b>Fruit: ratio height/diameter</b>						
	very low						1
	low						2
	medium				Lacey, OPA3/19		3
	high				McGuffies Red		4
	very high						5



	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>42</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(c)</b>				
	<b>Fruit: shape in longitudinal view</b>							
	obloid						BRS GA1	1
	globose						Lacey, Misty Gem, OPA3/19	2
	broad ellipsoid						McGuffies Red, OPA6/19	3
	narrow ellipsoid							4
	ovoid						Pandora	5
	obtuse ovoid						Panama Red	6
	obovoid							7
<b>43</b>	<b>QN</b>	<b>VG</b>		<b>(c)</b>				
	<b>Fruit: number of lenticels</b>							
	absent or very low							1
	low						McGuffies Red	2
	medium						OPA6/19	3
	many						Pandora	4
	very many						Misty Gem, Panama Red	5
<b>44 (*)</b>	<b>PQ</b>	<b>VG</b>		<b>(c)</b>				
	<b>Fruit: color of skin</b>							
	green							1
	yellow green							2
	yellow						Brazilian Gold, Inca Gold	3
	dark yellow						Panama Gold	4
	reddish orange							5
	red						McGuffies Red	6
	reddish purple						Sweetheart, Toms Special	7
	purple						Misty Gem, Tango	8
	black purple						Nellie Kelly Black	9

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>45</b>	<b>QN</b>	<b>MS/VG</b>	<b>(+)</b>	<b>(c)</b>				
	<b>Fruit: thickness of skin</b>							
		very thin						1
		very thin to thin						2
		thin				OPA6/19		3
		thin to medium						4
		medium				E23, Flamenco, Misty Gem		5
		medium to thick						6
		thick				OPA3/19, Pandora		7
		thick to very thick						8
		very thick				OPA12/19		9
<b>46 (*)</b>	<b>QN</b>	<b>MG/MS</b>		<b>(c)</b>				
	<b>Fruit: fresh weight</b>							
		very low				E23		1
		very low to low						2
		low				Lacey, Misty Gem		3
		low to medium						4
		medium				Flamenco, OPA3/19, OPA5/19		5
		medium to high						6
		high				McGuffies Red, OPA12/19		7
		high to very high						8
		very high				Golden Giant		9
<b>47 (*)</b>	<b>PQ</b>	<b>VG</b>		<b>(c)</b>				
	<b>Fruit: color of pulp</b>							
		whitish						1
		greenish yellow						2
		yellow				McGuffies Red, Misty Gem		3
		yellow orange				E23, Flamenco		4
		orange				OPA3/19		5

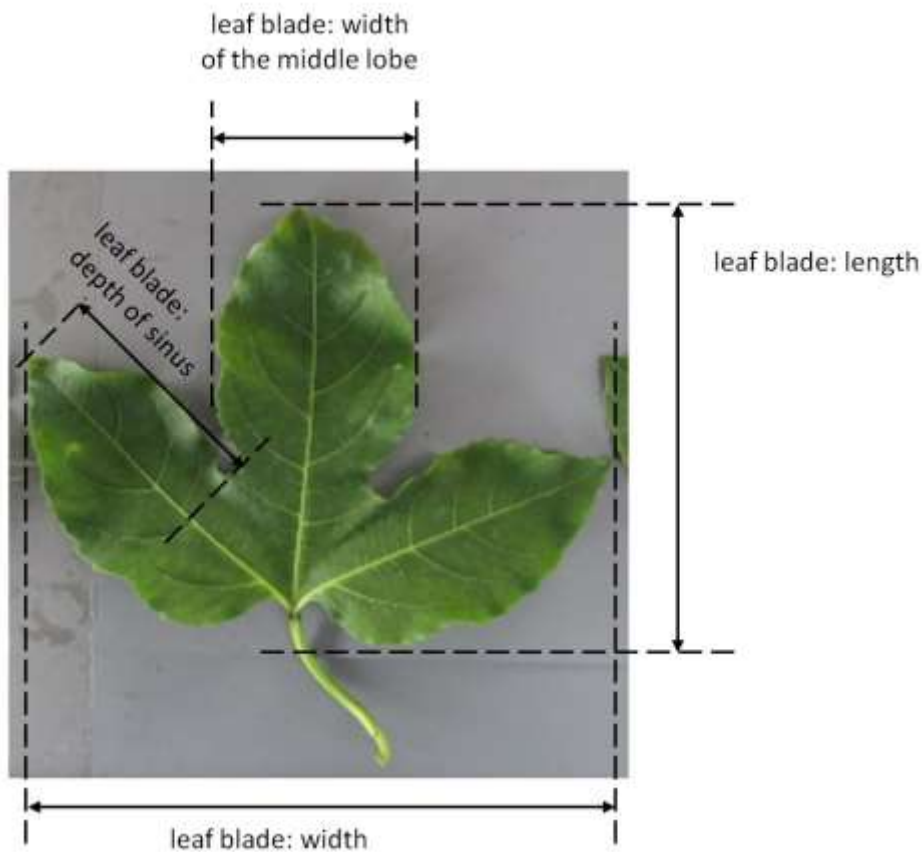
	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>48</b> (*)	<b>QN</b>	<b>MG/MS</b>	<b>(+)</b>	<b>(c)</b>				
	<b>Fruit: weight of pulp including seeds</b>							
	very low						E23	1
	very low to low							2
	low						Misty Gem	3
	low to medium							4
	medium						Flamenco, McGuffies Red, Pandora	5
	medium to high							6
	high						OPA6/19, OPA7/19	7
	high to very high							8
	very high							9
<b>49</b>	<b>QN</b>	<b>MG</b>	<b>(+)</b>					
	<b>Fruit: sweetness of pulp</b>							
	very low							1
	very low to low							2
	low						E23	3
	low to medium						Panama Red	4
	medium						Flamenco	5
	medium to high						Misty Gem	6
	high						Pandora, Sweetheart	7
	high to very high						McGuffies Red	8
	very high						OPA6/19	9
<b>50</b>	<b>QL</b>	<b>VG</b>	<b>(+)</b>					
	<b>Plant: self-incompatibility</b>							
	absent						Flamenco, Toms Special	1
	present						Panama Red	9

8. Explanations on the Table of Characteristics

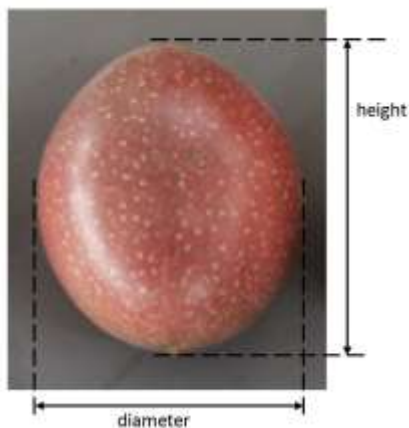
8.1 *Explanations covering several characteristics*

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

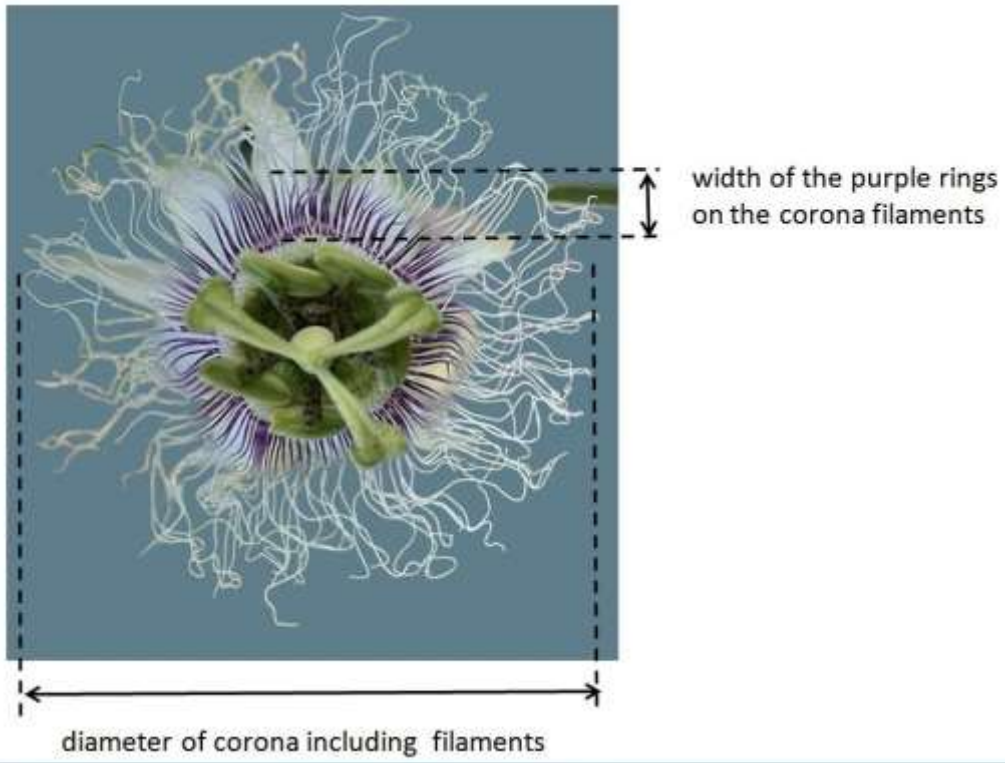
- (a) Leaf blade and petiole: Observations should be made on fully developed leaves from the middle third of vigorous shoots.
- (b) Flower: Observations should be made on fully opened flowers.
- (c) Fruit developed from hand pollinated flowers should be used for assessing fruit characteristics. Observations should be made on 10 typical fruits at the time when  $\geq 75\%$  of the fruit skin has changed color.
- (d)



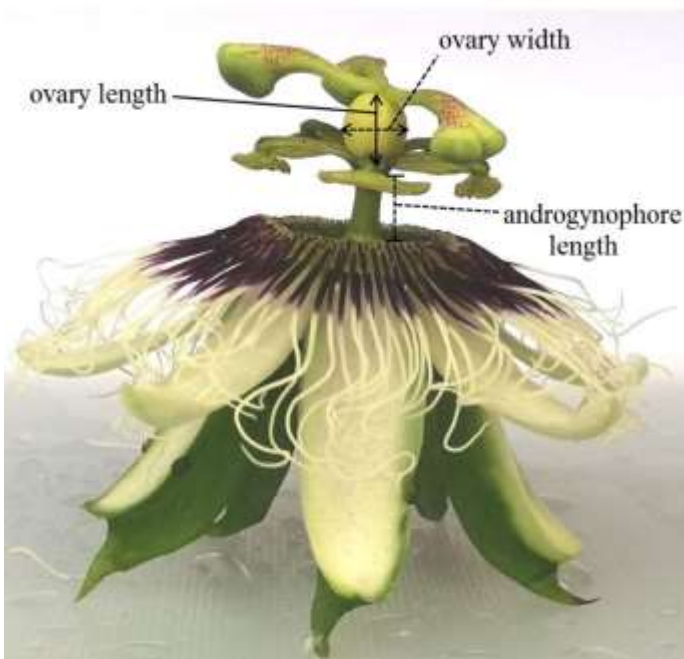
(e)



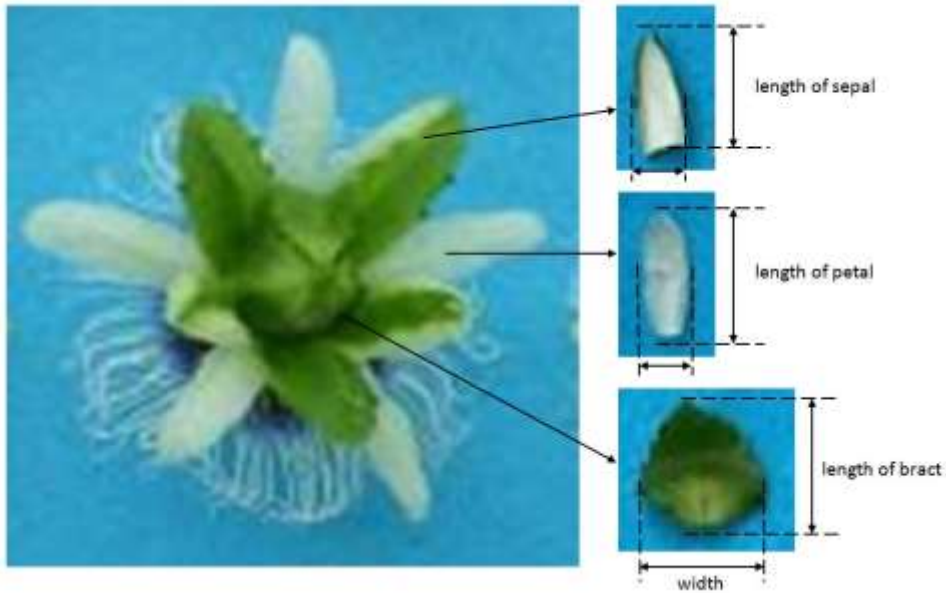
(f)



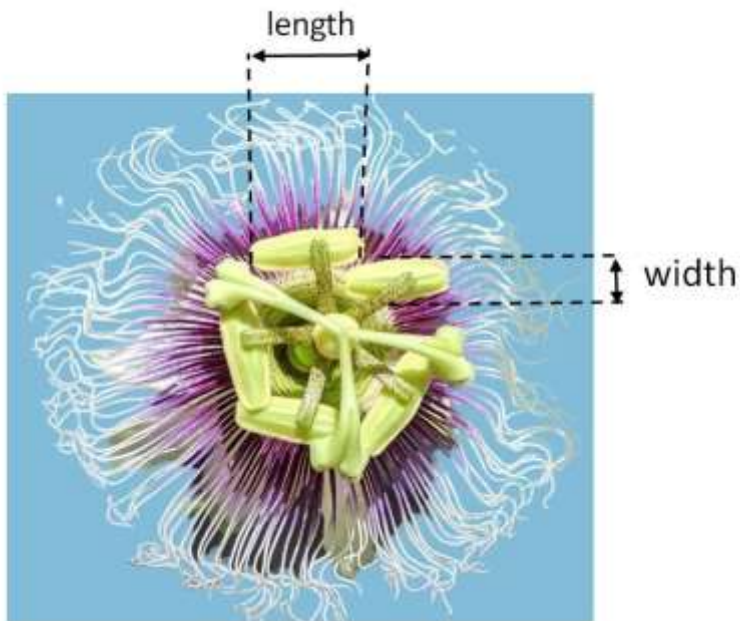
(g)



(h)



(i)



## 8.2 Explanations for individual characteristics

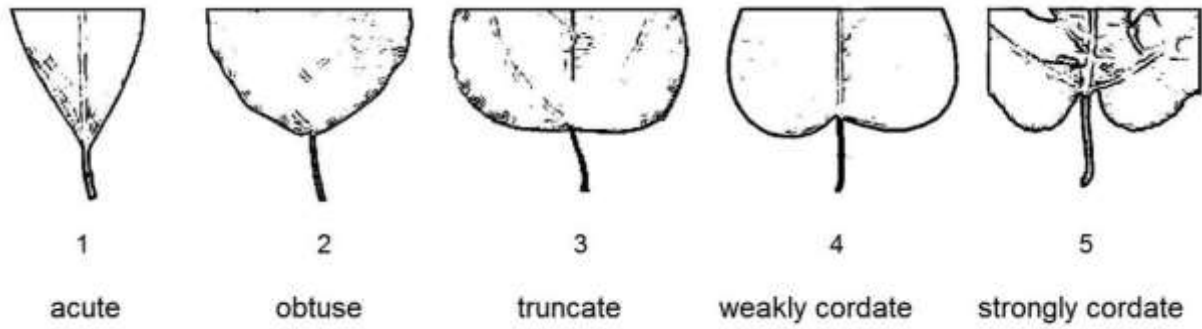
### Ad. 1: Plant: vigor

The plant vigor should be considered as the overall abundance of vegetative growth.

### Ad. 2: Shoot: color

Observations should be made on vigorous current season's shoots.

Ad. 13: Leaf blade: shape of base



Ad. 17: Petiole: position of nectaries



Ad. 28: Flower: intensity of color on the internal filaments in the throat

intensity of color of the internal filaments in the throat





Ad. 37: Flower: anthocyanin spots on style



Ad. 42: Fruit: shape in longitudinal view

		ratio height/diameter			
		low	medium	high	
broadest part ↑ above middle at middle ↓ below middle	above middle		 7 obovoid		
	at middle	 1 obloid	 2 globose	 3 broad ellipsoid	 4 narrow ellipsoid
	below middle		 6 obtuse ovoid		
			 5 ovoid		



Ad. 45: Fruit: thickness of skin



Ad. 48: Fruit: weight of pulp including seeds

This characteristic can be observed by cutting the fruit and scooping out the pulp including seeds and then weighing them on an electronic scale.

Ad. 49: Fruit: sweetness of pulp

The sweetness of pulp should be observed in degrees Brix.

Ad. 50: Plant: self-incompatibility

A variety is self-incompatible when the fertile pollen of its own flower or of other flowers of the same variety is not able to fertilize the ovary.

To observe self-incompatibility, 5 un-opened flowers should be emasculated and bagged. Once the bagged flowers open, they should be hand pollinated using fresh pollen from the same plant or another plant of the same variety and re-bagged. Self-incompatibility is absent in the variety under observation if the ovary of the pollinated flower is swollen and still attached to the plant 72 hours after pollination.

9. Literature

Jesus, O.N., Oliveira, E.J., Faleiro, F.G., Soares, T.L.S., and Girardi, E.A. (2017). Illustrated Morpho-agronomic Descriptors for *Passiflora* spp. (Embrapa), Brasília, Brazil

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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	Application date: (not to be filled in by the applicant)
--	---

TECHNICAL QUESTIONNAIRE  
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire	
1.1 Botanical name	<input type="text" value="Passiflora edulis Sims"/>
1.2 Common name	<input type="text" value="Granadilla, Passion fruit"/>

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"/>

3. Proposed denomination and breeder's reference	
Proposed denomination (if available)	<input type="text"/>
Breeder's reference	<input type="text"/>

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing [ ]

(a) controlled cross [ ]

(please state parent variety)

(.....) x (.....)

female parent male parent

(b) partially known cross [ ]

(please state known parent variety(ies))

(.....) x (.....)

female parent male parent

(c) unknown cross [ ]

4.1.2 Mutation [ ]

(please state parent variety)

4.1.3 Discovery and development [ ]

(please state where and when discovered and how developed)

4.1.4 Other [ ]

(Please provide details)

# 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:
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4.2 Method of propagating the variety

4.2.1 Vegetative propagation

- (a) Cuttings
- (b) *In vitro* propagation
- (c) Budding and grafting (please specify rootstock)
- (d) Other (state method)

4.2.2 Other   
(Please provide details)

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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).

Characteristics	Example Varieties	Note
<b>5.1 Leaf blade: blistering (7)</b>		
absent or weak	Panama Gold	1 [ ]
medium	Panama Red	2 [ ]
strong	Nellie Kelly Black	3 [ ]
<b>5.2 Flower: anthocyanin spots on style (37)</b>		
absent or few	Lacey, OPA11/19	1 [ ]
medium	OPA5/19, OPA7/19	2 [ ]
many	OPA3/19	3 [ ]
<b>5.3 Fruit: height (39)</b>		
very short		1 [ ]
very short to short		2 [ ]
short	E23, Lacey	3 [ ]
short to medium		4 [ ]
medium	Flamenco, OPA13/19	5 [ ]
medium to tall		6 [ ]
tall	McGuffies Red, OPA11/19	7 [ ]
tall to very tall		8 [ ]
very tall	Golden Giant	9 [ ]
<b>5.4 Fruit: color of skin (44)</b>		
green		1 [ ]
yellow green		2 [ ]
yellow	Brazilian Gold, Inca Gold	3 [ ]
dark yellow	Panama Gold	4 [ ]
reddish orange		5 [ ]
red	McGuffies Red	6 [ ]
reddish purple	Sweetheart, Toms Special	7 [ ]
purple	Misty Gem, Tango	8 [ ]
black purple	Nellie Kelly Black	9 [ ]

Characteristics	Example Varieties	Note
<b>5.5 Fruit: fresh weight (46)</b>		
very low	E23	1 [ ]
very low to low		2 [ ]
low	Lacey, Misty Gem	3 [ ]
low to medium		4 [ ]
medium	Flamenco, OPA3/19, OPA5/19	5 [ ]
medium to high		6 [ ]
high	McGuffies Red, OPA12/19	7 [ ]
high to very high		8 [ ]
very high	Golden Giant	9 [ ]
<b>5.6 Fruit: color of pulp (47)</b>		
whitish		1 [ ]
greenish yellow		2 [ ]
yellow	McGuffies Red, Misty Gem	3 [ ]
yellow orange	E23, Flamenco	4 [ ]
orange	OPA3/19	5 [ ]
<b>5.7 Plant: self-incompatibility (50)</b>		
absent	Flamenco, Toms Special	1 [ ]
present	Panama Red	9 [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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6. Similar varieties and differences from these varieties

*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.*

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 <b>similar</b> variety(ies)	Describe the expression of the characteristic(s) for <b>your</b> candidate variety
<i>Example</i>	<i>Fruit: height</i>	<i>short</i>	<i>tall</i>
Comments:			



TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#7. Additional information which may help in the examination of the variety

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

Yes  No

(If yes, please provide details)

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

Yes  No

(If yes, please provide details)

7.3 Other information

A representative color photograph of the variety displaying its main distinguishing feature(s), should accompany the Technical Questionnaire. The photograph will provide a visual illustration of the candidate variety which supplements the information provided in the Technical Questionnaire.

The key points to consider when taking a photograph of the candidate variety are:

- Indication of the date and geographic location
- Correct labeling (breeder's reference)
- Good quality printed photograph (minimum 10 cm x 15 cm) and/or sufficient resolution electronic format version (minimum 960 x 1280 pixels)"

Further guidance on providing photographs with the Technical Questionnaire is available in document TGP/7 "Development of Test Guidelines", Guidance Note 35 (<http://www.upov.int/tgp/en/>).

[The link provided may be deleted by members of the Union when developing authorities' own test guidelines.]

# 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:
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8. Authorization for release

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

Yes [ ] No [ ]

(b) Has such authorization been obtained?

Yes [ ] No [ ]

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

9. Information on plant material to be examined or submitted for examination

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.

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:

- |     |   |         |        |
|-----|---|---------|--------|
| (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 [ ] |

Please provide details for where you have indicated "yes".

.....

9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes [ ]

(please provide details as specified by the Authority)

No [ ]

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant's name

Signature

Date

[End of document]