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

Geneva

DRAFT

### TEA

UPOV Code(s): CMLIA\_SIN

*Camellia sinensis* (L.) Kuntze

### GUIDELINES

#### FOR THE CONDUCT OF TESTS

#### FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by experts from Kenya*

*to be considered by the*

*Technical Committee for adoption by correspondence*

*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>Camellia sinensis</i> (L.) Kuntze	Tea	Théier	Tee, Teestrauch	Te, Té

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="#">3</a>
3.5 Additional Tests.....	<a href="#">3</a>
4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY.....	<a href="#">4</a>
4.1 Distinctness.....	<a href="#">4</a>
4.2 Uniformity.....	<a href="#">5</a>
4.3 Stability.....	<a href="#">5</a>
5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL.....	<a href="#">5</a>
6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS.....	<a href="#">6</a>
6.1 Categories of Characteristics.....	<a href="#">6</a>
6.2 States of Expression and Corresponding Notes.....	<a href="#">6</a>
6.3 Types of Expression.....	<a href="#">6</a>
6.4 Example Varieties.....	<a href="#">6</a>
6.5 Legend.....	<a href="#">7</a>
7. TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES.....	<a href="#">8</a>
8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS.....	<a href="#">16</a>
8.1 Explanations covering several characteristics.....	<a href="#">16</a>
8.2 Explanations for individual characteristics.....	<a href="#">16</a>
9. LITERATURE.....	<a href="#">22</a>
10. TECHNICAL QUESTIONNAIRE.....	<a href="#">23</a>

## 1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Camellia sinensis* (L.) Kuntze.

## 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 one-year-old rooted cuttings.

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

20 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 a single growing cycle.

3.1.2 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 10 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 9 plants or parts of plants taken from each of 9 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 1.

#### 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 10 plants, 1 off-type is 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 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) Plant: type (characteristic 1)
- (b) Plant: growth habit (characteristic 2)
- (c) Young shoot: density of bud pubescence (characteristic 8)
- (d) Leaf blade: length/width ratio (characteristic 14)
- (e) Leaf blade: color (characteristic 21)

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		
	<b>Name of characteristics in English</b>			<b>Nom du caractère en français</b>	<b>Name des Merkmals auf Deutsch</b>	<b>Nombre del carácter en español</b>		
	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)-(c) 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 Beispielsorten Variedades ejemplo	Note/ Nota
<b>1. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>				
	<b>Plant: type</b>		<b>Plante : type</b>		<b>Pflanze: Typ</b>	<b>Planta: tipo</b>		
	shrub		arbrisseau		Strauch	arbusto	TRFK 536, TRFK 543	1
	semi-arbor		demi-arbre		Halbbaum	semiarborescente	AHP S15/10	2
	arbor		arbre		Baum	arborescente	TRFK 56/89	3
<b>2. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>				
	<b>Plant: growth habit</b>		<b>Plante : port</b>		<b>Pflanze: Wuchsform</b>	<b>Planta: hábito de crecimiento</b>		
	fastigate		fastigié		sehr aufrecht	fastigiado		1
	upright		dressé		aufrecht	erecto	TRFK 301/3	2
	upright to spreading		dressé à étalé		aufrecht bis breitwüchsig	erecto a extendido	AHP S15/10	3
	spreading		étalé		breitwüchsig	extendido	TRFK 371/8	4
<b>3.</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>				
	<b>Plant: vigor</b>		<b>Plante : vigueur</b>		<b>Pflanze: Wuchsstärke</b>	<b>Planta: vigor</b>		
	very weak		très faible		sehr gering	muy débil		1
	very weak to weak		très faible à faible		sehr gering bis gering	muy débil a débil		2
	weak		faible		gering	débil	GWEJULUL, TRFK 301/1	3
	weak to medium		faible à moyenne		gering bis mittel	débil a media		4
	medium		moyenne		mittel	media	TRFK 306	5
	medium to strong		moyenne à forte		mittel bis stark	media a fuerte		6
	strong		forte		stark	fuerte	TRFK 301/4, TRFK 371/8	7
	strong to very strong		forte à très forte		stark bis sehr stark	fuerte a muy fuerte		8
	very strong		très forte		sehr stark	muy fuerte		9
<b>4.</b>	<b>QN</b>	<b>VG</b>		<b>(a)</b>				
	<b>Plant: density of branches</b>		<b>Plante : densité des ramifications</b>		<b>Pflanze: Dichte der Zweige</b>	<b>Planta: densidad de ramas</b>		
	very sparse		très lâche		sehr locker	muy laxa		1
	very sparse to sparse		très lâche à lâche		sehr locker bis locker	muy laxa a laxa		2
	sparse		lâche		locker	laxa	TRFK 306	3
	sparse to medium		lâche à moyenne		locker bis mittel	laxa a media		4
	medium		moyenne		mittel	media	EPKD99/10, TRFK 301/4	5
	medium to dense		moyenne à dense		mittel bis dicht	media a densa		6
	dense		dense		dicht	densa	AHP S15/10, EPK TN14-3	7
	dense to very dense		dense à très dense		dicht bis sehr dicht	densa a muy densa		8
	very dense		très dense		sehr dicht	muy densa		9



	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>5. (*)</b>	<b>QL</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>				
	<b>Branch: zigzag</b>		<b>Ramification : zigzag</b>		<b>Zweig: Zickzackform</b>	<b>Rama: zigzagueo</b>		
	absent		absent		fehlend	ausente	TRFK 31/8	1
	present		présent		vorhanden	presente		9
<b>6. (*)</b>	<b>QN</b>	<b>MG/MS</b>	<b>(+)</b>					
	<b>Young shoot: time of beginning of "one and a bud" stage</b>		<b>Jeune rameau : époque de début de la phase "une feuille et un bourgeon"</b>		<b>Jungtrieb: Zeitpunkt des Beginns des Stadiums „ein Blatt und eine Knospe"</b>	<b>Rama joven: época de inicio de la fase de "una hoja y una yema"</b>		
	very early		très précoce		sehr früh	muy temprana		1
	very early to early		très précoce à précoce		sehr früh bis früh	muy temprana a temprana		2
	early		précoce		früh	temprana		3
	early to medium		précoce à moyenne		früh bis mittel	temprana a media		4
	medium		moyenne		mittel	media		5
	medium to late		moyenne à tardive		mittel bis spät	media a tardía		6
	late		tardive		spät	tardía		7
	late to very late		tardive à très tardive		spät bis sehr spät	tardía a muy tardía		8
	very late		très tardive		sehr spät	muy tardía		9
<b>7. (*)</b>	<b>PQ</b>	<b>VG</b>		<b>(a)</b>				
	<b>Young shoot: color of second leaf</b>		<b>Jeune rameau : couleur de la deuxième feuille</b>		<b>Jungtrieb: Farbe des zweiten Blattes</b>	<b>Rama joven: color de la segunda hoja</b>		
	whitish		blanchâtre		weißlich	blanquecino		1
	yellow green		vert-jaune		gelbgrün	verde amarillento	TRFK 6/8	2
	light green		vert clair		hellgrün	verde claro	TRFK 301/3	3
	medium green		vert moyen		mittelgrün	verde medio	EPK TN14-3	4
	dark green		vert foncé		dunkelgrün	verde oscuro	NDT TAI, TRFK 306/3	5
	purple green		vert-pourpre		purpurgrün	verde púrpura	TRFK K-PURPLE	6
	purple		pourpre		purpurn	púrpura	TRFK 306	7
<b>8. (*)</b>	<b>QN</b>	<b>VG</b>		<b>(a)</b>				
	<b>Young shoot: density of bud pubescence</b>		<b>Jeune rameau : densité de la pilosité du bourgeon</b>		<b>Jungtrieb: Dichte der Behaarung der Knospe</b>	<b>Rama joven: densidad de la pubescencia de la yema</b>		
	absent or sparse		absente ou faible		fehlend oder locker	ausente o laxa	TRFK 31/8	1
	sparse to medium		faible à moyenne		locker bis mittel	laxa a media		2
	medium		moyenne		mittel	media	TRFK 704/2	3
	medium to dense		moyenne à forte		mittel bis dicht	media a densa		4
	dense		forte		dicht	densa	AHP S15/10	5

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>9.</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>				
	<b>Young leaf: anthocyanin coloration at base of petiole</b>	<b>Jeune feuille : pigmentation anthocyanique à la base du pétiole</b>	<b>Junges Blatt: Anthocyanfärbung an der Basis des Blattstiels</b>	<b>Hoja joven: pigmentación antociánica en la base del pecíolo</b>				
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	TRFK 31/8		1	
	weak	faible	gering	débil	TRFK 73/1		2	
	medium	moyenne	mittel	media			3	
	strong	forte	stark	fuerte	TRFK 306		4	
	very strong	très forte	sehr stark	muy fuerte	TRFK K-PURPLE		5	
<b>10. (*)</b>	<b>QN</b>	<b>MS/VG</b>	<b>(+)</b>	<b>(a)</b>				
	<b>Young shoot: length</b>	<b>Jeune rameau : longueur</b>	<b>Jungtrieb: Länge</b>	<b>Rama joven: longitud</b>				
	very short	très courte	sehr kurz	muy corta			1	
	very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta			2	
	short	courte	kurz	corta	K-PURPLE		3	
	short to medium	courte à moyenne	kurz bis mittel	corta a media			4	
	medium	moyenne	mittel	media	TRFK 704/2		5	
	medium to long	moyenne à longue	mittel bis lang	media a larga			6	
	long	longue	lang	larga	BBK 35, TRFK 301/4		7	
	long to very long	longue à très longue	lang bis sehr lang	larga a muy larga			8	
	very long	très longue	sehr lang	muy larga			9	
<b>11. (*)</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>				
	<b>Leaf blade: attitude</b>	<b>Limbe : port</b>	<b>Blattspreite: Haltung</b>	<b>Limbo: porte</b>				
	upwards	dressé	aufwärts gerichtet	erecto	BBK 35, TRFK 56/89		1	
	upwards to horizontal	dressé à horizontal	aufwärts gerichtet bis waagerecht	erecto a horizontal			2	
	horizontal	horizontal	waagerecht	horizontal	TRFK 6/8		3	
	horizontal to downwards	horizontal à retombant	waagerecht bis abwärts gerichtet	horizontal a hacia abajo			4	
	downwards	retombant	abwärts gerichtet	hacia abajo	TRFK 371/8		5	

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>12. (*)</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b)</b>				
	<b>Leaf blade: length</b>	<b>Limbe : longueur</b>	<b>Blattspreite: Länge</b>	<b>Limbo: longitud</b>			
	very short	très courte	sehr kurz	muy corta			1
	very short to short	très courte à courte	sehr kurz bis kurz	muy corta a corta			2
	short	courte	kurz	corta	K-PURPLE		3
	short to medium	courte à moyenne	kurz bis mittel	corta a media			4
	medium	moyenne	mittel	media	AHP SC31/37		5
	medium to long	moyenne à longue	mittel bis lang	media a larga			6
	long	longue	lang	larga	BBK 35, TRFK 301/4		7
	long to very long	longue à très longue	lang bis sehr lang	larga a muy larga			8
	very long	très longue	sehr lang	muy larga			9
<b>13. (*)</b>	<b>QN</b>	<b>MS/VG</b>	<b>(b)</b>				
	<b>Leaf blade: width</b>	<b>Limbe : largeur</b>	<b>Blattspreite: Breite</b>	<b>Limbo: anchura</b>			
	very narrow	très étroite	sehr schmal	muy estrecha			1
	very narrow to narrow	très étroite à étroite	sehr schmal bis schmal	muy estrecha a estrecha			2
	narrow	étroite	schmal	estrecha	K-PURPLE		3
	narrow to medium	étroite à moyenne	schmal bis mittel	estrecha a media			4
	medium	moyenne	mittel	media	AHP SC31/37		5
	medium to broad	moyenne à large	mittel bis breit	media a ancha			6
	broad	large	breit	ancha	TRFK 371/8		7
	broad to very broad	large à très large	breit bis sehr breit	ancha muy ancha			8
	very broad	très large	sehr breit	muy ancha			9
<b>14.</b>	<b>QN</b>	<b>MS/VG</b>	<b>(+)</b>	<b>(b)</b>			
	<b>Leaf blade: length/width ratio</b>	<b>Limbe : rapport longueur/largeur</b>	<b>Blattspreite: Verhältnis Länge/Breite</b>	<b>Limbo: relación longitud/anchura</b>			
	low	bas	klein	baja	AHP S15/10		1
	medium	moyen	mittel	media	TRFK 31/8, TRFK 704/2		2
	high	élevé	groß	alta	EPK C12, TRFK301/6		3
<b>15. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>			
	<b>Leaf blade: shape of apex</b>	<b>Limbe : forme du sommet</b>	<b>Blattspreite: Form der Spitze</b>	<b>Limbo: forma del ápice</b>			
	acuminate	acuminée	zugespitzt	acuminada	AHP S15/10, TRFCA SF S150, TRFK597/1		1
	acute	aigüe	spitz	aguda	TRFK 108/82		2
	obtuse	obtuse	stumpf	obtusa			3

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>16. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>				
	<b>Leaf blade: shape of base</b>	<b>Limbe : forme de la base</b>	<b>Blattspreite: Form der Basis</b>	<b>Limbo: forma de la base</b>				
	acute	pointue	spitz	aguda	AHP SC31/37		1	
	obtuse	obtuse	stumpf	obtusa	TRFK 704/2		2	
	truncate	tronquée	abgeflacht	truncada			3	
<b>17.</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>				
	<b>Leaf blade: shape in cross section</b>	<b>Limbe : forme en section transversale</b>	<b>Blattspreite: Form im Querschnitt</b>	<b>Limbo: forma en sección transversal</b>				
	folded upwards	incurvée	aufgebogen	plegada hacia arriba	TRFK 6/8		1	
	flat	plate	gerade	plana	TRFK 12/12		2	
	recurved	retombante	zurückgebogen	recurvada			3	
<b>18.</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>				
	<b>Leaf blade: undulation of margin</b>	<b>Limbe : ondulation du bord</b>	<b>Blattspreite: Randwellung</b>	<b>Limbo: ondulación del margen</b>				
	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	EPK TN14-3, TRFK31/8		1	
	weak to medium	faible à moyenne	gering bis mittel	débil a media			2	
	medium	moyenne	mittel	media	TRFK 301/3		3	
	medium to strong	moyenne à forte	mittel bis stark	media a fuerte			4	
	strong	forte	stark	fuerte	TRFK 303/577		5	
<b>19.</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>				
	<b>Leaf blade: serration of margin</b>	<b>Limbe : dentelure du bord</b>	<b>Blattspreite: Randeinschnitte</b>	<b>Limbo: serrado del margen</b>				
	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	TRFK 306		1	
	very weak to weak	très faible à faible	sehr gering bis gering	muy débil a débil			2	
	weak	faible	gering	débil	TRFK 31/8		3	
	weak to medium	faible à moyenne	gering bis mittel	débil a medio			4	
	medium	moyenne	mittel	medio	AHP S15/10		5	
	medium to strong	moyenne à forte	mittel bis stark	medio a fuerte			6	
	strong	forte	stark	fuerte	TRFK 301/5, TRFK 597/1		7	
	strong to very strong	forte à très forte	stark bis sehr stark	fuerte a muy fuerte			8	
	very strong	très forte	sehr stark	muy fuerte			9	
<b>20.</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>				
	<b>Leaf blade: texture</b>	<b>Limbe : texture</b>	<b>Blattspreite: Textur</b>	<b>Limbo: textura</b>				
	smooth	lisse	glatt	lisa	TRFK 6/8		1	
	medium	moyenne	mittel	media	EPK TN14-3		2	
	rough	rugueuse	rauh	rugosa	AHP SC31/37		3	

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>21. (*)</b>	<b>QL</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>				
	<b>Leaf blade: color</b>		<b>Limbe : couleur</b>		<b>Blattspreite: Farbe</b>	<b>Limbo: color</b>		
	green		vert		grün	verde	TRFK 31/8	1
	purple		pourpre		purpurn	púrpura	TRFK 306	2
<b>22. (*)</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(b)</b>				
	<b>Leaf blade: intensity of color</b>		<b>Limbe : intensité de la couleur</b>		<b>Blattspreite: Intensität der Farbe</b>	<b>Limbo: intensidad del color</b>		
	very light		très claire		sehr hell	muy clara		1
	very light to light		très claire à claire		sehr hell bis hell	muy clara a clara		2
	light		claire		hell	clara	AHP SC12/28, TRFK 73/1	3
	light to medium		claire à moyenne		hell bis mittel	clara a media		4
	medium		moyenne		mittel	media	TRFK 306, TRFK 31/8, TRFK56/89	5
	medium to dark		moyenne à foncée		mittel bis dunkel	media a oscura		6
	dark		foncée		dunkel	oscura	NDT TAI, TRFK K-PURPLE, TRFK301/6	7
	dark to very dark		foncée à très foncée		dunkel bis sehr dunkel	oscura a muy oscurs		8
	very dark		très foncée		sehr dunkel	muy oscura		9
<b>23.</b>	<b>QN</b>	<b>MG</b>	<b>(+)</b>					
	<b>Time of flowering</b>		<b>Époque de floraison</b>		<b>Zeitpunkt der Blüte</b>	<b>Época de floración</b>		
	very early		très précoce		sehr früh	muy temprana		1
	very early to early		très précoce à précoce		sehr früh bis früh	muy temprana a temprana		2
	early		précoce		früh	temprana		3
	early to medium		précoce à moyenne		früh bis mittel	temprana a media		4
	medium		moyenne		mittel	media		5
	medium to late		moyenne à tardive		mittel bis spät	media a tardía		6
	late		tardive		spät	tardía		7
	late to very late		tardive à très tardive		spat bis sehr spät	tardía a muy tardía		8
	very late		très tardive		sehr spät	muy tardía		9
<b>24.</b>	<b>QN</b>	<b>MS/VG</b>		<b>(c)</b>				
	<b>Flower: length of pedicel</b>		<b>Fleur : longueur du pédoncule</b>		<b>Blüte: Länge des Blütenstiels</b>	<b>Flor: longitud del pedicelo</b>		
	short		courte		kurz	corta	EPK TN14-3	1
	short to medium		courte à moyenne		kurz bis mittel	corta a media		2
	medium		moyenne		mittel	media	TRFK 6/8, AHP S15/10	3
	medium to long		moyenne à longue		mittel bis lang	media a larga		4
	long		longue		lang	larga	TRFK 301/5	5

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.	QN	MS	(c)				
	<b>Flower: diameter</b>	<b>Fleur : diamètre</b>	<b>Blüte: Durchmesser</b>	<b>Flor: diámetro</b>			
	very small	très petit	sehr klein	muy pequenõ			1
	very small to small	très petit à petit	sehr klein bis klein	muy pequenõ a pequenõ			2
	small	petit	klein	pequenõ	TRFK 303/577		3
	small to medium	petit à moyen	klein bis mittel	pequenõ a medio			4
	medium	moyen	mittel	medio	TRFK 6/8, AHP S15/10		5
	medium to large	moyen à grand	mittel bis groß	medio a grande			6
	large	grand	groß	grande	TRFK 301/5, TRFK 306		7
	large to very large	grand à très grand	groß bis sehr groß	grande a muy grande			8
	very large	très grand	sehr groß	muy grande			9
26. (*)	PQ	VG	(+)	(c)			
	<b>Flower: color of inner petals</b>	<b>Fleur : couleur des pétales internes</b>	<b>Blüte: Farbe der inneren Blütenblätter</b>	<b>Flor: color de los pétalos internos</b>			
	white	blanc	weiß	blanco	TRFK 306		1
	greenish	verdâtre	grünlich	verdoso	AHP S15/10		2
	pink	rose	rosa	rosa			3
27. (*)	QN	VG	(c)				
	<b>Sepal: anthocyanin coloration on outer side</b>	<b>Sépale : pigmentation anthocyanique sur la face externe</b>	<b>Kelchblatt: Anthocyanfärbung der Außenseite</b>	<b>Sépalo: pigmentación antocianica de la cara externa</b>			
	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	TRFK 6/8		1
	medium	moyenne	mittel	media			2
	strong	forte	stark	fuerte	TRFK 306		3
28.	QL	VG	(c)				
	<b>Sepal: pubescence of outer side</b>	<b>Sépale : pilosité de la face externe</b>	<b>Kelchblatt: Behaarung der Außenseite</b>	<b>Sépalo: pubescencia de la cara externa</b>			
	absent	absente	fehlend	ausente	TRFK 306		1
	present	présente	vorhanden	presente			9
29. (*)	QN	VG	(c)				
	<b>Style: length</b>	<b>Style : longueur</b>	<b>Griffel: Länge</b>	<b>Estilo: longitud</b>			
	short	courte	kurz	corta	TRFCA SFS150		1
	short to medium	courte à moyenne	kurz bis mittel	corta a media			2
	medium	moyenne	mittel	media	AHP S15/10		3
	medium to long	moyenne à longue	mittel bis lang	media a larga			4
	long	longue	lang	larga	TRFK 306		5

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>30.</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(c)</b>				
	<b>Style: position of splitting</b>	<b>Style : position de la scission</b>	<b>Griffelspaltung: Position</b>	<b>Estilo: posición de la división</b>				
	low	basse	niedrig	baja	EPK TN14-3		1	
	medium	moyenne	mittel	media	TRFK 306		2	
	high	haute	hoch	alta	TRFK 6/8		3	
<b>31. (*)</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(c)</b>				
	<b>Stigma: position in relation to stamens</b>	<b>Stigmate : position par rapport aux étamines</b>	<b>Narbe: Stellung im Verhältnis zu den Staubblättern</b>	<b>Estigma: posición en relación con los estambres</b>				
	far below	loin au-dessous	weit unterhalb	muy por debajo	TRFK 430/90		1	
	moderately below	modérément au-dessous	mittel unterhalb	medianamente por debajo	EPK TN14-3		2	
	same level	au même niveau	auf gleicher Höhe	al mismo nivel	AHP S15/10		3	
	moderately above	modérément au-dessus	mittel oberhalb	medianamente por encima	EPKD99/10		4	
	far above	loin au-dessus	weit oberhalb	muy por encima	EPK C12		5	
<b>32.</b>	<b>QL</b>	<b>VG</b>		<b>(c)</b>				
	<b>Ovary: pubescence</b>	<b>Ovaire : pilosité</b>	<b>Fruchtknoten: Behaarung</b>	<b>Ovario: pubescencia</b>				
	absent	absente	fehlend	ausente			1	
	present	présente	vorhanden	presente	AHP S15/10, TRFK 31/8		9	
<b>33.</b>	<b>QN</b>	<b>VG</b>		<b>(c)</b>				
	<b>Ovary: density of pubescence</b>	<b>Ovaire : densité de la pilosité</b>	<b>Fruchtknoten: Dichte der Behaarung</b>	<b>Ovario: densidad de la pubescencia</b>				
	sparse	lâche	gering	laxa	TRFK 31/8		1	
	sparse to medium	lâche à moyenne	locker bis mittel	laxa a media			2	
	medium	moyenne	mittel	media	AHP S15/10		3	
	medium to dense	moyenne à dense	mittel bis dicht	media a densa			4	
	dense	dense	stark	densa	TRFK 6/8		5	

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:

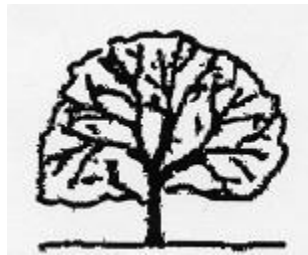
- (a) Observations should be made at the earliest 15 months after transplanting or at the first flush of the year.
- (b) Observations should be made on the fifth fully developed leaf from the top of the branch.
- (c) Observations should be made on fully developed flowers at the time of full flowering.

8.2 *Explanations for individual characteristics*

Ad. 1: Plant: type



1  
shrub



2  
semi-arbor



3  
arbor

Ad. 2: Plant: growth habit



1  
fastigate



2  
upright



3  
upright to spreading



4  
spreading

Ad. 3: Plant: vigor

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



Ad. 5: Branch: zigzag



1  
absent



9  
present

Ad. 6: Young shoot: time of beginning of “one and a bud” stage

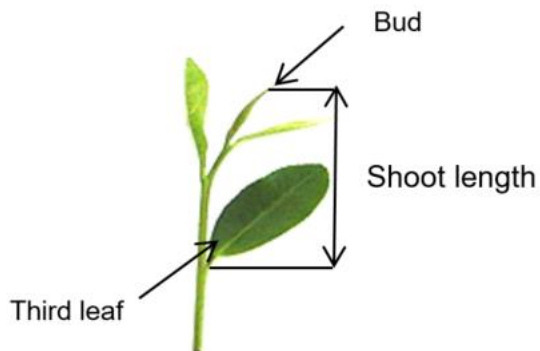
The time of beginning of “one and a bud” stage is reached when 30% of plants have young shoots at the “one leaf and a bud” stage.

Ad. 9: Young leaf: anthocyanin coloration at base of petiole

Observations should be made on the third leaf from the bud.

Ad. 10: Young shoot: length

Observations should be made at “three and a bud stage”.



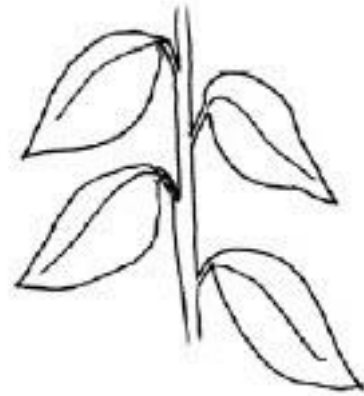
Ad. 11: Leaf blade: attitude



1  
upwards

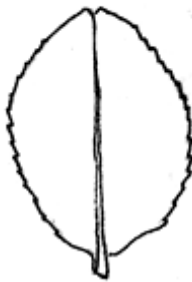


3  
horizontal



5  
downwards

Ad. 14: Leaf blade: length/width ratio

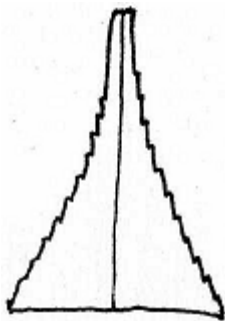


1  
low



3  
high

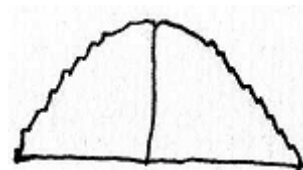
Ad. 15: Leaf blade: shape of apex



1  
acuminate

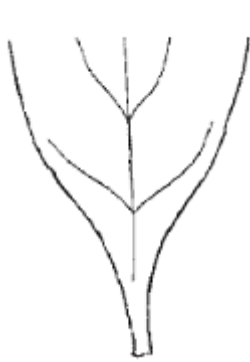


2  
acute

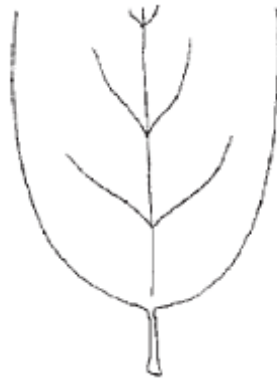


3  
obtuse

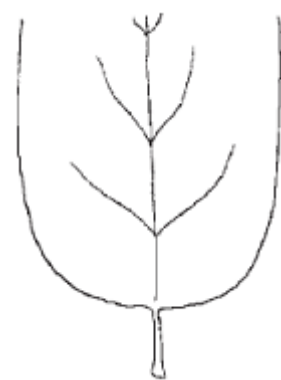
Ad. 16: Leaf blade: shape of base



1  
acute



2  
obtuse



3  
truncate

Ad. 17: Leaf blade: shape in cross section



1  
folded upwards



2  
flat



3  
recurved

Ad. 18: Leaf blade: undulation of margin



1  
absent or weak

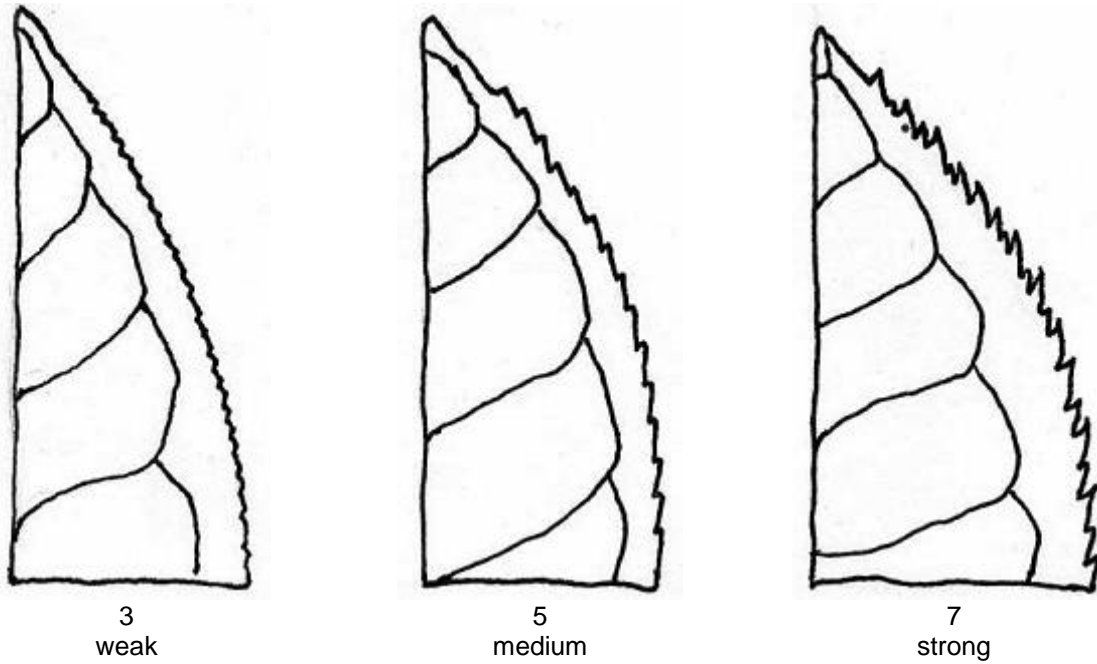


3  
medium



5  
strong

Ad. 19: Leaf blade: serration of margin



Ad. 20: Leaf blade: texture

Observations should be made on the upper side of the leaf blade.

Ad. 21: Leaf blade: color

See Ad. 20

Ad. 22: Leaf blade: intensity of color

See Ad. 20

Ad. 23: Time of flowering

Time of flowering is reached when 50% of the plants have 50% of flowers open.

Ad. 26: Flower: color of inner petals



a = Inner petal  
b = Outer petal

Ad. 30: Style: position of splitting



1  
low



2  
medium



3  
high

Ad. 31: Stigma: position in relation to stamens



1  
far below



3  
same level



5  
far above

9. Literature

Chen, L., Yang, Y.J., Yu, F.L., 2005: Descriptors and data standard for tea (*Camellia* spp.). China Agricultural Press, Beijing, CN

Chen, L., Yu, F.L., Tong, Q.Q., 2000: Discussions on phylogenetic classification and evolution of section *Thea*. *Journal of Tea Science*, 20(2): 89-94

IPGRI, 1997: Descriptor for tea (*Camellia Sinensis*). International Plant Genetic Resources Institute, Rome, IT

Wachira, F.N., Kamunya, S.M., Chalo, R., Maritim, T., Kinyangi, T., 2012:T RFK Clonal Catalogue, (1st Edition), Tea Research Foundation of Kenya (TRFK), KE

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		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="Camellia sinensis (L.) Kuntze"/>
1.2	Common name	<input type="text" value="Tea"/>
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"/>

#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)	<i>In vitro</i> propagation	[ ]
(c)	Other (state method)	[ ]
	<input type="text"/>	
4.2.2	Other (Please provide details)	[ ]
	<input type="text"/>	

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 Plant: type (1)</b>		
shrub	TRFK 536, TRFK 543	1 [ ]
semi-arbor	AHP S15/10	2 [ ]
arbor	TRFK 56/89	3 [ ]
<b>5.2 Plant: growth habit (2)</b>		
fastigate		1 [ ]
upright	TRFK 301/3	2 [ ]
upright to spreading	AHP S15/10	3 [ ]
spreading	TRFK 371/8	4 [ ]
<b>5.3 Young shoot: density of bud pubescence (8)</b>		
absent or sparse	TRFK 31/8	1 [ ]
sparse to medium		2 [ ]
medium	TRFK 704/2	3 [ ]
medium to dense		4 [ ]
dense	AHP S15/10	5 [ ]
<b>5.4 Leaf blade: length/width ratio (14)</b>		
low	AHP S15/10	1 [ ]
medium	TRFK 31/8, TRFK 704/2	2 [ ]
high	EPK C12, TRFK301/6	3 [ ]
<b>5.5 Leaf blade: color (21)</b>		
green	TRFK 31/8	1 [ ]
purple	TRFK 306	2 [ ]

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>Plant: growth habit</i>	<i>upright</i>	<i>spreading</i>
Comments:			

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

#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

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

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".

.....

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]