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TG/95/4(proj.1)
ORIGINAL: English
DATE: 2017-07-24

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

LAGERSTROEMIA *

UPOV Code(s):

LAGER

Lagerstroemia L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from France
to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees
at its fiftieth session, to be held in Victoria, British Columbia, Canada
from 2017-09-11 to 2017-09-15

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Lagerstroemia L.	Crape Myrtle	Lagerstrœmia	Lagerstroemia	Lagerstroemia, Lagestroemia

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

ASSOCIATED DOCUMENTS

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

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

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Lagerstroemia* L..

2. Material Required

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

2.2 The material is to be supplied in the form of plants capable of flowering and expressing all relevant characteristics of the variety during the first growing cycle.

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

6 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.

3.2 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

Each test should be designed to result in a total of at least 3 plants.

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 3 plants or parts of plants taken from each of 3 plants and any other observations made on all plants in the test, disregarding any off-type plants.

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 second column of 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 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 3 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: growth type (characteristic 3)
(b) Flower: number of colors on upper side of petal (characteristic 22)
(c) Flower: main color of upper side of petal (characteristic 23)
(d) Flower: secondary color of upper side of petal (characteristic 24)
(e) Time of beginning of flowering (characteristic 34)

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 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	*Note*
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	*Note*
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

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 8.1

6 Not applicable

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
1.	**(*)**	**QN VG**					
		Plant: time of bud burst					
		early				Petite Red	3
		medium				Mon Panaché, Soir d'été	5
		late				Berlingo Menthe, Durant Red	7
2.	**(*)**	**QN VG**	**(+)**				
		Plant: growth habit					
		upright				Lucas Red, Dynamite	3
		bushy				Bergerac, Perigord Pourpre	5
		spreading				Petite Canaille Blanc, Houston	7
3.	**(*)**	**QL VG**					
		Plant: growth type					
		dwarf				Red Filli, Coral Filli, Violet Filli	1
		normal				Water Melon	2
4.	**(*)**	**QN VG**	**(+)**				
		Stem: anthocyanin coloration					
		weak				Yang Tse, Nana Lavender	3
		medium				Soir d'été, Fushia d'été	5
		strong				Lucas Red	7
5.	**(*)**	**QN MG/VG**					
		Leaf blade: length					
		short				Coral Filli	3
		medium				Perigord Pourpre	5
		long				Burgundi Cotton	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	**(*)**	**QN MG/VG**					
		Leaf blade: width					
		narrow				Petite Canaille Blanc	3
		medium				Braise d'été	5
		broad				Hopi	7
7.		**QN MG/VG**					
		Leaf blade: ratio length/width					
		moderately elongated					3
		medium					5
		moderately compressed					7
8.	**(*)**	**PQ VG**					
		Leaf blade: shape					
		only elliptic				Red Rocket	1
		mainly elliptic				Violet Filli, Pink Velours	2
		elliptic and obovate equally mixed				Dynamite	3
		mainly obovate				Red Filli, Camaïeu d'été	4
		only obovate					5
9.	**(*)**	**PQ VG**					
		Leaf blade: intensity of green color					
		light				Yang Tse, Nana Lavender	3
		medium				Tonto	5
		dark				Saint Emilion	7
10.	**(*)**	**QN VG**	**(+)**				
		Leaf blade: anthocyanin coloration of margin					
		absent				Saint Emilion	1
		present				Souvenir d'André Desmartis	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.	**(*)**	**QN** **VG**					
		Leaf blade: anthocyanin coloration					
		absent				Petite Canaille Blanc	1
		present				Lucas Red	9
12.	**(*)**	**QN** **MG/VG**					
		Leaf blade: intensity of anthocyanin coloration					
		weak				Coral Filli	3
		medium				Pink Velours	5
		strong				Dynamite	7
13.	**(*)**	**QN** **MG/VG**	**(+)**				
		Leaf blade: undulation of margin					
		absent or very weak				Violet Filli, Hopi	1
		weak				Fushia d'été	3
		medium					5
		strong				Desha	7
14.	**(*)**	**QN** **VG**					
		Leaf blade: glossiness of upper side					
		absent or weak					1
		medium					5
		strong					7
15.	**(*)**	**QN** **VG**					
		Plant: number of flowers					
		few				Lucas Red	3
		medium				Bergerac, Fushia d'été	5
		many				Petit Orchid	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	**(*)**	**PQ VG**	**(+)**				
		Flower bud: shape					
		globular				Mon Panaché, Saint Emilion	1
		globular to cylindrical				Soir d'été, Petit Orchid	2
		cylindrical				Red Imperator	3
		conical				Bergerac, Seminole	4
		trapezoid				Potomac	5
17.		**QN MG/VG**					
		Flower bud: length					
		long				La Mousson	
		medium				Terre Chinoise	
		short				Coral Filli	
18.		**QN MG/VG**					
		Flower bud: width					
		narrow				Petite Red	3
		medium					5
		broad				Saint Emilion, Water Melon	7
19.		**QN MG/VG**	**(+)**				
		Flower bud: prominence of suture					
		weak				Jeanne Desmartis	3
		medium				Yang Tse	5
		strong				Magestic Orchid, Petite Canaille Blanc	7
20.	**(*)**	**QN VG**					
		Flower bud: intensity of antho-cyanin coloration					
		weak				Near East	3
		medium				Violet d'été	5
		strong				Lucas Red	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
21.		**QN VG**					
		Flower bud: glossiness					
		weak				La Valette	3
		medium				Margaux	5
		strong				Braise d'été, Pink Velours	7
22.	**(*)**	**QL VG**					
		Flower: number of colors on upper side of petal					
		one				Soir d'été	1
		two				Berlingo Menthe	2
23.	**(*)**	**PQ MS**					
		Flower: main color of upper side of petal					
		RHS Colour Chart (indicate reference number)					
24.	**(*)**	**PQ MS**					
		Flower: secondary color of upper side of petal					
		RHS Colour Chart (indicate reference number)					
25.	**(*)**	**QN VG**	**(+)**				
		Flower: diameter					
		small					3
		medium					5
		large					7
26.	**(*)**	**QN VG**	**(+)**				
		Petal: undulation of margin					
		moderate					3
		medium					5
		strong					7
		very strong					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
27.		**QN MG/VG**	**(+)**				
		External stamen: length					
		short					1
		medium					2
		long					3
28.		**QN VG**					
		Fruit: length					
		short				Coral Filli	1
		medium				Camaïeu d'été	2
		long					3
29.		**QN VG**					
		Fruit: diameter					
		small				Margaux	1
		medium				Pink Velours	2
		broad				Fushia d'été	3
30.	**(*)**	**PQ VG**	**(+)**				
		Fruit: shape					
		ellipsoid				Petite Canaille Blanc, Perigord Pourpre	1
		globular				Burgundi Cotton, Red Rocket	2
31.	**(*)**	**QN VG**					
		Fruit: intensity of green color					
		weak				Powhatan, Catawba	3
		medium				Yang Tse	5
		strong				Souvenir d'André Desmartis	7
32.		**QL VG**					
		Fruit: depression at base					
		absent				Bergerac	1
		present				Terre Chinoise, Saint Emilion	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
33.		**QL** **VG**					
		Fruit: depression at apex					
		absent				Bergerac	1
		present				Mon Panaché	9
34.	**(*)**	**QN** **MG/VG**					
		Time of beginning of flowering					
		early				Near East, Perigord Pourpre	3
		medium				Tonto	5
		late				Durant Red, Red Rocket	7
35.		**QN** **MS/VG**					
		Time of leaf fall					
		early				Terre Chinoise	3
		medium				Soir d'été, Violet d'été	5
		late				Catawba	7

8.1 Explanations for individual characteristics

Ad. 2: Plant: growth habit

3
upright

5
bushy

7
spreading

Ad. 4: Stem: anthocyanin coloration
Photos would be provided in draft 2 (2018).

Ad. 10: Leaf blade: anthocyanin coloration of margin
Photos would be provided in draft 2 (2018).

Ad. 13: Leaf blade: undulation of margin
Photos would be provided in draft 2 (2018).

Ad. 16: Flower bud: shape
Photos would be provided in draft 2 (2018).

Ad. 19: Flower bud: prominence of suture
Photos would be provided in draft 2 (2018).

Ad. 25: Flower: diameter
Photos would be provided in draft 2 (2018).

Ad. 26: Petal: undulation of margin
Photos would be provided in draft 2 (2018).

Ad. 27: External stamen: length
Photos would be provided in draft 2 (2018).

Ad. 30: Fruit: shape
Photos would be provided in draft 2 (2018).

9. Literature

Byers, MD. (1997): Crape Myrtle. Owl Bay Pub. Cornell University, Ithaca, New York State 14850, United States of America, 180pp.

Edwards, AD. (1994): Freezing Tolerance of Lagerstroemia Indica X Fauriei Cultivars in USDA Zones 7 and 8. Mississippi State University. Department of Plant and Soil Sciences. United States of America. 66 pp.

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	*Lagerstroemia* L.
1.2 Common name	Crape Myrtle

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

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

#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

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:

4.2 Method of propagating the variety

4.2.1 Other [ ]

(Please provide details)

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 Test Guidelines; please mark the note which best corresponds).

	Characteristics	Example Varieties	Note
5.1 (2)	**Plant: growth habit**		
	upright	Dynamite, Lucas Red	3 [ ]
	bushy	Bergerac, Perigord Pourpre	5 [ ]
	spreading	Houston, Petite Canaille Blanc	7 [ ]
5.2 (4)	**Stem: anthocyanin coloration**		
	weak	Nana Lavender, Yang Tse	3 [ ]
	medium	Fushia d'été, Soir d'été	5 [ ]
	strong	Lucas Red	7 [ ]
5.3 (11)	**Leaf blade: anthocyanin coloration**		
	absent	Petite Canaille Blanc	1 [ ]
	present	Lucas Red	9 [ ]
5.4 (22)	**Flower: number of colors on upper side of petal**		
	one	Soir d'été	1 [ ]
	two	Berlingo Menthe	2 [ ]
5.5 (23)	**Flower: main color of upper side of petal**		
	RHS Colour Chart (indicate reference number)		
5.6 (24)	**Flower: secondary color of upper side of petal**		
	RHS Colour Chart (indicate reference number)		
5.7 (34)	**Time of beginning of flowering**		
	early	Near East, Perigord Pourpre	3 [ ]
	medium	Tonto	5 [ ]
	late	Durant Red, Red Rocket	7 [ ]

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

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 **similar** variety(ies)	Describe the expression of the characteristic(s) for **your** candidate variety
Example			

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

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:

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]