



Disclaimer: unless otherwise agreed by the Council of UPOV, only documents that have been adopted by the Council of UPOV and that have not been superseded can represent UPOV policies or guidance.

This document has been scanned from a paper copy and may have some discrepancies from the original document.

Avertissement: sauf si le Conseil de l'UPOV en décide autrement, seuls les documents adoptés par le Conseil de l'UPOV n'ayant pas été remplacés peuvent représenter les principes ou les orientations de l'UPOV.

Ce document a été numérisé à partir d'une copie papier et peut contenir des différences avec le document original.

Allgemeiner Haftungsausschluß: Sofern nicht anders vom Rat der UPOV vereinbart, geben nur Dokumente, die vom Rat der UPOV angenommen und nicht ersetzt wurden, Grundsätze oder eine Anleitung der UPOV wieder.

Dieses Dokument wurde von einer Papierkopie gescannt und könnte Abweichungen vom Originaldokument aufweisen.

Descargo de responsabilidad: salvo que el Consejo de la UPOV decida de otro modo, solo se considerarán documentos de políticas u orientaciones de la UPOV los que hayan sido aprobados por el Consejo de la UPOV y no hayan sido reemplazados.

Este documento ha sido escaneado a partir de una copia en papel y puede que existan divergencias en relación con el documento original.



INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

HARMONIZATION OF STATES OF EXPRESSION AND NOTES OF CHARACTERISTICS

TABLE OF CONTENTS

	<u>Paragraphs</u>
I. INTRODUCTION	1
II. GENERAL RULES	2-12
A. Quantitative Characteristics	7-10
B. Qualitative Characteristics	11+12
III. INDIVIDUAL CASES	
A. Quantitative Presentation	13-21
(i) Clearly Quantitative Characteristics Without Extreme State	13
(ii) One-dimensional Characteristics Without Extreme State	14+15
(iii) Clearly Quantitative Characteristics With at Least one Extreme State	16
(iv) Use of States With Even Notes	17-21
B. Qualitative Presentation	22-33
(i) True Qualitative Characteristics	22
(ii) Characteristics With Multidimensional and Asymmetric States	23+24
(iii) Quantitative Characteristics in Which an Absence is Combined With two Degrees of Presence	25
(iv) Quantitative Characteristics in Which two Extremes are Combined With one Intermediate State	26
(v) Characteristics With Individual and Combined States	27
(vi) Characteristics With States Relative to a Fixed Point	28+29
(vii) Characteristics With States With Fixed Ranges	30
(viii) Characteristics in Which Intermediate States can be Ignored in Practice	31-33

I. INTRODUCTION

1. During its sessions in 1987, 1988 and 1989 the Technical Committee discussed the Notes for states of expression of certain virtually quantitative characteristics which had been given different Notes, depending on the taxa for which Test Guidelines had been established. On the basis of document TC/XXIII/5 and proposals given by individual Technical Working Parties the Technical Committee finally reached an agreement on certain frequently occurring individual cases (see paragraphs 52 and 53 of document TC/XXV/11). These cases and the general rules from the General Introduction to the Test Guidelines are set out below. The Technical Committee recommends that the Technical Working Parties take into account this agreement when drafting or revising Test Guidelines.

II. GENERAL RULES

2. As general rules for giving states of expression and Notes, paragraphs 9 to 12 and 44 to 47 of the General Introduction to the Test Guidelines (document TG/1/2) should be taken into account. They are therefore repeated in the present document.

3. The characteristics used to distinguish varieties may be either qualitative or quantitative (paragraph 9 of TG/1/2).

4. "Qualitative characteristics" should be those which show discrete discontinuous states with no arbitrary limit on the number of states. Some characteristics which do not fit this definition may be handled as qualitative when the states encountered are sufficiently different from one another (paragraph 10 of TG/1/2).

5. "Quantitative characteristics" are those which are measurable on a one dimensional scale and show continuous variation from one extreme to the other. They are divided into a number of states for the purpose of description (paragraph 11 of TG/1/2).

6. Characteristics which are assessed separately may subsequently be combined, for example the length/width ratio. Combined characteristics have to be treated in the same way as other characteristics (paragraph 12 of TG/1/2).

A. Quantitative Characteristics

7. As a general rule, states are formed in such a way that, for the weak and strong expressions, a reasonable word pair is chosen, for example:

weak/strong
short/long
small/large

These word pairs are given the Notes 3 and 7 and the word "medium" is given the Note 5. The remaining states of the scale indicated by the Notes 1 to 9 are formed according to the following example:

<u>States</u>	<u>Notes</u>
very weak	1
very weak to weak	2
weak	3
weak to medium	4
medium	5
medium to strong	6
strong	7
strong to very strong	8
very strong	9

(paragraph 45 of TG/1/2)

8. The full scale (1 to 9) may be used, even if only some of the states (for example, only 1, 3, 5, 7, 9 or 3, 5, 7) have been indicated in the Test Guidelines for reasons of simplification (paragraph 46 of TG/1/2).

9. In alternative observations, the state "absent" is coded by Note 1 and the state "present" by Note 9. If in a characteristic it is necessary to make a distinction between complete absence and different degrees of presence, the characteristic is split into one alternative characteristic with the states "absent (1)" and "present (9)" and in another quantitative characteristic with the Notes from 1 to 9. For those characteristics where it is not possible to make a distinction between "absent" and "very weak," the Note 1 receives the meaning "absent or very weak" and then represents the first state in the scale 1 to 9 for quantitative characteristics (paragraph 47 of TG/1/2).

10. For quantitative characteristics furthermore the following should normally be respected:

(i) Note "5" should represent the medium state within the whole range of variation;

(ii) extreme states should be given the Notes 1 and 9;

(iii) states of expression should be given symmetrically;

(iv) for measured characteristics, each step between Notes should be of the same size and the difference between two Notes should represent at least one LSD;

(v) higher Notes should represent higher values where the characteristic concerned is related to value.

B. Qualitative Characteristics

11. Qualitative characteristics, as well as those quantitative characteristics which are handled in the same way as true qualitative characteristics, are classified by consecutive numbers according to the state commencing with Note 1 and with no upper limit.

	<u>Characteristics</u>	<u>States</u>	<u>Notes</u>
Ex. 16	Sex of plant	dioecious female	1
		dioecious male	2
		monoecious unisexual	3
		monoecious hermaphrodite	4

As far as it is possible to build up an order for the expressions, the smaller, lesser or lower expressions should be assigned the lower Note (paragraph 44 of TG/1/2).

12. When each state of expression corresponds to a whole number under 10, the respective figure should be used for the Note.

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 17	Ploidy	diploid	2
		tetraploid	4

III. INDIVIDUAL CASES

A. Quantitative Presentation

(i) Clearly Quantitative Characteristics Without Extreme State

13. These characteristics are the most common case in the Test Guidelines and seldom pose problems. Typical examples are:

	<u>Characteristics</u>	<u>States</u>	<u>Notes</u>
Ex. 1	Length	short	3
		medium	5
		long	7
Ex. 2	Number	low	3
		medium	5
		high	7
Ex. 3	Intensity	weak	3
		medium	5
		strong	7
Ex. 4	Shade (color)	light	3
		medium	5
		dark	7

(ii) One-dimensional Characteristics Without Extreme State

14. The same rules as for the preceding group of characteristics apply to all one-dimensional characteristics in which shape and attitude characteristics are the most frequent ones.

	<u>Characteristics</u>	<u>States</u>	<u>Notes</u>
Ex. 5	Shape	narrow elliptic	3
		elliptic	5
		broad elliptic	7
Ex. 6	Attitude	erect	3
		semi-erect	5
		horizontal	7

15. It is preferable always to give the same Note to the same state of expression, particularly where the characteristic is observed quantitatively. However, some characteristics, typically those concerning attitude, could be given different Notes for their states of expressions, depending on the possible range of differentiation, for example whether the whole range covers only 90° (Ex. 6) (horizontal being already the extreme) or 180° (Ex. 7).

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 7	Attitude	erect	1
		semi-erect	3
		horizontal	5
		drooping	7
		strongly drooping	9

(iii) Clearly Quantitative Characteristics With at Least one Extreme State

16. The following examples show typical quantitative characteristics with at least one extreme state of expression. As soon as one extreme state exists, it is preferable to indicate also the other extreme and thus the whole range from 1 to 9.

	<u>Characteristics</u>	<u>States</u>	<u>Notes</u>
Ex. 8	Hairiness	absent or very weak	1
		weak	3
		medium	5
		strong	7
		very strong	9
Ex. 9	Curvature	flat or very slightly convex	1
		slightly convex	3
		medium convex	5
		strongly convex	7
		very strongly convex	9
Ex. 10	Attitude	erect	1
		semi-erect	3
		intermediate	5
		semi-prostrate	7
		prostrate	9
Ex. 11	Length of fertile stamen in relation to style	very much shorter	1
		shorter	3
		equal	5
		longer	7
		very much longer	9
Ex. 12	Position of maximum width	at blossom end	1
		at a quarter from blossom end	3
		at center	5
		at a quarter from stem end	7
		at stem end	9

(For the examples 11 and 12 see also paragraph 28 with examples 35 and 36).

(iv) Use of States With Even Notes

17. As mentioned in paragraph 8, for simplification only a reduced number of states of the whole quantitative range from 1 to 9 may be indicated. In case only Notes 3, 5 and 7 are indicated, this should not be misunderstood as a classification into 3 groups, but instead the whole range from 1 to 9 is applicable including all states with even Notes and especially Notes 4 and 6.

18. The following three main cases can, however, be identified in which the mentioning of states with even Notes in Test Guidelines is necessary:

- quantitative characteristic with three possible states (see paragraph 19)
- indication of example varieties (see paragraph 20)
- precision of otherwise unclear wording of the state of expression concerned (see paragraph 21).

19. Use of States With Even Notes for a Quantitative Characteristic With Three Possible States. If in a quantitative characteristic the total of possible differences is so small that according to other rules mentioned above only three states can be observed, these states should receive the Notes 4, 5 and 6 as in the following example:

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 13	Thickness	thin to medium	4
		medium	5
		medium to thick	6

20. Use of States With Even Notes for Reasons of Indication of Example Varieties. If the experts wish to agree also on example varieties for states with even Notes, especially for characteristics with a large range of expressions, the whole range of 3, 4, 5, 6 and 7 or even 1, 2, 3, 4, 5, 6, 7, 8 and 9 is indicated in the Test Guidelines, provided that there is no risk of a change in the order of the example varieties indicated.

21. Use of States With Even Notes for the Precision of Otherwise Unclear Wording. In cases where the wording of states with even Notes is unclear or leaves several possibilities open, it is preferable to also specify the wording of the states with even Notes to ensure the use of the same wording by everybody.

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 14	Attitude	upwards	3
		semi-upwards	4
		horizontal	5
		semi-downwards	6
		downwards	7

Without the indication in the example 14, experts might give Note 4 also the wording "slightly upwards" or "horizontal to upwards" etc. (see also paragraph 33 for further possible Notes).

B. Qualitative Presentation

(i) True Qualitative Characteristics

22. True qualitative characteristics should receive continuous numbering for the states from Note 1 upwards. Hereby, as stated already in paragraphs 11 and 12, as far as possible the smaller, lesser or lower expression should receive the lower Note.

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 15	Embryony	mono-embryonic	1
		poly-embryonic	2
Ex. 16	Sex of plant	dioecious female	1
		dioecious male	2
		monoecious unisexual	3
		monoecious hermaphrodite	4
Ex. 17	Ploidy	diploid	2
		tetraploid	4

(ii) Characteristics With Multi-dimensional and Asymmetrical States

23. Multi-dimensional and asymmetrical states of characteristics should be given Notes with continuous numbers. In this group fall most characteristics on shape, color, etc. Despite certain possible difficulties, it should be ensured that the order of the states coincides with the logic progression of the expression of the characteristic.

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 18	Color	light green	1
		dark green	2
		yellow green	3
Ex. 19	Shape	ovate	1
		elliptic	2
		obovate	3
Ex. 20	Shape	round	1
		elliptic	2
		ovate	3
Ex. 21	Attitude	climbing	1
		erect	2
		spreading	3

24. If in the above examples 20 and 21 a further differentiation could be made between the states, through the indication of intermediate states, the characteristics could be formulated as follows:

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 22	Shape	round	1
		round to elliptic	2
		elliptic	3
		elliptic to ovate	4
		ovate	5

Ex. 23	Attitude	climbing	1
		slightly climbing	2
		erect	3
		slightly spreading	4
		spreading	5

(iii) Quantitative Characteristics in Which an Absence is Combined With two Degrees of Presence

25. The quantitative presentation should normally be used in the case of quantitative characteristics which include at least one extreme state (see paragraph 16 above). However, if in those characteristics actually only an absence and two degrees of presence can be observed, the qualitative presentation should be used. The state "absent" should receive the Note 1 and the two degrees of presence, the Notes 2 and 3.

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 24	Hairiness	absent	1
		slightly hairy	2
		strongly hairy	3
Ex. 25	Undulation	non undulate	1
		slightly undulate	2
		strongly undulate	3
Ex. 26	Shape of midrib in cross-section	flat	1
		slightly convex	2
		clearly convex	3
Ex. 27	Curvature	straight	1
		slightly curved	2
		strongly curved	3
Ex. 28	Adherence	non-adherent	1
		semi-adherent	2
		fully adherent	3
Ex. 29	Presence	absent	1
		occasionally present	2
		always present	3

(iv) Quantitative Characteristics in Which two Extremes are Combined With one Intermediate State

26. In a similar derogation from the normal rule as for the preceding case, states of expression of quantitative characteristics in which only two extremes and an intermediate presentation can be observed, should receive the qualitative presentation, with Notes 1, 2 and 3, whereby the intermediate expression receives Note 2.

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 30	Distribution	even	1
		slightly uneven	2
		strongly uneven	3
Ex. 31	Attitude	erect	1
		intermediate	2
		prostrate	3

Ex. 32	Persistence	none	1
		partial	2
		total	3

(v) Characteristics With Individual and Combined States

27. In the case of qualitative characteristics containing in one characteristic individual expressions and the combination of two individual expressions of the same characteristic, the combined states should be placed at the end of the list of states.

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 33	Distribution of stem colors	in dots only	1
		in patches only	2
		in dots and patches	3
Ex. 34	Color	only green	1
		only purple	2
		green and purple	3

(vi) Characteristics With States Relative to a Fixed Point

28. In characteristics in which a distinction is made relative to a fixed point and in total only three cases can be observed, that point should receive the Note 2 and the extremes the Notes 1 and 3.

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 35	Length of fertile stamen in relation to style	shorter	1
		equal	2
		longer	3
Ex. 36	Position of maximum width	toward blossom end	1
		at center	2
		toward stem end	3

29. As soon as a differentiation is possible in more than three expressions, the characteristics in examples 35 and 36 have to be handled as normal quantitative characteristics as mentioned under paragraph 16 above:

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 11	Length of fertile stamen in relation to style	very much shorter	1
		shorter	3
		equal	5
		longer	7
		very much longer	9
Ex. 12	Position of maximum width	at blossom end	1
		at a quarter from blossom end	3
		at center	5
		at a quarter from stem end	7
		at stem end	9

(vii) Characteristics With States With Fixed Ranges

30. Characteristics with states which have fixed ranges, have to follow the qualitative presentation, as by the definition of the states no intermediate states exist.

	<u>Characteristic</u>	<u>States</u>	<u>Notes</u>
Ex. 37	Number of flowers	usually one	1
		one to three	2
		usually three	3
Ex. 38	Number	less than seven	1
		between seven and ten	2
		more than ten	3
Ex. 39	Number	always one	1
		sometimes more than one	2
		always more than one	3

(viii) Characteristics in Which Intermediate States can be Ignored in Practice

31. The following examples could have intermediate states, but for practical reasons (difficulty in measuring, shortening of time for assessment), intuitional assessment, using a limited number of states of expression and ignoring their intermediate states, is considered possible without endangering the final decisions:

	<u>Characteristics</u>	<u>States</u>	<u>Notes</u>
Ex. 40	Shape of base	pointed	1
		rounded	2
		flattened	3
Ex. 41	Type of incision of margin	crenate	1
		serrate	2
		dentate	3
Ex. 42	Color	yellow	1
		green yellow	2
		yellow green	3
		green	4
Ex. 43	Type of flower	single	1
		double	2

32. In example 43, the state "semi-double" could exist, but, depending on the taxa, semi-double flowers could be allocated to the state "double." However, if it is thought more reasonable to classify the flower into three groups, this characteristic could read as follows:

Ex. 44	Type of flower	single	1
		semi-double	2
		double	3

33. In example 14 in paragraph 21, if ignoring intermediate states is considered to be more reasonable, the Notes "3, 5 and 7" could be replaced by the Notes "1, 2 and 3" as follows:

Ex. 14	Attitude	upwards	3
		semi-upwards	4
		horizontal	5
		semi-downwards	6
		downwards	7
Ex. 45	Attitude	upwards	1
		horizontal	2
		downwards	3

[Annex giving a trilingual
summary of examples follows]