



TG/328/1

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

<p>QUINOA</p> <p>UPOV Code(s):</p> <p>CHENO_QUI</p> <p><i>Chenopodium quinoa</i> Willd.</p>
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GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Chenopodium quinoa</i> Willd.	Quinoa	Chénopode quinoa, Quinoa	Quinoa	Quinoa, Quinoa

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 *Chenopodium quinoa* Willd..

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 seed.

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

200 g of seed

The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant.

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*

The minimum duration of tests should normally be two independent 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*

3.3.1 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.

3.3.2 The optimum stage of development for the assessment of each characteristic is indicated by a number in the Table of Characteristics. The stages of development denoted by each number are described in Chapter 8.3

3.4 *Test Design*

Each test should be designed to result in a total of at least 160 plants, which should be divided between at least 2 replicates.

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 40 plants or parts of plants taken from each of 40 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 self-pollinated 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 self-pollinated varieties, a population standard of 5% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 160 plants, 13 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 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) Grain: saponin content (characteristic 1)
- (b) Time of flowering (characteristic 7)
- (c) Inflorescence: color (characteristic 12)
- (d) Seed: color (characteristic 18)

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:

<i>State</i>	<i>Note</i>
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:

<i>State</i>	<i>Note</i>
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 8.2 | |
| 6 | (a)-(c) | See Explanations on the Table of Characteristics in Chapter 8.1 | |
| 7 | Growth stage key | See Explanations on the Table of Characteristics in Chapter 8.3 | |

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	MG	(+)		00		
	Grain: saponin content		Graine : teneur en saponine	Samen: Saponingehalt	Grano: contenido de saponinas		
	absent or low		nulle ou faible	fehlend oder gering	ausente o bajo	Jessie, Vikinga	1
	medium		moyenne	mittel	medio	Carmen, Zeno	2
	high		élevée	hoch	alto	Puno, Titicaca	3
2. (*)	PQ	VG			5		
	Foliage: color		Feuillage : couleur	Laub: Farbe	Follaje: color		
	light green		vert clair	hellgrün	verde claro	Jessie	1
	medium green		vert moyen	mittelgrün	verde medio	Titicaca	2
	dark green		vert foncé	dunkelgrün	verde oscuro	Puno	3
	red		rouge	rot	rojo		4
	purple		pourpre	purpurn	púrpura	Red Carina	5
3.	QN	VG	(a)		5		
	Foliage: glaucosity		Feuillage : glaucescence	Laub: Bereifung	Follaje: glaucescencia		
	absent or weak		absente ou faible	fehlend oder gering	ausente o débil	Vikinga	1
	medium		moyenne	mittel	media	Jessie, Red Carina	3
	strong		forte	stark	fuerte	Regalona	5
4.	QN	VG	(a)		5-6		
	Leaf: size		Feuille : taille	Blatt: Größe	Hoja: tamaño		
	small		petite	klein	pequeña	Vikinga	3
	medium		moyenne	mittel	media	Riobamba, Titicaca	5
	large		grande	groß	grande	Carmen	7
5.	QN	VG	(+)	(a)	5-6		
	Leaf: dentation		Feuille : dentelure	Blatt: Zähnung	Hoja: dentado		
	absent or weak		absente ou faible	fehlend oder gering	ausente o débil	Riobamba	1
	medium		moyenne	mittel	medio	Puno	3
	strong		forte	stark	fuerte	Red Carina	5

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	PQ	VG	(+)	(a)	5-6			
	Leaf: angle of base		Feuille : angle de la base		Blatt: Winkel an der Basis	Hoja: ángulo de la base		
	acute		aigu		spitz	agudo	Regalona	1
	obtuse		obtus		stumpf	obtuso	Puno, Riobamba	2
	truncate		tronqué		abgestumpft	truncado	Atlas	3
7. (*)	QN	MG	(+)		8			
	Time of flowering		Époque de floraison		Zeitpunkt der Blüte	Época de floración		
	early		précoce		früh	temprana	Jessie, Vikinga	3
	medium		moyenne		mittel	media	Red Carina, Regalona	5
	late		tardive		spät	tardía	Atlas	7
8. (*)	PQ	VG		(b)	11			
	Stem: color		Tige : couleur		Stengel: Farbe	Tallo: color		
	white		blanc		weiß	blanco		1
	green		vert		grün	verde	Riobamba, Titicaca	2
	yellow		jaune		gelb	amarillo	Puno	3
	purple		pourpre		purpurn	púrpura	Red Carina	4
9.	QL	VG		(b)	11			
	Stem: stripes		Tige : stries		Stengel: Streifen	Tallo: rayas		
	absent		absentes		fehlend	ausentes	Red Carina	1
	present		présentes		vorhanden	presentes	Puno	9
10.	PQ	VG		(b)	11			
	Stem: color of stripes		Tige : couleur des stries		Stengel: Farbe der Streifen	Tallo: color de las rayas		
	green		vert		grün	verde	Regalona	1
	yellow		jaune		gelb	amarillo	Carmen, Titicaca	2
	pink		rose		rosa	rosa	Puno	3
	red		rouge		rot	rojo	Pasto	4
	purple		pourpre		purpurn	púrpura		5

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.	PQ	VG	(b)	11			
	Stem: pigmentation at leaf axil		Tige : pigmentation à l'aisselle de la feuille	Stengel: Pigmentierung an der Blattachse	Tallo: pigmentación en las axilas foliares		
	absent or very weak		nulle ou très faible	fehlend oder sehr gering	ausente o muy leve	Jessie	1
	weak		faible	gering	leve		3
	medium		moyenne	mittel	media	Pasto	5
	strong		forte	stark	intensa		7
12. (*)	PQ	VG		11			
	Inflorescence: color		Inflorescence : couleur	Blütenstand: Farbe	Inflorescencia: color		
	white		blanc	weiß	blanco	Jessie, Regalona	1
	green		vert	grün	verde		2
	yellow		jaune	gelb	amarillo	Atlas	3
	orange		orange	orange	naranja	Titicaca	4
	pink		rose	rosa	rosa	Carmen	5
	purple		pourpre	purpurn	púrpura	Red Carina	6
13. (*)	QN	MG	(+)	12			
	Time of maturity		Époque de maturité	Zeitpunkt der Reife	Época de madurez		
	early		précoce	früh	temprana	Jessie	3
	medium		moyenne	mittel	media	Regalona, Vikinga	5
	late		tardive	spät	tardía	Atlas	7
14. (*)	QN	MG/VG	(+)	12			
	Plant: height		Plante : hauteur	Pflanze: Höhe	Planta: altura		
	short		courte	kurz	baja	Pasto	3
	medium		moyenne	mittel	media	Titicaca	5
	tall		haute	hoch	alta	Atlas	7
15. (*)	PQ	VG		12			
	Panicle: color		Panicule : couleur	Rispe: Farbe	Panícula: color		
	light yellow brown		marron-jaune clair	hellgelbbraun	marrón amarillento claro	Jessie	1
	brown		marron	braun	marrón	Atlas	2
	black		noir	schwarz	negro	Red Carina	3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	QN	VG	(c)	12		
	Panicle: density	Panicule : densité	Rispe: Dichte	Panícula: densidad		
	sparse	faible	locker	laxa	Titicaca	3
	medium	moyenne	mittel	media	Riobamba	5
	dense	forte	dicht	densa	Dutchess	7
17.	QN	MG/VG	(c)	12		
	Panicle: width	Panicule : largeur	Rispe: Breite	Panícula: anchura		
	narrow	étroite	schmal	estrecha	Titicaca	3
	medium	moyenne	mittel	media	Riobamba	5
	broad	large	breit	ancha	Red Carina	7
18. (*)	PQ	VG		12		
	Seed: color	Graine : couleur	Samen: Farbe	Semilla: color		
	whitish	blanchâtre	weißlich	blanquecino	Puno	1
	yellow	jaune	gelb	amarillo	Jessie	2
	red	rouge	rot	rojo		3
	light brown	brun clair	hellbraun	marrón claro	Carmen	4
	grey	gris	grau	gris		5
	black	noir	schwarz	negro	Red Carina	6
19. (*)	PQ	VG	(+)	12		
	Seed: color without tegument	Graine : couleur en excluant le tégument	Samen: Farbe ohne Samenschale	Semilla: color sin el tegumento		
	white	blanc	weiß	blanco	Atlas	1
	yellow	jaune	gelb	amarillo	Carmen	2
	red	rouge	rot	rojo		3
	grey	gris	grau	gris	Red Carina, Titicaca	4
20.	QN	MG		12		
	1000 seed weight	Poids de 1000 grains	Gewicht von 1000 Samen	Peso de 1000 semillas		
	very low	très faible	sehr gering	muy bajo		1
	low	faible	gering	bajo	Red Carina	3
	medium	moyen	mittel	medio	Jessie	5
	high	élevé	groß	alto	Titicaca	7
	very high	très élevé	sehr groß	muy alto		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) To be observed on the middle part of the plant.
- (b) To be observed on the lower third of the plant.
- (c) To be observed on the upper third of the plant.

8.2 *Explanations for individual characteristics*

Ad. 1: Grain: saponin content

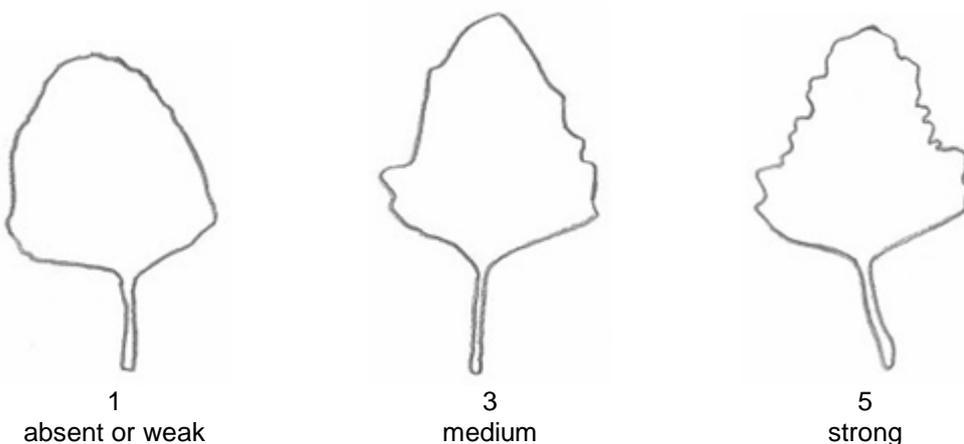
Grain saponin content is measured as a foam test. Testing should have a minimum of at least 3 replicates.

Standard afrosimetric method (Koziol, 1991)

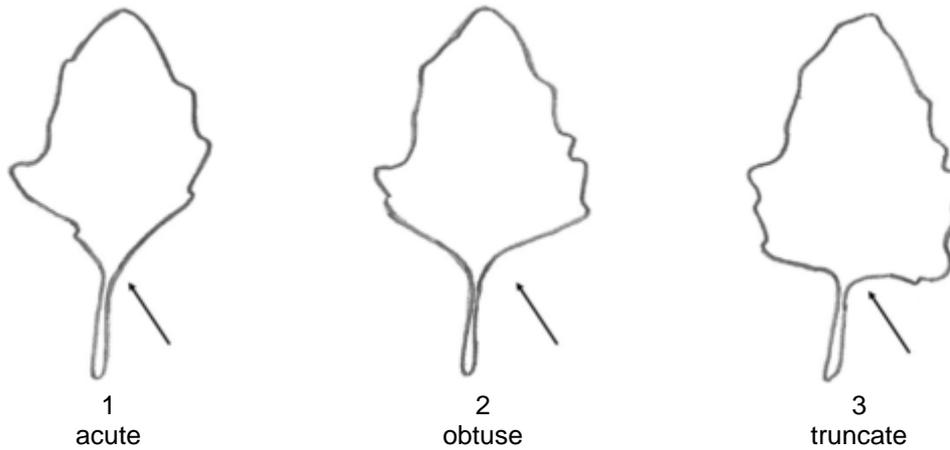
1. Weigh 0,5 g (+/- 0,2 g) quinoa seeds into a test tube (160x16 mm)
2. Addition 5 ml of distilled water, and cap the test tube.
3. Shake the test tube vigorously (4 shakes/s.) for 30 s in up and down movements.
4. Let the test tube rest for 30 minutes.
5. Repeat number 3-4.
6. After the second rest period, shake the test tube again for 30 s give a last shakedown as one would to a thermometer.
7. Rest for 5 minutes.
8. Measure the height of the foam.

Grain: saponin Foam height	absent or low < 1.0 cm	medium 1.0 cm - 5.0 cm	high > 5.0 cm
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Ad. 5: Leaf: dentation



Ad. 6: Leaf: angle of base



Ad. 7: Time of flowering

The time of flowering is reached when 50% of plants have open flowers on the upper third of the plant.

Ad. 13: Time of maturity

The time of maturity is reached when 50% of the plants are dried on the upper third of the plant.

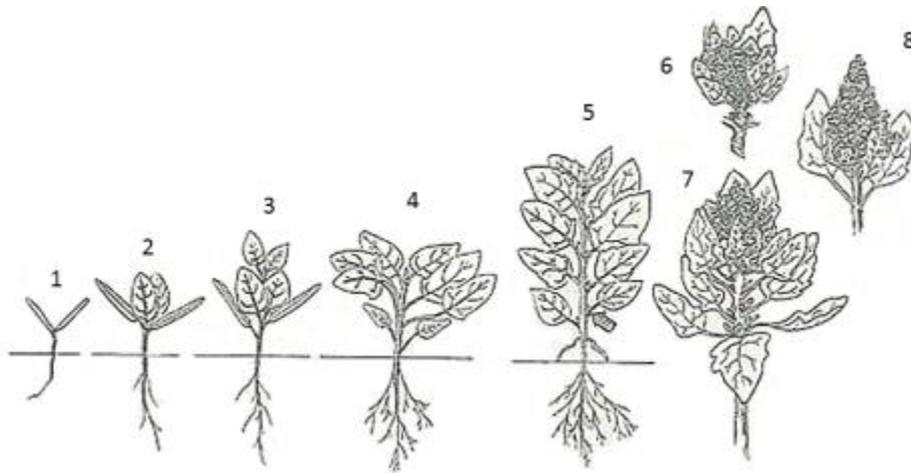
Ad. 14: Plant: height

Observations should be made including inflorescence.

Ad. 19: Seed: color without tegument

To be observed after seeds have been softly rubbed with sanding paper.

8.3 Phenology of Quinoa (*Chenopodium quinoa Willd.*)



(Mujica, A., Canahua, A., 1989)

1. Emergence (cotyledons)
2. Vegetative stage - two leaves
3. Vegetative stage - four leaves
4. Vegetative stage - six leaves
5. Ramification
6. Beginning of inflorescence emergence (panicle)
7. Inflorescence
8. Beginning of flowering
9. Flowering
10. Milky grain
11. Doughy grain
12. Physiological maturity

9. Literature

Jacobsen, S.-E., Stølen, O., 1993: Quinoa - Morphology, phenology and prospects for its production as a new crop in Europe. *European Journal of Agronomy* 2, pp 19 to 29.

Koziol, M.J. 1991: Afrosimetric estimation of threshold saponin concentration for bitterness in quinoa (*Chenopodium quinoa* Willd). *Journal of the Science of Food and Agriculture*, 54, pp. 211 to 219.

Mujica, A., Canahua, A., 1989: Fenología del cultivo de la quinua. En Curso Taller de Fitopatología de Cultivos Andinos y Uso de la Información Agrometeorológica. PICA. INIIA. Puno, PE.

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="Chenopodium quinoa Willd."/>
1.2	Common name	<input type="text" value="Quinoa"/>
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 varieties)

(.....) 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 Seed-propagated varieties

- (a) Self-pollination
- (b) Other (please provide details)

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
5.1 Grain: saponin content (1)		
absent or low	Jessie, Vikinga	1 []
medium	Carmen, Zeno	2 []
high	Puno, Titicaca	3 []
5.2 Time of flowering (7)		
very early		1 []
very early to early		2 []
early	Jessie, Vikinga	3 []
early to medium		4 []
medium	Red Carina, Regalona	5 []
medium to late		6 []
late	Atlas	7 []
late to very late		8 []
very late		9 []
5.3 Inflorescence: color (12)		
white	Jessie, Regalona	1 []
green		2 []
yellow	Atlas	3 []
orange	Titicaca	4 []
pink	Carmen	5 []
purple	Red Carina	6 []
5.4 Seed: color (18)		
whitish	Puno	1 []
yellow	Jessie	2 []
red		3 []
light brown	Carmen	4 []
grey		5 []
black	Red Carina	6 []

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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 similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Panicle: color</i>	<i>brown</i>	<i>black</i>
Comments:			

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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.]

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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".

.....

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]