

UPOV

TG/TARO(proj.4)
 ORIGINAL: English
 DATE: 2009-02-23

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
 GENEVA

DRAFT**COLOCASIA**

UPOV Code: COLOC_ESC,
 COLOC_GIG

Colocasia esculenta (L.) Schott,
Colocasia gigantea (Blume) Hook. f.

GUIDELINES**FOR THE CONDUCT OF TESTS****FOR DISTINCTNESS, UNIFORMITY AND STABILITY**

prepared by an expert from Japan

*to be considered by the Technical Committee at its forty-fifth session,
 to be held in Geneva from March 30 to April 1, 2009*

Alternative Names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Colocasia esculenta</i> (L.) Schott	Cocoyam, Dasheen, Eddo, Elephant's-ear, Kalo, Madumbe, Taro	Colocasie, Taro	Taro, Zehrwurz	Alcocaz, Colocasia, Malanga, Taro, Tayoba
<i>Colocasia gigantea</i> (Blume) Hook. f.				

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 *Colocasia esculenta* (L.) Schott and *Colocasia gigantea* (Blume) Hook. f..

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 cormels, within the weight range 35 to 40 g.

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

20 cormels.

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 recommended method of observing the characteristic is indicated by the following key in the second column of the Table 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.

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 20 plants, which should be divided between 2 or more replicates.

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 *Number of Plants / Parts of Plants to be Examined*

Unless otherwise indicated, all observations should be made on 20 plants or parts taken from each of 20 plants.

3.6 *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.

4.2 *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, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 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 tested, either by growing a further generation, or by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the previous 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 habit (characteristic 2)
- (b) Corm: adherence of primary cormels (characteristic 19)
- (c) Only varieties with corm: adherence of primary cormels: detachable from corm: Corm: arrangement of primary cormels (characteristic 20)
- (d) Corm: shape (characteristic 21)
- (e) Primary cormel: shape (characteristic 24)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

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*

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.

6.3 *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*

(*) Asterisked characteristic – see Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3

QN: Quantitative characteristic – see Chapter 6.3

PQ: Pseudo-qualitative characteristic – see Chapter 6.3

MG, MS, VG, VS: See Chapter 3.3.2

(a)-(b) See Explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8.2

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

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1.	VG	Sprout: anthocyanin coloration	Bourgeon : pigmentation anthocyannique	Keim: Anthocyan- färbung	Brote: pigmentación antociánica		
QL		absent	absente	fehlend	ausente	Egu-imp	1
		present	présente	vorhanden	presente	Serebesu	9
2.	VG	Plant: growth habit	Plante : port	Pflanze: Wuchsform	Planta: porte		
(*)							
(+)							
QN	(a)	upright	dressé	aufrecht	erguido	Eguimo	1
		semi-upright	demi-dressé	halbaufrecht	semierguido	Ishikawa-wase	3
		spreading	étalé	breitwüchsig	desplegada	Touno-imo	5
3.	VG	Plant: height	Plante : hauteur	Pflanze: Höhe	Planta: altura		
QN	(a)	short	courte	niedrig	baja	Yamato	1
		medium	moyenne	mittel	media	Ishikawa-wase	2
		tall	haute	hoch	alta	Touno-imo	3
4.	VG	Leaf blade: attitude	Limbe : port	Blattspreite: Haltung	Limbo: porte		
(*)							
(+)							
QN	(a)	horizontal	horizontal	waagerecht	horizontal	Wase-hasuba-imo	1
		oblique	oblique	schräg abstehend	oblicuo	Ishikawa-wase	2
		vertical	vertical	senkrecht	vertical	Takenoko-imo	3
5.	VG/ MS	Leaf blade: length	Limbe : longueur	Blattspreite: Länge	Limbo: longitud		
(+)							
QN	(a)	short	court	kurz	corto	Wase-hasuba-imo	3
		medium	moyen	mittel	medio	Ishikawa-wase	5
		long	long	lang	largo	Egu-imo	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6.	VG/ MS	Leaf blade: width	Limbe : largeur	Blattspreite: Breite	Limbo: anchura		
(+)							
QN	(a)	narrow	étroit	schmal	estrecho	Takenoko-imo	3
		medium	moyen	mittel	medio	Ishikawa-wase	5
		broad	large	breit	ancho	Egu-imo	7
7.	VG	Leaf blade: ratio length/width	Limbe : rapport longueur/largeur	Blattspreite: Verhältnis Länge/Breite	Limbo: relación longitud/anchura		
(*)							
(+)							
QN	(a)	moderately elongated	modérément allongé	mittel verlängert	moderadamente allargada	Dotare	3
		medium	moyen	mittel	media	Yamato	5
		moderately compressed	modérément comprimé	mittel komprimiert	moderadamente comprimida	Onna-wase	7
8.	VG/ MS	Leaf blade: depth of sinus	Limbe : profondeur du sinus	Blattspreite: Tiefe der Ausbuchtung	Limbo: profundidad del seno		
(+)							
QN	(a)	shallow	peu profond	flach	poco profundo	Egu-imo	3
		medium	moyen	mittel	medio	Ishikawa-wase	5
		deep	profond	tief	profundo	Wase-hasuba-imo	7
9.	VG	Leaf blade: shape of apex	Limbe : forme du sommet	Blattspreite: Form der Spitze	Limbo: forma del ápice		
(+)							
PQ	(a)	acute	aigu	spitz	agudo	Takenoko-imo	1
		obtuse	obtus	stumpf	obtuso	Ishikawa-wase	2
		rounded	arrondi	abgerundet	redondeado	Wase-hasuba-imo	3
10.	VG	Leaf blade: intensity of green color	Limbe : intensité de la couleur verte	Blattspreite: Intensität der Grünfärbung	Limbo: intensidad del color verde		
QN	(a)	light	claire	hell	claro	Ishikawa-wase	3
		medium	moyenne	mittel	medio	Dotare	5
		dark	foncée	dunkel	oscuro	Serebesu	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
11.	VG/ MS (+)	Petiole: length	Pétiole : longueur	Blattstiel: Länge	Pecíolo: longitud		
QN	(a)	short	court	kurz	corto	Wase-hasuba-imo	3
		medium	moyen	mittel	medio	Ishikawa-wase	5
		long	long	lang	largo	Daikichi	7
12.	VG/ MS (+)	Petiole: thickness at top of sheath	Pétiole : épaisseur au sommet de la gaine	Blattstiel: Dicke auf der Spitze der Scheide	Pecíolo: grosor de la parte superior de la vaina		
QN	(a)	thin	mince	dünn	delgado		3
		medium	moyen	mittel	medio	Ishikawa-wase	5
		thick	épais	dick	grueso	Touno-imo	7
13.	VG (+)	Petiole: anthocyanin coloration of <u>upper</u> part	Pétiole : pigmentation anthocyanique de la partie <u>supérieure</u>	Blattstiel: Anthocyan- färbung des <u>oberen</u> Teils	Pecíolo: pigmentación antociánica de la parte <u>superior</u>		
QN	(a)	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Hasu-imo	1
		weak	faible	gering	débil	Egu-imo	3
		medium	moyenne	mittel	media	Touno-im	5
		strong	forte	stark	fuerte	Serebesu	7
14.	VG (+)	Petiole: anthocyanin coloration of <u>lower</u> part	Pétiole : pigmentation anthocyanique de la partie <u>inférieure</u>	Blattstiel: Anthocyan- färbung des <u>unteren</u> Teils	Pecíolo: pigmentación antociánica de la parte <u>inferior</u>		
QN	(a)	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Egu-imo	1
		weak	faible	gering	débil	Ishikawa-wase	3
		medium	moyenne	mittel	media	Yamato	5
		strong	forte	stark	fuerte		7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
15.	VG/ MS (+)	Sheath: length	Gaine : longueur	Scheide: Länge	Vaina: longitud		
QN	(a)	short	courte	kurz	corta	Onna-wase	3
		medium	moyenne	mittel	media	Egu-imo	5
		long	longue	lang	larga	Takenoko-imo	7
16.	VG	Sheath: anthocyanin coloration	Gaine : pigmentation anthocyanique	Scheide: Anthocyan- färbung	Vaina : pigmentación antociánica		
QL	(a)	absent	absente	fehlend	ausente	Touno-imo	1
		present	présente	vorhanden	presente	Ishikawa-wase	9
17.	VG/ MS	Corm: number of leaves	Corme : nombre de feuilles	Knolle: Anzahl Blätter	Cormo: número de hojas		
QN	(a)	few	peu nombreuses	gering	pocas	Dotare	3
		medium	moyennement nombreuses	mittel	medio	Ishikawa-wase	5
		many	nombreuses	groß	muchas		7
18.	VG	Corm: size	Corme : taille	Knolle: Größe	Cormo: tamaño		
QN	(b)	small	petit	klein	pequeño	Ishikawa-wase	3
		medium	moyen	mittel	medio	Egu-imo	5
		large	grand	groß	grande	Serebesu	7
19. (*) (+)		Corm: adherence of primary cormels	Corme : adhérence des cormels primaires	Knolle: Anhaften der primären Brutknollen	Cormo: adherencia de los cormelos primarios		
QL	(b)	detachable from corm	détachables du corme	von der Knolle abtrennbar	desprendibles del cormo	Ishikawa-wase	1
		non-detachable from corm	non détachables du corme	von der Knolle nicht abtrennbar	no desprendibles del cormo	Yatugashira	2

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
20. (*) (+)		<u>Only varieties with corm: adherence of primary cormels: detachable from corm: Corm: arrangement of primary cormels</u>	<u>Seulement pour les variétés avec corme : adhérence des cormels primaires : détachables du corme : Corme : disposition des cormels primaires</u>	<u>Nur Sorten mit Knolle: Anhaften der primären Brutknollen: von der Knolle abtrennbar: Knolle: Anordnung des Brutknollen</u>	<u>Sólo variedades con cormo: adherencia de cormelos primarios: desprendibles del cormo: Cormo: disposición de los cormelos primarios</u>		
PQ	(b)	sparsely budding	faiblement bouturé	locker keimend	brotos escasos	Ni-imo	1
		densely budding	fortement bouturé	dicht keimend	brotos apiñados	Dotare	2
		clustered	groupé	in Büscheln	arracimados	Ishikawa-wase	3
21. (*) (+)	VG	Corm: shape	Corme : forme	Knolle: Form	Cormo: forma		
PQ	(b)	fusiform	fusiforme	spindelförmig	fusiforme	Takenoko-imo	1
		globose	globuleux	kugelförmig	globoso	Serebesu	2
		cylindrical	cylindrique	zylindrisch	cilíndrico	Okinawa-aokuki	3
		oblate	oblong	breitrund	achatado		4
22.	VG/ MS	Corm: number of primary cormels	Corme : nombre de cormels primaires	Knolle: Anzahl primäre Brutknollen	Cormo: número de cormelos primarios		
QN	(b)	few	rares	gering	pocos	Fukugasira	3
		medium	peu nombreux	mittel	medio	Ishikawa-wase	5
		many	nombreux	groß	muchos	Dotare	7
23.	VG	Primary cormel: size	Cormel primaire : taille	Primäre Brutknolle: Größe	Cormelo primario: tamaño		
QN	(b)	small	petit	klein	pequeño	Touno-imo	3
		medium	moyen	mittel	medio	Ishikawa-wase	5
		large	grand	groß	grande	Serebesu	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
24.	VG	Primary cormel: shape	Cormel primaire : forme	Primäre Brutknolle: Form	Cormelo primario: forma		
PQ	(b)	globose	globuleux	kugelförmig	globoso	Ishikawa-wase	1
		ovate	oval	eiförmig	oval	Okinawa-aokuk	2
		shrimp shape	en forme de crevette	garnelenförmig	de base oblicua	Touno-imo	3
25.	VG	Primary cormel: number of secondary cormels	Cormel primaire : nombre de cormels secondaires	Primäre Brutknolle: Anzahl sekundäre Brutknollen	Cormelo primario: número de cormelos secundarios		
QN	(b)	few	rare	gering	pocos	Yamato	3
		medium	peu nombreux	mittel	medio	Ishikawa-wase	5
		many	nombreux	groß	muchos	Egu-imo	7
26.	VG	Primary cormel: density of fibers on surface	Cormel primaire : densité des fibres à la surface	Primäre Brutknolle: Dichte der Fasern an der Oberfläche	Cormelo primario: densidad de fibras en la superficie		
QN	(b)	sparse	faible	locker	débil	Takenoko-imo	1
		medium	moyenne	mittel	media	Egu-imo	2
		dense	forte	dicht	densa	Dotare	3
27.	VG	Secondary cormel: size	Cormel secondaire : taille	Sekundäre Brutknolle: Größe	Cormelo secundario: tamaño		
QN	(b)	small	petit	klein	pequeño	Daikichi	3
		medium	moyen	mittel	medio	Ishikawa-wase	5
		large	grand	groß	grande	Onna-wase	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
28. MG (+)	Time of harvest	Époque de la récolte	Zeitpunkt der Ernte	Época de la cosecha		
QN	early	précoce	früh	temprana	Ishikawa-wase	3
	medium	moyenne	mittel	media	Yamato	5
	late	tardive	spät	tardía	Takenoko-imo	7

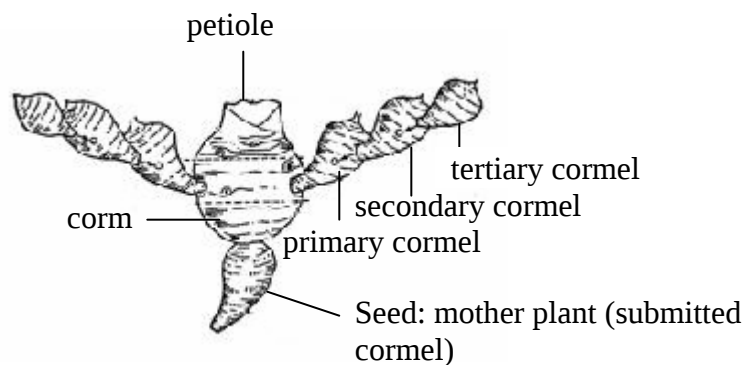
8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

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

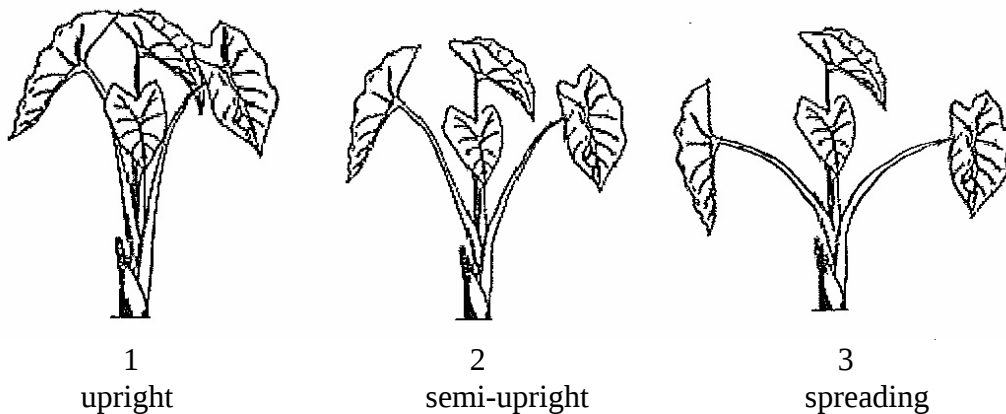
- (a) Plant, stem, leaf blade, petiole: all observations should be made when the plant is fully developed in late summer.
- (b) Corm: should be observed when the corm is fully developed in late autumn.

Corm, primary cormel, second cormel

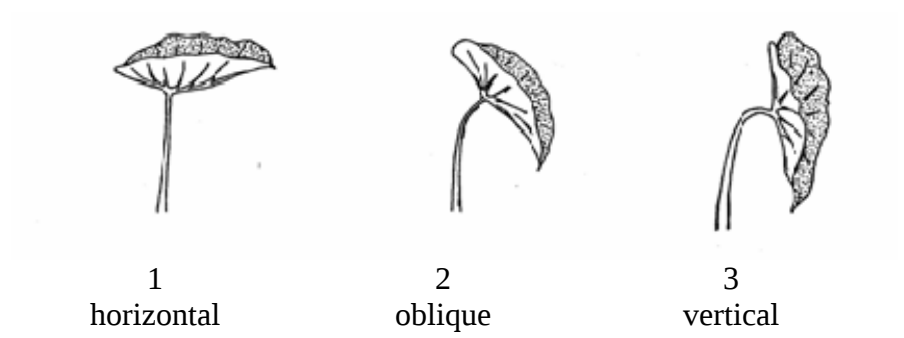


8.2 *Explanations for individual characteristics*

Ad. 2: Plant: growth habit



Ad. 4: Leaf blade: attitude

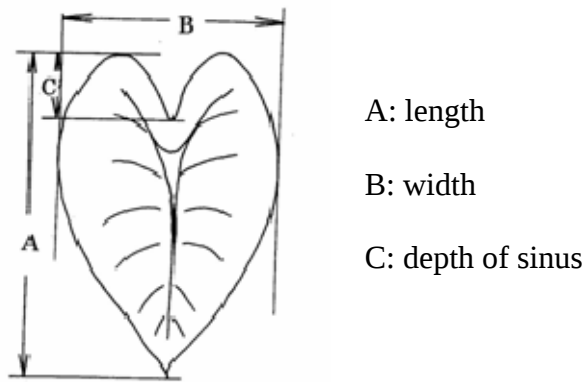


Ad. 5: Leaf blade: length

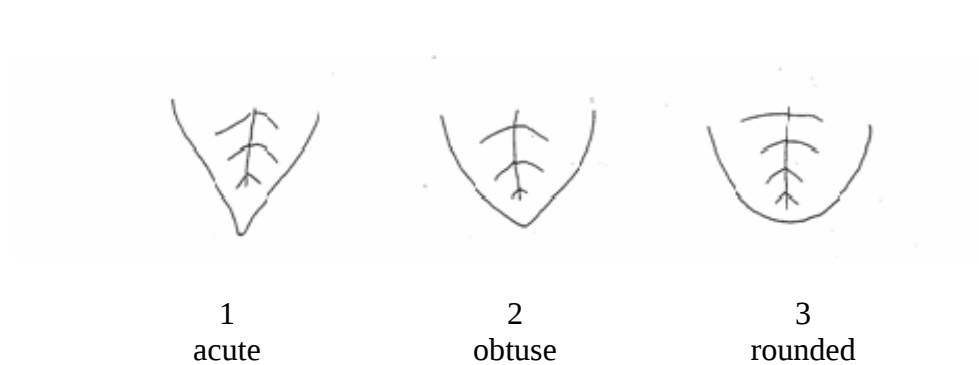
Ad. 6: Leaf blade: width

Ad. 7: Leaf blade: ratio length/width

Ad. 8: Leaf blade: depth of sinus



Ad. 9: Leaf blade: shape of apex



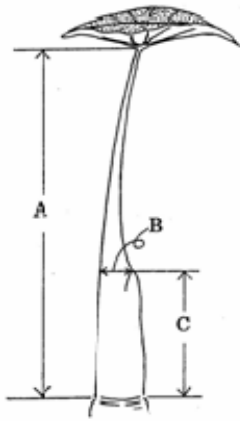
Ad. 11: Petiole: length

Ad. 12: Petiole: thickness at top of sheath

Ad. 13: Petiole: anthocyanin coloration of upper part

Ad. 14: Petiole: anthocyanin coloration of lower part

Ad. 15: Sheath: length

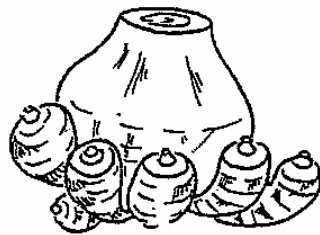


A: petiole length

B: thickness of petiole at top of sheath

C: length of sheath

Ad. 19: Corm: adherence of primary cormels



1

detachable from corm



2

non-detachable from corm

Ad. 20: Only varieties with corm: adherence of primary cormels: detachable from corm: Corm: arrangement of primary cormels



1

sparsely budding



2

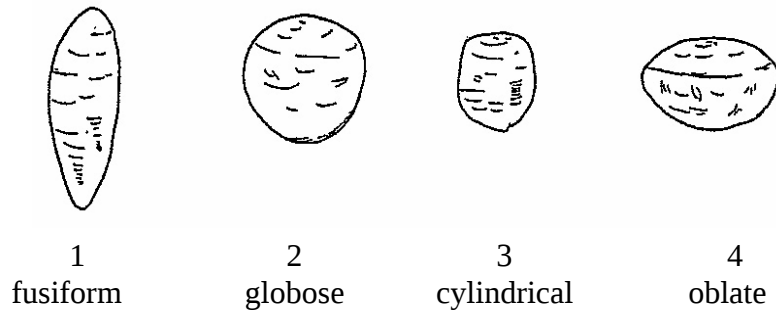
densely budding



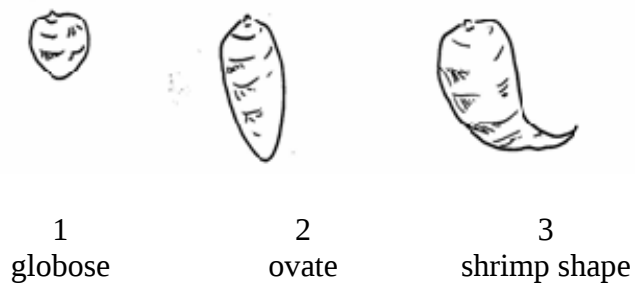
3

clustered

Ad. 21: Corm: shape



Ad. 24: Primary cormel: shape



Ad. 26: Primary cormel: density of fibers on surface



Fibers adhere on surface.

Ad. 28: Time of harvest

The time of harvest is observed as the time when the corm and cormels are fully developed.

9. Literature

Hotta, M., 1991: Colocasia L., The Grand Dictionary of Horticulture, Vol. 2. 360, Shougakkan, JP.

Larkom, J., 1991: Taro, Oriental Vegetables 122-123, Jon Murry, GB.

Ministry of Agriculture, Forestry & Fisheries, 1981: National Test Guideline for Satoimo.

Phillips, R., Rix, M.: 1993, Taro, Vegetables 237, Pan Books, GB.

Hidaka, Y., 1988: Nigauri, Nogyo-Gijutu-Taikei-Vegatable Vol.10, 1-46, Nosangyoson-Bunka-Kyokai, JP.

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		
1.1.1 Botanical name	Colocasia esculenta (L.) Schott	[]
1.1.2 Common name	Taro	
1.2.1 Botanical name	Colocasia gigantea (Blume) Hook. f.	[]
1.2.2 Common name		
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:
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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)

(b) partially known cross []
(please state known parent variety(ies))

(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)

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) separation []

(b) *in vitro* propagation []

(c) other (state method) []

4.2.2 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:
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 Plant: growth habit (2)		
upright	Eguimo	1[]
semi-upright	Ishikawa-wase	3[]
spreading	Touno-imo	5[]
5.2 Corm: adherence of primary cormels (19)		
detachable from corm	Ishikawa-wase	1[]
non-detachable from corm	Yatugashira	2[]
5.3 <u>Only varieties with corm: adherence of primary cormels: detachable from corm:</u> Corm: arrangement of primary cormels (20)		
sparsely budding	Ni-imo	1[]
densely budding	Dotare	2[]
clustered	Ishikawa-wase	3[]
5.4 Corm: shape (21)		
fusiform	Takenoko-imo	1[]
globose	Serebesu	2[]
cylindrical	Okinawa-aokuki	3[]
oblate		4[]
5.5 Primary cormel: shape (24)		
globose	Ishikawa-wase	1[]
ovate	Okinawa-aokuk	2[]
shrimp shape	Touno-imo	3[]

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 similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Primary cormel: shape</i>	<i>ovate</i>	<i>shrimp shape</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		
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.		

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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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]