E

TG/ADZUK(proj.4)
ORIGINAL: English
DATE: 2014-12-15

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

Adzuki Bean

UPOV Code: VIGNA_ANG

Vigna angularis (Willd.) Ohwi & H. Ohashi [*]

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by (an) expert(s) from Japan

to be considered by the

Technical Committee at its fifty-first session
to be held in Geneva from March 23 to 25 2015

Alternative Names:[*]

Botanical name	*English*	*French*	*German*	*Spanish*
Vigna angularis (Willd.) Ohwi & H. Ohashi, *Phaseolus angularis* (Willd.) W. Wight	Adzuki Bean, Azuki Red Bean, Chinese red bean	Haricot Adzuki	Adzukibohne	Judía adzuki

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.]

TABLE OF CONTENTS PAGE

1. SUBJECT OF THESE TEST GUIDELINES 3
2. MATERIAL REQUIRED 3
3. METHOD OF EXAMINATION 3
3.1 NUMBER OF GROWING CYCLES 3
3.2 TESTING PLACE 3
3.3 CONDITIONS FOR CONDUCTING THE EXAMINATION 3
3.4 TEST DESIGN 3
3.5 ADDITIONAL TESTS 4
4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY 4
4.1 DISTINCTNESS 4
4.2 UNIFORMITY 5
4.3 STABILITY 5
5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL 5
6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS 6
6.1 CATEGORIES OF CHARACTERISTICS 6
6.2 STATES OF EXPRESSION AND CORRESPONDING NOTES 6
6.3 TYPES OF EXPRESSION 6
6.4 EXAMPLE VARIETIES 6
6.5 LEGEND 7
7. TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES 8
8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS 12
8.1 EXPLANATIONS COVERING SEVERAL CHARACTERISTICS 12
8.2 EXPLANATIONS FOR INDIVIDUAL CHARACTERISTICS 12
9. LITERATURE 15
10. TECHNICAL QUESTIONNAIRE 16

1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Vigna angularis* (Willd.) Ohwi & H. Ohashi.

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:

500g 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

3.1.1 The minimum duration of tests should normally be two independent growing cycles.

3.1.2 The two independent growing cycles should be in the form of two separate plantings.

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 second column of the Table of Characteristics. The stages of development denoted by each number are described in Chapter 8.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 100 plants, which should be divided between 2 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 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 / Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 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 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, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 100 plants, 3 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) Plant: growth type (characteristic 1)
(b) Pod: color (characteristic 9)
(c) Time of maturity (characteristic 10)
(d) Seed: ratio length/width (characteristic 14)
(e) Seed: main color (characteristic 15)
(f) Seed: 100 seed weight (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:

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

(*)	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 4.1.5

(a)-(c) See Explanations on the Table of Characteristics in Chapter 8.

(+) See Explanations on the Table of Characteristics in Chapter 8.

65-99 See explanations on growth stages in Chapter 8.

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

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*) QL VG 65 (+) (a)					
Plant: growth type	**Plante : type de croissance**	**Pflanze: Wuchstyp**	**Planta: tipo de crecimiento**		
dwarf	naine	zwergwüchsig	enano	Erimo-shozu	1
climbing	grimpante	kletternd	trepador	Tsuru-shozu	2
2. (*) QN VG 65 (a)					
Stem: anthocyanin coloration	**Tige : pigmentation anthocyanique**	**Trieb: Anthocyanfärbung**	**Tallo: pigmentación antociánica**		
absent or weak	absente ou faible	fehlend oder schwach	ausente o débil	Erimo-shozu	1
medium	moyenne	mittel	media	Buchishoryu-kei No.1, Kuro-shozu	2
strong	forte	stark	fuerte		3
3. QN MS 65 (+) (a) (b)					
Terminal leaflet: ratio length/width	**Foliole terminale : rapport longueur/largeur**	**Endfieder: Verhältnis Länge/Breite**	**Folíolo terminal: relación longitud/anchura**		
low	faible	klein	baja		3
medium	moyen	mittel	media	Erimo-shozu	5
high	élevé	groß	alta		7
4. (*) QN VG 65 (+) (a) (b)					
Terminal leaflet: lobing	**Foliole terminale : découpure**	**Endfieder: Lappung**	**Folíolo terminal: lobulado**		
absent or very shallow	absente ou très peu profonde	fehlend oder sehr flach	ausente o muy poco profundo	Erimo-shozu	1
shallow	peu profonde	flach	poco profundo		3
medium	moyenne	mittel	medio	Buchishoryu-kei No.1	5
deep	profonde	tief	profundo	Kensaki-shozu	7
5. (*) QN MG (+) (a)					
Time of flowering	**Époque de floraison**	**Zeitpunkt der Blüte**	**Época de floración**		
early	précoce	früh	temprana	Huang Red Bean, Sahoro-shozu	3
medium	moyenne	mittel	media	Erimo-shozu, Ji Hong No.4	5
late	tardive	spät	tardía	Maruba-No.1, Mi Red Bean	7
6. (*) QN MS 85 (+) (a)					
Stem: length	**Tige : longueur**	**Trieb: Länge**	**Tallo: longitud**		
short	courte	kurz	corta	Kitaroman, Sahoro-shozu	3
medium	moyenne	mittel	media	Erimo-shozu, Miama-dainagon	5
long	longue	lang	larga	Kitaasuka	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7. QN MS 88 (a) (c)					
Pod: length	**Gousse : longueur**	**Hülse: Länge**	**Vaina: longitud**		
short	courte	kurz	corta	Akane-dainagon, Kitahotaru	3
medium	moyenne	mittel	media	Erimo-shozu	5
long	longue	lang	larga	Beni-dainagon	7
8. QN MS 88 (a) (c)					
Pod: width	**Gousse : largeur**	**Hülse: Breite**	**Vaina: anchura**		
narrow	étroite	schmal	estrecha	Buchishoryu-kei No.1	3
medium	moyenne	mittel	media	Erimo-shozu	5
broad	large	breit	ancha	Akane-dainagon	7
9. (*) PQ VG 88 (a) (c)					
Pod: color	**Gousse : couleur**	**Hülse: Farbe**	**Vaina: color**		
yellowish white	blanc jaunâtre	gelblichweiß	blanco amarillento	Akane-dainagon, Toyomi-dainagon	1
light brown	brun clair	hellbraun	marrón claro	Hikari-shozu	2
medium brown	brun moyen	mittelbraun	marrón medio	Erimo-shozu	3
dark brown	brun foncé	dunkelbraun	marrón oscuro	Buchishoryu-kei No.1, Maruba-No.1	4
10. (*) QN MG 88 (+) (a)					
Time of maturity	**Époque de maturité**	**Zeitpunkt der Reife**	**Época de madurez**		
early	précoce	früh	temprana	Sahoro-shozu	3
medium	moyenne	mittel	media	Erimo-shozu	5
late	tardive	spät	tardía	Homare-dainagon	7
11. QN MS 89 (+) (a)					
Plant: number of branches	**Plante : nombre de ramifications**	**Pflanze: Anzahl Verzweigungen**	**Planta: número de ramas**		
few	petit	wenige	bajo	Beni-dainagon	3
medium	moyen	mittel	medio	Erimo-shozu	5
many	grand	viele	alto	Akane-dainagon, Toyomi-dainagon	7
12. QN MS 89 (+) (a)					
Stem: number of nodes	**Tige : nombre de nœuds**	**Trieb: Anzahl Knoten**	**Tallo: número de nudos**		
few	petit	wenige	bajo	Toyomi-dainagon	3
medium	moyen	mittel	medio	Erimo-shozu	5
many	grand	viele	alto	Akane-dainagon	7

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13. QN MS 99 (a) (c)					
Pod: number of seeds	**Gousse : nombre de graines**	**Hülse: Anzahl Samen**	**Vaina: número de semillas**		
very few	très petit	sehr wenige	muy bajo		1
few	petit	wenige	bajo	Akane-dainagon	2
medium	moyen	mittel	medio	Erimo-shozu	3
many	grand	viele	alto	Beninanbu, Buchishoryu-kei No.1	4
very many	très grand	sehr viele	muy alto	Odate No. 2	5
14. (*) QN MS 99 (+) (a)					
Seed: ratio length/width	**Graine : rapport longueur/largeur**	**Samen: Verhältnis Länge/Breite**	**Semilla: relación longitud/anchura**		
low	faible	klein	baja	Toyomi-dainagon	1
medium	moyen	mittel	media	Erimo-shozu	2
high	élevé	groß	alta	Yume-dainagon	3
15. (*) PQ VG 99 (+) (a)					
Seed: main color	**Graine : couleur principale**	**Samen: Hauptfarbe**	**Semilla: color principal**		
yellowish white	blanc jaunâtre	gelblichweiß	blanco amarillento	Kitahotaru	1
green	vert	grün	verde	Midori	2
light red	rouge clair	hellrot	rojo claro	Erimo-shozu, Kita-no-otome	3
medium red	rouge moyen	mittelrot	rojo medio	Buchishoryu-kei No.1, Homare-dainagon, Sahoro-shozu	4
dark red	rouge foncé	dunkelrot	rojo oscuro	Akane-dainagon	5
yellowish brown	brun jaunâtre	gelblichbraun	marrón amarillento	Kaihaku-kei No.2	6
medium brown	brun moyen	mittelbraun	marrón medio	Cha-shozu	7
black	noir	schwarz	negro	Kuro-shozu	8
16. PQ VG 99 (a)					
Seed: secondary color	**Graine : couleur secondaire**	**Samen: Sekundärfarbe**	**Semilla: color secundario**		
absent	absente	fehlend	ausente	Erimo-shozu	1
red	rouge	rot	rojo	Aneko-kei No.1	2
black	noir	schwarz	negro	Buchishoryu-kei No.1	3
17. PQ VG 99 (+) (a)					
Seed: pattern of secondary color	**Graine : distribution de la couleur secondaire**	**Samen: Verteilung der Sekundärfarbe**	**Semilla: distribución del color secundario**		
none	aucune	keine	ausente	Erimo-shozu	1
blotched	tachetée	gefleckt	manchado	Aneko-kei No.1	2
mottled	marbrée	gepunktet	jaspeado	Buchishoryu-kei No.1	3

English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
18. (*) QN MG 99 (+) (a)					
Seed: 100 seed weight	**Graine : poids de 100 graines**	**Samen: Hundertkorngewicht**	**Semilla: peso de 100 semillas**		
very low	très faible	sehr niedrig	muy pequeño		1
very low to low	très faible à faible	sehr niedrig bis niedrig	muy pequeño a pequeño	Buchishoryu-kei No.1	2
low	faible	niedrig	pequeño	Hayate-shozu	3
low to medium	faible à moyen	niedrig bis mittel	pequeño a medio	Kitahotaru	4
medium	moyen	mittel	medio	Erimo-shozu	5
medium to high	moyen à élevé	mittel bis hoch	medio a grande	Kitaasuka	6
high	élevé	hoch	grande	Akane-dainagon	7
high to very high	élevé à très élevé	hoch bis sehr hoch	grande a muy grande	Homare-dainagon	8
very high	très élevé	sehr hoch	muy grande	Hokuto-dainagon	9

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) Characteristics containing the 2-digit code (decimal code) should be examined as indicated below:

6: Flowering
- 65: Full flowering; about 50% of flowers open

8: Ripening or maturity of fruit and seed
- 85: Advanced ripening; about 50% of pods are ripe; beans final color, dry and hard
- 88: 80% of pods are ripe, beans final color, dry and hard
- 89: Full maturity; approximately all pods are ripe; beans final color, dry and hard (= Harvest maturity)

9: Senescence
- 99: Harvested product (seeds)

(b) Observations on terminal leaflets should be made on terminal leaflets from the middle part of the plant.

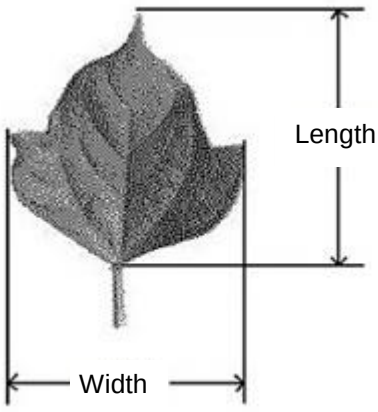
(c) Observation on pods should be made on pods from the middle part of the plant.

8.2 Explanations for individual characteristics

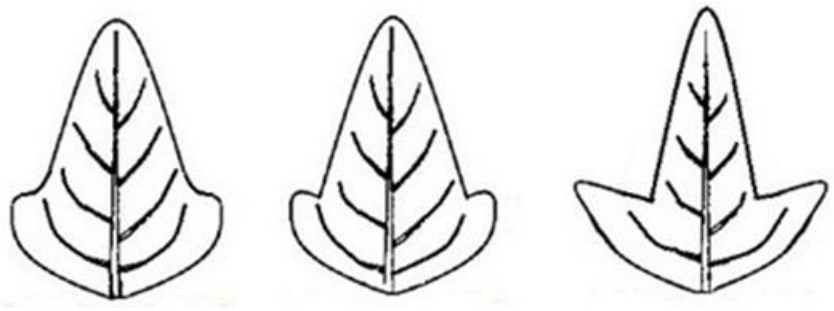
Ad. 1: Plant: growth type

Dwarf type shows a bushy and erect growth habit. Climbing type has rapidly elongating internodes that shows a climbing growth habit.

Ad. 3: Terminal leaflet: ratio length/width



Ad. 4: Terminal leaflet: lobbing

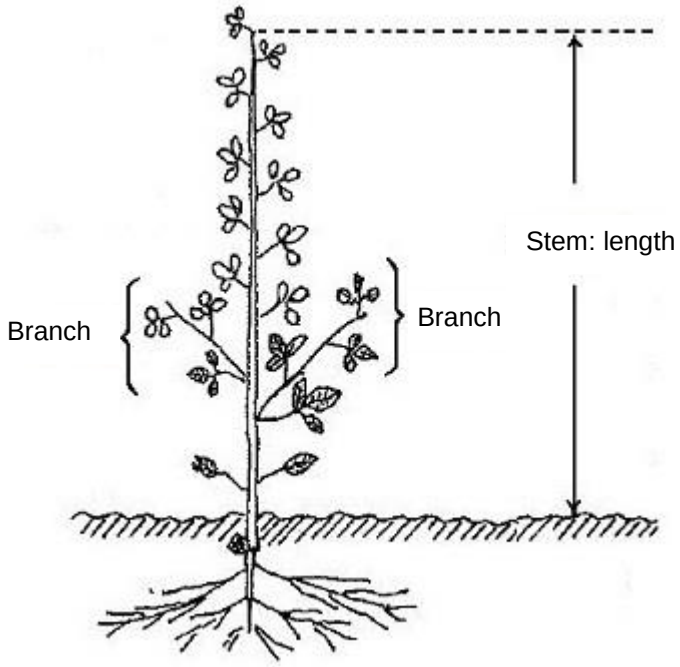


3	5	7
shallow	medium	deep

Ad. 5: Time of flowering

The time of flowering is when 50% of the plants have at least one flower open.

Ad. 6: Stem: length



Ad. 10: Time of maturity

The time of maturity is when 80% of pods on the plants are ripe.

Ad. 11: Plant: number of branches

The number of branches should be observed by counting the number of primary branches with more than one node.

Ad. 12: Stem: number of nodes

Observations should be made on the main stem.

Ad. 14: Seed: ratio length/width

1
low

3
high

Ad. 15: Seed: main color

The main color is the color with the largest surface area. In cases where the areas of the main and secondary color are too similar to reliably decide which color has the largest area, the darkest color is considered to be the main color.

Ad. 17: Seed: pattern of secondary color

2
blotched

3
mottled

Ad. 18: Seed: 100 seed weight

Seeds should be sampled from healthy plants at full maturity.
Seed weight should be measured at 15% moisture content.
Moisture content could be adjusted using the following formula:
A = seed moisture content
B = seed weight
B x (100 - A) / (100 - 15)

9. Literature

Narikawa, T., Takeuchi, T., etc., 1985: Adzuki Bean. Nosan Gyoson Bunka Kyokai (Nobunkyo), Tokyo, JP

Nomura, N., Nakamura, S., Tsuchiya, T., etc., 1991: Varieties of Beans in Hokkaido (enlarged edition). Japan Legume
Crops Fund Association. Tokyo, JP, pp. 159-205.

Ministry of Agriculture, Forestry & Fisheries, 1981: National Test Guideline for Adzuki Bean. 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 Botanical name	*Vigna angularis* (Willd.) Ohwi & H. Ohashi
1.2 Common name	Adzuki Bean

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

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)

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

(a) self-pollination [ ]
(b) 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 (1)	**Plant: growth type**		
	dwarf	Erimo-shozu	1[ ]
	climbing	Tsuru-shozu	2[ ]
5.2 (9)	**Pod: color**		
	yellowish white	Akane-dainagon, Toyomi-dainagon	1[ ]
	light brown	Hikari-shozu	2[ ]
	medium brown	Erimo-shozu	3[ ]
	dark brown	Buchishoryu-kei No.1, Maruba-No.1	4[ ]
5.3 (10)	**Time of maturity**		
	very early		1[ ]
	very early to early		2[ ]
	early	Sahoro-shozu	3[ ]
	early to medium		4[ ]
	medium	Erimo-shozu	5[ ]
	medium to late		6[ ]
	late	Homare-dainagon	7[ ]
	late to very late		8[ ]
	very late		9[ ]
5.4 (14)	**Seed: ratio length/width**		
	low	Toyomi-dainagon	1[ ]
	medium	Erimo-shozu	2[ ]
	high	Yume-dainagon	3[ ]

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

	Characteristics	Example Varieties	Note
5.5 (15)	**Seed: main color**		
	yellowish white	Kitahotaru	1[ ]
	green	Midori	2[ ]
	light red	Erimo-shozu, Kita-no-otome	3[ ]
	medium red	Buchishoryu-kei No.1, Homare-dainagon, Sahoro-shozu	4[ ]
	dark red	Akane-dainagon	5[ ]
	yellowish brown	Kaihaku-kei No.2	6[ ]
	medium brown	Cha-shozu	7[ ]
	black	Kuro-shozu	8[ ]
5.6 (18)	**Seed: 100 seed weight**		
	very low		1[ ]
	very low to low	Buchishoryu-kei No.1	2[ ]
	low	Hayate-shozu	3[ ]
	low to medium	Kitahotaru	4[ ]
	medium	Erimo-shozu	5[ ]
	medium to high	Kitaasuka	6[ ]
	high	Akane-dainagon	7[ ]
	high to very high	Homare-dainagon	8[ ]
	very high	Hokuto-dainagon	9[ ]

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	*Time of maturity*	*medium*	*early*

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:

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]