

TG/FAGOP(proj.1)
ORIGINAL: English

**DATE:** 2007-04-26

# INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS GENEVA



#### **BUCKWHEAT**

UPOV Code: FAGOP ESC

(Fagopyrum esculentum Moench)

#### GUIDELINES

### FOR THE CONDUCT OF TESTS

#### FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Japan

to be considered by the

Technical Working Party for Agricultural Crops
at its thirty-sixth session, to be held in Budapest, Hungary, from May 28 to June 1, 2007

Alternative Names:\*

| Botanical name              | English   | French              | German     | Spanish  |
|-----------------------------|-----------|---------------------|------------|----------|
| Fagopyrum esculentum Moench | Buckwheat | Blé noir, Sarrasin. | Buchweizen | Alforfón |

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.

<sup>\*</sup> 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 *Fagopyrum esculentum* Moench.

### 2. <u>Material Required</u>

- 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:

#### 2,000 seeds

- 2.4 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."
- 2.5 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.
- 2.6 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 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 Type of observation

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

Each test should be designed to result in a total of at least 60 plants, which should be divided between 2 replicates.

#### 3.5 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, all observations on single plants should be made on 10 plants or parts taken from each of 10 plants and any other observations made on all plants in the test. 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.

#### 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 The assessment of uniformity should be according to the recommendations for cross-pollinated varieties in the General Introduction."

#### 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 seed 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: height (characteristic 2)
  - (b) Inflorescence: flower color (characteristic 12)
  - (c) Seed: color (characteristic 19)
- 5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

#### 6. <u>Introduction to the Table of Characteristics</u>

#### 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)-(d) See Explanations on the Table of Characteristics in Chapter 8.1
- (+) See Explanations on the Table of Characteristics in Chapter 8.2

# 7. <u>Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres</u>

|                  |     | English                           | français | deutsch | español | Example Varieties/<br>Exemples/<br>Beispielssorten/<br>Variedades ejemplo | Note/<br>Nota |
|------------------|-----|-----------------------------------|----------|---------|---------|---|---------------|
| 1.               | VS  | Plant: attitude                   |          |         |         |   |               |
| (+)              |     |                                   |          |         |         |   |               |
| PQ               | (a) | upright short                     |          |         |         | Shinano-natsusoba   | 1             |
|                  |     | upright long                      |          |         |         | Shinano No.1  | 2             |
|                  |     | spreading long                    |          |         |         | Miyazaki-outsubu  | 3             |
|                  |     | spreading short                   |          |         |         |   | 4             |
| 2.<br>(*)<br>(+) | MS  | Plant: height                     |          |         |         |   |               |
| QN               | (c) | short                             |          |         |         | Shinano-natsusoba   | 3             |
|                  |     | medium                            |          |         |         | Shinano No.1  | 5             |
|                  |     | tall                              |          |         |         | Miyazaki-outsubu  | 7             |
| 3.<br>(*)<br>(+) | MS  | Plant: number of primary branches |          |         |         |   |               |
| QN               | (c) | few                               |          |         |         | Kitawase-soba   | 3             |
|                  |     | medium                            |          |         |         | Shinano No.1  | 5             |
|                  |     | many                              |          |         |         | Takane ruby   | 7             |
| 4.               | MS  | Plant: length of                  |          |         |         |   |               |
| (+)              |     | main stem                         |          |         |         |   |               |
| QN               | (c) | short                             |          |         |         | Shinano-natsusoba   | 3             |
|                  |     | medium                            |          |         |         | Shinano No.1  | 5             |
|                  |     | long                              |          |         |         |   | 7             |
| 5.<br>(*)<br>(+) | MS  | Stem: number of nodes on main ste | m        |         |         |   |               |
| QN               | (c) | few                               |          |         |         | Shinano-natsusoba   | 3             |
|                  |     | medium                            |          |         |         | Shinano No.1  | 5             |
|                  |     | many                              |          |         |         | Takane ruby   | 7             |

|     |     | English                                | français | deutsch | español | Example Varieties/<br>Exemples/<br>Beispielssorten/<br>Variedades ejemplo | Note/<br>Nota |
|-----|-----|--|----------|---------|---------|---|---------------|
| 6.  | MS  | Stem: diameter                         |          |         |         |   |               |
| (+) |     |  |          |         |         |   |               |
| QN  | (c) | small                                  |          |         |         | Shinano-natsusoba   | 3             |
|     |     | medium                                 |          |         |         | Shinano No.1  | 5             |
|     |     | large                                  |          |         |         |   | 7             |
| 7.  | VS  | Stem: anthocyanin coloration           |          |         |         |   |               |
| QN  | (c) | absent or very weak                    |          |         |         |   | 1             |
|     |     | weak                                   |          |         |         |   | 3             |
|     |     | medium                                 |          |         |         | Shinano No.1  | 5             |
|     |     | strong                                 |          |         |         |   | 7             |
| 8.  | VS  | Leaf blade: length                     |          |         |         |   |               |
| QN  | (a) | short                                  |          |         |         |   | 3             |
|     |     | medium                                 |          |         |         | Shinano No.1  | 5             |
|     |     | long                                   |          |         |         |   | 7             |
| 9.  | MS  | Leaf blade: width                      |          |         |         |   |               |
| QN  | (a) | narrow                                 |          |         |         |   | 3             |
|     |     | medium                                 |          |         |         | Shinano No.1  | 5             |
|     |     | broad                                  |          |         |         |   | 7             |
| 10. | VS  | Leaf blade:intensity<br>of green color |          |         |         |   |               |
| QN  | (a) | light                                  |          |         |         |   | 3             |
|     |     | medium                                 |          |         |         | Shinano No.1  | 5             |
|     |     | dark                                   |          |         |         |   | 7             |

|            |     | English  | français | deutsch | español | Example Varieties/<br>Exemples/<br>Beispielssorten/<br>Variedades ejemplo | Note/<br>Nota |
|------------|-----|--|----------|---------|---------|---|---------------|
| 11.<br>(*) | VS  | Time of flowering  |          |         |         |   |               |
| QN         | (a) | early  |          |         |         | Kitawase-soba   | 3             |
|            |     | medium   |          |         |         | Shinano No.1,<br>Shinano-natsusoba  | 5             |
|            |     | late   |          |         |         | Shinei-red  | 7             |
| 12.<br>(*) | VS  | Inflorescence:flower color   |          |         |         |   |               |
| PQ         | (b) | white  |          |         |         | Shinano No.1  | 1             |
|            |     | light pink   |          |         |         | Shinei red  | 2             |
|            |     | medium red   |          |         |         | Takane ruby   | 3             |
|            |     | dark red   |          |         |         |   | 4             |
| 13.<br>(+) | VS  | Infloresence:<br>number of flower<br>clusters on tip of<br>main stem |          |         |         |   |               |
| QN         | (b) | few  |          |         |         |   | 3             |
|            |     | medium   |          |         |         |   | 5             |
|            |     | many   |          |         |         | Shinano No.1  | 7             |
| 14.<br>(+) | MS  | Inflorescence:<br>number of flower<br>clusters                       |          |         |         |   |               |
| QN         | (c) | few  |          |         |         | Shinano-natsusoba   | 3             |
|            |     | medium   |          |         |         | Shinano No.1  | 5             |
|            |     | many   |          |         |         |   | 7             |
| 15.<br>(*) | VS  | Time of maturity   |          |         |         |   |               |
| QN         | (c) | early  |          |         |         | Shinano-natsusoba   | 3             |
|            |     | medium   |          |         |         | Shinano No.1  | 5             |
|            |     | late   |          |         |         | Shinei red  | 7             |

|            |     | English                        | français | deutsch | español | Example Varieties/<br>Exemples/<br>Beispielssorten/<br>Variedades ejemplo | Note/<br>Nota |
|------------|-----|--------------------------------|----------|---------|---------|---|---------------|
| 16.        | VS  | Seed: shape                    |          |         |         |   |               |
| (+)        |     |                                |          |         |         |   |               |
| PQ         | (d) | elliptic                       |          |         |         |   | 1             |
|            |     | ovate                          |          |         |         |   | 2             |
|            |     | triangular                     |          |         |         | Shinano No.1  | 3             |
|            |     | alate                          |          |         |         |   | 4             |
| 17.        | MS  | Seed: length                   |          |         |         |   |               |
| QN         | (d) | short                          |          |         |         |   | 3             |
|            |     | medium                         |          |         |         | Shinano No.1  | 5             |
|            |     | long                           |          |         |         |   | 7             |
| 18.        | MS  | Seed: width                    |          |         |         |   |               |
| QN         | (d) | narrow                         |          |         |         |   | 3             |
|            |     | medium                         |          |         |         | Shinano-natsusoba   | 5             |
|            |     | broad                          |          |         |         |   | 7             |
| 19.<br>(*) | VS  | Seed: color                    |          |         |         |   |               |
| PQ         | (d) | white silver                   |          |         |         |   | 1             |
|            |     | grey                           |          |         |         |   | 2             |
|            |     | medium brown                   |          |         |         | Takane ruby   | 3             |
|            |     | dark brown                     |          |         |         | Shinano No.1  | 4             |
|            |     | black                          |          |         |         | Shinano-natsusoba   | 5             |
| 20.<br>(*) | MS  | Seed: weight per<br>1000 seeds |          |         |         |   |               |
| QN         | (d) | low                            |          |         |         | Shinei red  | 3             |
|            |     | medium                         |          |         |         | Shinano No.1  | 5             |
|            |     | high                           |          |         |         | Kitawase-soba   | 7             |

|     |     | English                   | français | deutsch | español | Example Varieties/<br>Exemples/<br>Beispielssorten/<br>Variedades ejemplo | Note/<br>Nota |
|-----|-----|---------------------------|----------|---------|---------|---|---------------|
| 21. | MS  | Seed: one liter<br>weight |          |         |         |   |               |
| QN  | (d) | low                       |          |         |         |   | 3             |
|     |     | medium                    |          |         |         | Shinano No.1  | 5             |
|     |     | high                      |          |         |         |   | 7             |

## 8. <u>Explanations on the Table of Characteristics</u>

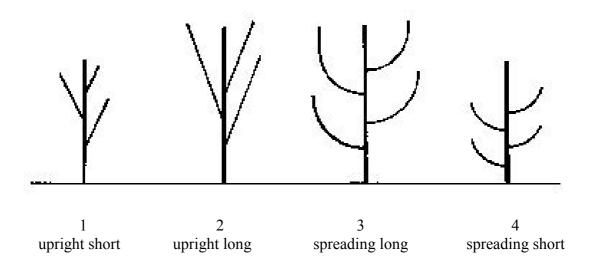
#### 8.1 Explanations covering several characteristics

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

- (a) Observations at beginning of inflorescence emergence
- (b) Observations on full flowering: (50% of the plants)
- (c) Observations on physiological maturity: (80% of mature seed)
- (d) Observations on harvest dry seeds time

#### 8.2 Explanations for individual characteristics

## Ad. 1: Plant: attitude



#### Ad. 2: Plant: height

#### Ad. 3: Number of primary branches

To be counted primary branches with more than two nodes only.

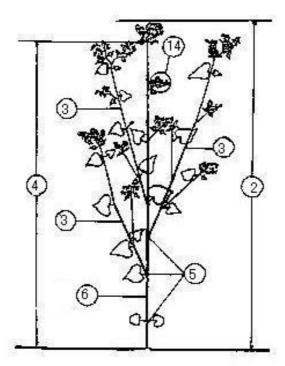
#### Ad. 6: Stem: diameter

To be measured on central part of internode between first and second node on main stem.

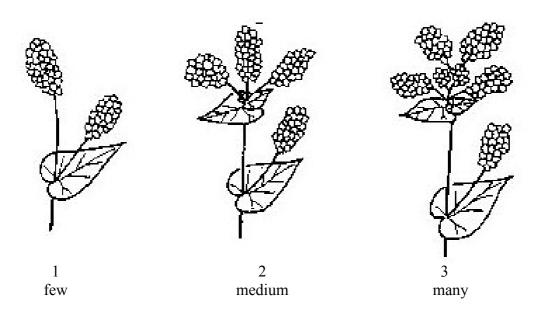
#### Ad. 11: Time of flowering

Time of flowering is the time of beginning of inflorescence emergence.

Ad. 2: Plant: height, 3: Plant: number of primary branches, 4: Plant: length of main stem, 5: Stem: number of nodes on main stem, 6: Stem: diameter, 14: Inflorescence: number of flower clusters



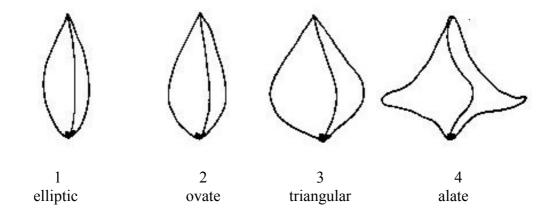
Ad. 13: Inflorescence: number of flower clusters on tip of main stem



Ad. 14: Inflorescence: number of flower clusters

To be excluded the flower clusters on tip of main stem.

# Ad. 16: Seed: shape



## 9. <u>Literature</u>

Hoshikawa, K., 1980: Buckwheat in New Agricultural Crops. Yokendo. Tokyo, Japan, pp 400-409.

Shigemori, I., Honda, Y., etc., 2003: Test Guideline for Buckwheat. Ando. Nagano, Japan, pp 5-47.

Hayashi, H., Honda, Y., Katsuta, M., *etc.*, 2004: Varieties of Buckwheat. The Japan Buckwheat Association. Tokyo, Japan

# 10. <u>Technical Questionnaire</u>

| TECHNICAL QUESTIONNAIR |                                      |       | Page {x} of {y}                         | Reference Number:  |
|------------------------|--------------------------------------|-------|---|--|
|                        |                                      |       |   | Application date: (not to be filled in by the applicant) |
|                        |                                      |       | NICAL QUESTIONN tion with an applicatio | VAIRE<br>n for plant breeders' rights                    |
| 1.                     | Subject of the Technical Qu          | uesti | onnaire                                 |  |
|                        | 1.1 Botanical name                   | Fag   | gopyrum esculentum N                    | Moench   |
|                        | 1.2 Common name                      | Bu    | ckwheat                                 |  |
|                        |                                      |       |   | <del>-</del>   |
| 2.                     | Applicant                            |       |   |  |
|                        | Name                                 |       |   |  |
|                        | Ĺ                                    |       |   |  |
|                        | Address                              |       |   |  |
|                        |                                      |       |   |  |
|                        |                                      |       |   |  |
|                        | Telephone No.                        |       |   |  |
|                        | Fax No.                              |       |   |  |
|                        | E-mail address                       |       |   |  |
|                        | Breeder (if different from a         | ppli  | cant)                                   |  |
|                        |                                      |       |   |  |
| 3.                     | Proposed denomination and            | d bre | eder's reference                        |  |
|                        | Proposed denomination (if available) |       |   |  |
|                        | Breeder's reference                  |       |   |  |

| TECHNICA               | AL QU   | JESTI         | ONNAIRE   | Page {x} of {y}              |         | Reference Number: |  |  |  |
|------------------------|---|---------------|---|------------------------------|---------|-------------------|--|--|--|
| <sup>#</sup> 4. Inform | <sup>#</sup> 4. Information on the breeding scheme and propagation of the variety |               |   |                              |         |                   |  |  |  |
| 4.1 I                  | Breedii   | ng sch        | neme  |                              |         |                   |  |  |  |
| Variet                 | y resul   | lting f       | rom:  |                              |         |                   |  |  |  |
| •                      | 4.1.1   | Cros          | sing  |                              |         |                   |  |  |  |
|                        |   | (a)           | controlled cr<br>(please state                    | ross<br>parent varieties)    |         | [ ]               |  |  |  |
|                        |   | (b)           | partially kno<br>(please state                    | wn cross<br>known parent var | riety(i | [ ]               |  |  |  |
|                        |   | (c)           | unknown cro                                       | OSS                          |         | [ ]               |  |  |  |
| 4                      | 4.1.2   | Muta<br>(plea | ation<br>ase state parent                         | t variety)                   |         | [ ]               |  |  |  |
|                        | 4.1.3   | (plea         | overy and dev<br>ase state where<br>now developed | e and when discov            | ered    | [ ]               |  |  |  |
| ,                      | 4.1.4   | Othe<br>(plea | r<br>se provide det                               | tails)                       |         | [ ]               |  |  |  |
|                        |   |               |   |                              |         |                   |  |  |  |
|                        |   |               |   |                              |         |                   |  |  |  |

<sup>&</sup>lt;sup>#</sup> Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

| TECHNICAL QUESTIONNAIRE                                | Page {x} of {y} | Reference Number: |  |  |  |  |  |
|--|-----------------|-------------------|--|--|--|--|--|
| 4.2 Method of propagating the variety                  |                 |                   |  |  |  |  |  |
| 4.2.1 Seed-propagated varieties                        |                 |                   |  |  |  |  |  |
| (a) Self-pollination                                   | on              | [ ]               |  |  |  |  |  |
| (b) Cross-pollinat<br>(i) population<br>(ii) synthetic | 1               | [ ]               |  |  |  |  |  |
| (c) Hybrid<br>{see GN 32                               | for example}    | [ ]               |  |  |  |  |  |
| (d) Other (please provid                               | e details)      | [ ]               |  |  |  |  |  |

| TECHNICAL QUESTIONNAIRE | Page $\{x\}$ of $\{y\}$ | Reference Number: |
|-------------------------|-------------------------|-------------------|

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

|             | openas).                           |                                    |       |
|-------------|------------------------------------|------------------------------------|-------|
|             | Characteristics                    | Example Varieties                  | Note  |
| 5.1<br>(2)  | Plant: height                      |                                    |       |
|             | short                              | Shinano-natsusoba                  | 3[]   |
|             | medium                             | Shinano No.1                       | 5[]   |
|             | tall                               | Miyazaki-outsubu                   | 7[]   |
| 5.2<br>(3)  | Plant: number of primary branches  |                                    |       |
|             | few                                | Kitawase-soba                      | 3[ ]  |
|             | medium                             | Shinano No.1                       | 5[ ]  |
|             | many                               | Takane ruby                        | 7[ ]  |
| 5.3<br>(5)  | Stem: number of nodes on main stem |                                    |       |
|             | few                                | Shinano-natsusoba                  | 3 [ ] |
|             | medium                             | Shinano No.1                       | 5[]   |
|             | many                               | Takane ruby                        | 7[]   |
| 5.4<br>(11) | Time of flowering                  |                                    |       |
|             | early                              | Kitawase-soba                      | 3 [ ] |
|             | medium                             | Shinano No.1,<br>Shinano-natsusoba | 5[]   |
|             | late                               | Shinei red                         | 7[]   |
| 5.5<br>(12) | Inflorescence: flower color        |                                    |       |
|             | white                              | Shinano No.1                       | 1[]   |
|             | light pink                         | Shinei red                         | 2[]   |
|             | medium red                         | Takane ruby                        | 3[]   |
|             | dark red                           |                                    | 4[]   |

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|-------------|-----------------------------|-------------------------|-------------------|------|
|             | Characteristics             |                         | Example Varieties | Note |
| 5.6<br>(15) | Time of maturity            |                         |                   |      |
|             | early                       |                         | Shinano-natsusoba | 3[]  |
|             | medium                      |                         | Shinano No.1      | 5[]  |
|             | late                        |                         | Shinei red        | 7[]  |
| 5.7<br>(19) | Seed: color                 |                         |                   |      |
|             | white silver                |                         |                   | 1[]  |
|             | gray                        |                         |                   | 2[]  |
|             | medium brown                |                         | Takane ruby       | 3[]  |
|             | dark brown                  |                         | Shinano No.1      | 4[]  |
|             | black                       |                         | Shinano-natsusoba | 5[]  |
| 5.8<br>(20) | Seed: weight per 1000 seeds |                         |                   |      |
|             | low                         |                         | Shinei red        | 3[]  |
|             | medium                      |                         | Shinano No.1      | 5[]  |
|             | high                        |                         | Kitawase-soba     | 7[]  |

| 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. |  |  |  |  |  |  |  |
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| <sup>#</sup> 7.         | 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 ye  | s, pleas | e pro  | ovide 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   | r inform | natio  | n                |           |       |        |                   |                |
|                         |   |          |        |                  |           |       |        |                   |                |
| 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  | answei   | r to ( | (b) is yes, plea | se attacl | h a c | opy of | the               | authorization. |

<sup>&</sup>lt;sup>#</sup> Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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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. vir  | us, bacteria, phytoplasi                              | ma) Yes [ ] No [ ] |         |  |  |  |  |  |
| (b) Chemical treatment (e.g.  | Chemical treatment (e.g. growth retardant, pesticide) |                    |         |  |  |  |  |  |
| (c) Tissue culture  | Tissue culture  |                    |         |  |  |  |  |  |
| (d) Other factors   | Other factors   |                    |         |  |  |  |  |  |
| 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               |         |  |  |  |  |  |

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