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WORKING PAPER ON REVISED DRAFT TEST GUIDELINES
FOR CHINESE CABBAGE
(*Brassica rapa* L. var. *pekinensis* (Lour.) Kitam)

Document prepared by experts from Japan

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I. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Brassica pekinensis* (Lour.) Rupr. and varieties of hybrids between that species and *Brassica chinensis* L. as long as the latter varieties are similar to those of *Brassica pekinensis* (Lour.) Rupr.

Proposed: These Test Guidelines apply to all varieties of *Brassica rapa L. var. pekinensis* (Lour.) Kitam. and varieties of hybrids between that species and *Brassica rapa L.* as long as the latter varieties are similar to those of *Brassica rapa L. var. pekinensis* (Lour.) Kitam.

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant seed required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must make sure that all customs formalities are complied with. As a minimum, for each year of test the following quantity of seed is recommended:

20g

The quality of the seed to be delivered should not be below the standards of seeds for certification or marketing in the country concerned, especially in regard to germination capacity and moisture content.

2. The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of Tests

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

2. The tests should normally be conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.

3. The tests should be carried out under conditions ensuring normal growth. The size of the plots should be such that plants or parts of plants may be removed for measuring and counting without prejudice to the observations which must be made up to the end of the growing period. As a minimum, each test should include a total of **60** plants for which should be divided between two or more replicates. Separate plots for observation and measuring can only be used if they have been subject to similar environmental conditions.

4. Additional tests for special purposes may be established.

IV. Methods and Observations

1. All observations determined by measuring or counting should be made on 20 plants or parts of 20 plants.
2. Unless otherwise indicated, all observations on the plant and the leaf should be made before harvest maturity.
3. For the assessment of uniformity of hybrids a population standard of 1% with an acceptance probability of at least 95% should be applied. In case of a sample size of 60 plants the maximum number of off-types allowed would be 2. For open pollinated varieties the variability within the variety should not exceed the variability of comparable varieties already know. Interpretation of results should be made according to the rules for cross-pollinated varieties as stated in TG/1/2 “Revised General Introduction to the guidelines for the conduct of tests for distinctness, homogeneity and stability of new varieties of plants”.

V. Grouping of Varieties

1. The collection to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety and which in their various states are fairly evenly distributed within the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:
 - Head: shape in longitudinal section (characteristic 19)
 - Time of head formation (characteristic 27)
 - Head: type of formation (characteristic ...)**
 - Head: degree of overlapping leaf (characteristic ...)**

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.
2. Notes (1 to 9), for the purposes of electronic data processing, are given opposite the states of expression for different characteristic.
3. Legend
 - (*) Characteristics that should be used every growing period for the examinations of all varieties and should always be included in the descriptions of the variety, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.
 - (+) See Explanations on the Table of Characteristics in Chapter VIII.

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

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. Plant: height					
short				Regina	3
medium					5
tall					7
2. Outer leaf: attitude					
erect				Osiris	3
semi-erect				Spectrum	5
horizontal					7
3. Outer leaf: size					
del small				Salad	3
medium				Muso	5
large				Bando	7
3. Outer leaf: length					
new short					3
medium					5
long					7
add Outer leaf: width					
narrow					3
medium					5
broad					7

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4. Outer leaf: del shape					
obovate				Nagaoka King	1
broad obovate				Senda	2
broad obovate to broad elliptic					3
broad elliptic					4
elliptic				Granat	5
4. Outer leaf: new shape					
circular					1
broad obovate					2
obovate					3
long obovate					4
long elliptic					5
add Outer leaf: shape of apex					
acute				Shousai	1
rounded				Muso	2
flat					3
5. Outer leaf: blistering					
weak				Kinap	3
medium				Hopkin	5
strong				Ming	7

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6. Outer leaf: size of blisters					
small				Granat	3
medium				Regina	5
large					7
7. Outer leaf: color del					
yellow				Regina	3
green				Kingdom 65	5
grey green					7
7. Outer leaf: color new					
yellow green				Regina	1
light green				Cross No2	2
green				Kingdom 65	3
grey green					4
dark green				Shousai	5
8.del Outer leaf: intensity of color					
light					3
medium					5
dark					7
add Outer leaf: anthocyanin coloration					
absent				Muso	1
present				Cross No.2	9

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9. Outer leaf: glossiness					
weak				Kinap	3
medium				Hopkin	5
strong					7
10. Outer leaf: del hairiness					
weak				Kinap	3
medium				Tardisto	5
strong				Muso	7
10. Outer leaf: new hairiness					
absent or very weak					1
weak				Kinap	3
medium				Tardisto	5
strong				Muso	7
11. Outer leaf: curvature in longitudinal section					
concave				Hopkin	1
flat				Tardisto	2
convex				Chiko	3

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12. Outer Leaf: undulation of margin					
absent or very weak					1
weak				Sixtyres	3
medium				Spectrum	5
strong				Monument	7
very strong					9
13. Outer leaf: incisions of margin (at distal part)					
absent or very weak					1
weak				Kasumi, regina	3
medium				Tokyo king	5
strong					7
very strong					9
14. Outer leaf: del serration of margin (at base)					
absent or very weak					1
weak				Kinap	3
medium				Tardisto	5
strong				Tokyo king	7
very strong					9

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14. Outer leaf: new serration of margin					
absent or very weak					1
weak				Kinap	3
medium				Tardisto	5
strong				Tokyo king	7
very strong					9
add Outer leaf: distinctness of color of veins					
absent or very weak					1
weak					3
medium				Muso	5
strong					7
15. Outer leaf: shape of midrib in cross section					
flat				Kinap	1
concave				Regina	2
add Outer leaf: length of midrib					
short				Hamamidori	3
medium				Muso	5
long				Shosai	7

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. Outer leaf: width of midrib (at base)					
narrow				Shousai	3
medium				Jade pagoda	5
broad				Harumaki No1	7
add Outer leaf: color of midrib					
white					1
light green					2
green					3
17. Head: height					
short				Senda	3
medium				Jade pagoda	5
tall				Monument, Shousai	7
18. Head: width					
narrow				Granat	3
medium				Jade pagoda	5
broad				Nagaoka early	7

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. Head: shape in del longitudinal section					
oblong					1
elliptic					2
broad elliptic					3
circular					4
ovate					5
broad ovate					6
19. Head: shape in new longitudinal section					
circular					1
elliptic					2
ovate					3
obovate					4
oblong					5
long oblong					6
20. Head: type of formation					
open				Monument	3
half-open				Spectrum	5
closed				Kinap	7

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
New Head: degree of overlapping leaf (closed head variety only)					
weak				Shousai	3
medium				Taibyou 60days	5
strong				Cross No.2	7
<hr/>					
21. Head: color of del wrapper leaf					
yellow					1
yellow green				Kasumi	2
green				Monument	3
<hr/>					
21. Head: color of new wrapper leaf					
white					1
yellow					2
yellow green				Kasumi	3
light green				Muso	4
green				Monument	5
dark green					6
<hr/>					
22. Head: intensity of color of del wrapper leaf					
light					3
medium					5
dark					7

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23 Head: blistering of wrapper leaf					
absent or very weak				Cantoner witrop	1
weak				Granat	3
medium				Regina	5
Strong					7
very strong					9
24. Head: internal del color					
white					1
light yellow				Regina	2
medium yellow				Senda	3
dark yellow				Monument	4
24. Head: internal new color					
white					1
light yellow					2
medium yellow					3
dark yellow					4
orange				Orange Queen	5

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25	Head: firmness (at harvest maturity)				
very weak					1
weak				Granat	3
medium				Sixtyress	5
strong				Regina	7
very strong					9
26.	Head: length of del internal stem (as for 25)				
short					3
medium					5
long					7
add	Head: shape of internal stem (as for 25)				
acute				Syunju	1
round				Muso	2
flat					3
add	Head: number of leaf (as for 25)				
few				Harumaki Cross No1	3
medium				Muso	5
many					7

English	Français	deutsch	Español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
add Head: weight (as for 25)					
light				Cream	3
medium				Muso	5
heavy					7
27. Time of head formation					
very early				Nerva, obelisk	1
early				Regina	3
medium				Nestor, WR55	5
late				Granado, kingdom 65	7
very late				Nagaokaking, treasure Island	9
28. Time of bolting					
early				Haku Sen	3
medium				Deep Purple	5
late				Fuku Shihai	7
add Resistance to <i>plasmodiophora brassicae</i> Wornin					
Absent					1
Present					9

VIII. Explanations on the Table of Characteristics / Erklärungen zur Merkmalstabelle

Explanations on the Table of Characteristics

Ad. Outer leaf : shape of apex



acute

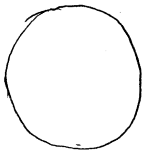


round



flat

Ad. 19 Head : shape in longitudinal section



Circular



Elliptic



ovate



obovate



oblong



long oblong

IX. Literature

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)
<p>TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights</p>	
1. Species	<p><i>(Brassica rapa L. var. pekinensis (Lour.) Kitam)</i> CHINESE CABBAGE</p>
2. Applicant (Name and address)	
3. Proposed denomination or breeder's reference	

4. Information on origin, maintenance and reproduction of the variety

4.1 method of maintenance and reproduction

4.3 Other information

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

Characteristics	Example Varieties	Note
5.1 Plant: height		
short		3[]
medium		5[]
tall		7[]
5.2 Head: shape in longitudinal section		
circular		1[]
elliptic		2[]
ovate		3[]
obovate		4[]
oblong		5[]
long oblong		6[]
5.3 Head:color of wrapper leaf		
white		1 []
yellow		2[]
yellow green		3[]
light green		4[]
green		5[]
dark green		6[]

Characteristics	Example Varieties	Note	
5.4 Time of head formation			
very early			
early		[]	
medium		[]	
late		[]	
very late		[]	
6. Similar varieties and differences from these varieties			
Denomination of similar variety	Characteristic in which the similar variety is different ^{o)}	State of expression of similar variety	State of expression of candidate variety

7. Additional information which may help to distinguish the variety

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

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 that question is yes, please attach a copy of such an authorization.

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