



TWA/41/6

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**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**

Geneva

**TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS****Forty-First Session  
Angers, France, May 21 to 25, 2012**

## VARIETY DESCRIPTION DATABASES

*Document prepared by the Office of the Union*

1. The purpose of this document is to report on developments concerning variety description databases.

Background

2. At its forty-fifth session, held in Geneva from March 30 to April 1, 2009, the Technical Committee (TC) noted from the developments reported in document TC/45/9 "Publication of Variety Descriptions" that members of the Union were developing databases containing morphological and/or molecular data and, where considered appropriate, were collaborating in the development of databases for the management of variety collections, particularly on a regional basis. The TC agreed that it could be beneficial to offer the possibility for members of the Union to report on that work in a coherent way to the TC, the Technical Working Parties (TWP) and the Working Group on Biochemical and Molecular Techniques and DNA Profiling in Particular (BMT). On that basis, the TC agreed to replace the agenda item "Publication of variety descriptions" with an item for "Variety description databases" on the agendas of the forthcoming sessions of the TC, TWP and the BMT. In that respect, it recalled the importance of the list of criteria for consideration for the use of descriptions obtained from different locations and sources as set out in document TC/45/9, paragraph 3. The TC also agreed that the information presented would not need to be related to the publication of descriptions (see document TC/45/16 "Report", paragraph 173).

Developments in the Technical Working Parties at their sessions in 2011

3. The Technical Working Party for Agricultural Crops (TWA), at its fortieth session, held in Brasilia, Brazil, from May 16 to 20, 2011, considered the information provided in documents TWA/40/6 "Variety Descriptions Databases" and TWA/40/13 "Concept of a Database containing Pea Variety Descriptions". The expert from France presented a concept of a database containing pea variety descriptions as the first step for the set up of the variety description database, attached as Annex to this document. The TWA agreed that the project for pea was a good example for the development of a variety description database and encouraged the French expert to continue its development. However, the TWA stressed that a good knowledge needed to be acquired with regard to the reliability of at least the grouping characteristics, before the presented concept could be applied for other species (see document TWA/40/23 "Report" paragraph 57).

4. The Technical Working Party on Automation and Computer Programs (TWC), at its twenty-ninth session, held in Geneva, Switzerland, from June 7 to 11, 2011, considered document TWC/29/13 "Concept of a Database Containing Pea Variety Descriptions", presented by an expert from France. The TWC expressed its concern with regard to the relative low number of corresponding varieties found by the different countries. The grouping characteristics were the characteristics least influenced by the environment and an ICT solution would not be able to solve these harmonization problems. The TWC suggested that the

Technical Working Party for Vegetables (TWV) should continue to discuss the concept and ways to achieve harmonization (see document TWC/29/31, "Report", paragraph 48).

5. The TWC received a presentation entitled "GEMMA: A Technical Website to Share DUS Data" (document TWC/29/24) presented by an expert from France (see document TWC/29/31, "Report", paragraph 49).

6. At its forty-fifth session, held in Monterey, United States of America, from July 25 to 29, 2011, the TWV considered documents TWV/45/6 "Variety Descriptions Databases", TWV/45/13 "Concept of a Database containing Pea Variety Descriptions" and TWV/45/24 "Partial Revision of the Test Guidelines for Pea (Document TG/7/10)", presented Mr. François Boulineau, in conjunction with its discussion on the partial revision of the Test Guidelines for Pea (see document TWV/45/26 "Report", paragraphs 49 to 51).

7. The TWV considered document TWV/45/24, in conjunction with documents TWV/45/6 and TWV/45/13. It agreed that Mr. Boulineau should seek variety descriptions from members of the Union for the 2,400 (approximate) varieties of common knowledge that he had identified, to examine if the following characteristics were sufficiently reliable for use as grouping characteristics:

*Current grouping characteristics:*

Plant: anthocyanin coloration (characteristic 1)

Stem: number of nodes up to and including first fertile node (characteristic 5)

Stipule: flecking (characteristic 20)

Pod: parchment (characteristic 39)

Excluding varieties with pod parchment: entire: Pod: thickened wall (characteristic 40)

Pod: color (characteristic 43)

Immature seed: intensity of green color (characteristic 47)

Seed: type of starch grains (characteristic 49)

Seed: color of cotyledon (characteristic 52)

Only varieties with plant anthocyanin coloration present: Seed: marbling of testa (characteristic 53)

Only varieties with plant anthocyanin coloration present: Seed: violet or pink spots on testa (characteristic 54)

Seed: hilum color (characteristic 55)

Resistance to *Fusarium oxysporum* f. sp. *pisi* (characteristic 58.1)

*Potential grouping characteristic:*

Stem: fasciation (characteristic 3)

Stem: length (characteristic 4)

Foliage: color (characteristic 6)

Leaf: leaflets (characteristic 8)

Time of flowering (characteristic 24)

Only varieties with stem fasciation absent: Plant: maximum number of flowers per node (characteristic 25)

Only varieties with plant anthocyanin coloration present: Flower: color of wing (characteristic 26)

Pod: length (characteristic 37)

Pod: width (characteristic 38)

Only varieties with Pod: thickened wall absent: Pod: shape of distal part (characteristic 41)

Pod: curvature (characteristic 42)

Only varieties with pod color green (Char. 43: state 2): intensity of green color (characteristic 44)

Excluding varieties with pod parchment: entire: Pod: suture strings (characteristic 45)

Seed: shape (characteristic 48)

Seed: weight (characteristic 57)

Resistance to *Erysiphe pisi* Syd. (characteristic 59)

Resistance to *Ascochyta pisi*, Race C (characteristic 60)

8. The TWV agreed that a circular should be prepared by Mr. Boulineau and issued by the Office of the Union to the Technical Committee representative for the following members of the Union, on the basis that they had indicated practical experience in the DUS examination of Pea:

Argentina; Austria; Bulgaria; Canada; China; Czech Republic; Denmark; Estonia; European Union (Community Plant Variety Office (CPVO)); France; Germany; Hungary; Japan; Kenya; Netherlands; New Zealand; Poland; Portugal; Republic of Korea; Republic of Moldova; Romania; Russian Federation; Slovakia; South Africa; Spain; Ukraine; United Kingdom; United States of America.

9. The TWV agreed that the contributors of variety descriptions should be invited to indicate the status of the variety descriptions provided and, in particular, if they constituted the "official" description of the variety concerned.

10. The TWV agreed that the first step in the possible development of a database on grouping characteristics for Pea would be to establish a suitable set of grouping characteristics, as agreed for the partial revision of the Test Guidelines for Pea (see document TWV/45/26 "Report", paragraph 66).

11. The TWV was informed by Mr. Tom Christie (United Kingdom) about the European Cultivated Potato Database (ECPD) (<http://www.europotato.org/menu.php>), which was the result of collaboration between participants in eight European Union countries and five East European countries. The TWV noted that the database could be updated directly by each of the contributors (see document TWV/45/26 "Report", paragraph 67).

12. At its thirteenth session held in Brasilia, Brazil, from November 22 to 24, 2011, the BMT noted the information provided in document BMT/13/4 "Variety Description Databases" (see document BMT/13/36 "Report", paragraph 58).

13. The BMT received a presentation by Mr. Joël Guiard (France) on "*GEMMA: A Technical Web Site to Share DUS Data*", based on document BMT/13/17 [TWC/29/24], which is provided in document BMT/13/17 Add.

14. The BMT received a presentation by Mr. Ivan Schuster (Brazil) on "*Construction of a Molecular Database for Soybean Variety Identification in Brazil*", based on document BMT/13/24, which is provided in document BMT/13/24 Add.

#### Consideration by the Technical Committee in 2012

15. The TC, at its forty-eighth session held in Geneva from March 26 to 28, 2012, considered document TC/48/9 "Variety Description Databases". The TC noted the information provided on variety description databases at the sessions of the TWA, TWC, TWV, TWO, TWF and BMT, held in 2011 (see document TC/48/22 "Report on the Conclusions", paragraphs 114 and 115).

16. The TC requested the experts from France to continue their work on grouping characteristics and on the development of a database containing Pea variety descriptions of members of the Union, as set out in paragraphs 7 to 10 of this document, and to report on their work to the TWPs at their sessions in 2012 and to the TC at its forty-ninth session (see document TC/48/22 "Report on the Conclusions", paragraph 116).

17. The development of a database containing pea variety descriptions from members of the Union will be presented by experts from France at the forty-first session of the TWA.

[Annex follows]

ANNEX

Discussion paper for grouping characteristics used for Pea

	CZ			DE -Veg			DE - Agri			FR			KR			HU - Veg			HU - Agri			NL			NZ			GB			Total								
	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c						
1/Anthocyanin coloration	x			x			x			x			x				x		x			x			x			x			x			9	1				
5/Number of nodes	x				x			x			x				x			x			x			x			x			x			x	5	4	1			
8/Presence of leaflets	x			x			x			x			x			x			x			x			x			x			x			10					
19/Flecking on stipules	x				x				x			x			x			x			x			x			x			x			x	7	2	1			
39/Pod parment	x			x					x	x			x					x			x			x			x			x			x	7	1	2			
40/Pod thickened wall	x			x					x			x	x					x			x			x			x			x			x	6	1	3			
41/Pod extremity	x			x					x	x			x					x			x			x			x			x			x	8	1	1			
43/Pod colour	x				x				x	x			x					x			x			x			x			x			x	8	1	1			
47/Immature seed colour	x				x				x			x			x			x			x			x			x			x			x	4	4	2			
49/Type of strach grains	x			x			x			x			x			x			x			x			x			x					x	10					
52/Colour of cotyledon	x			x			x			x			x			x			x			x			x			x					x	10					
53/Seed marbling of testa	x				x		x					x	x					x	x			x			x			x					x	7	1	2			
54/Pink spots on testa	x				x		x					x	x					x	x			x			x			x					x	7	1	2			
55/Hilum colour	x				x		x					x	x					x	x			x			x			x					x	7	1	2			
58.1/Fusarium 1		x			x				x	x					x			x			x						x			x			x	3	4	3			
3/Fasciation																																					2		
4/Stem length																																					1		
6/Colour of foliage						x																															3		
24/Time of flowering			x			x																															3		
25/Max.number of flowers																																					2		
26/Colour of wing																																					1		
37/Pod length																																					1		
38/Pod width																																					1		
42/Pod curvature																																					1		
44/Pod intensity of colour																																					1		
45/Pod suture strings																																					2		
48/Seed shape																																					1		
57/Seed weight																																					2		
59/Resistance to Erysiphae																																					3		
60/Resistance to Ascochyta																																					1		
Seed:Dimpled																																					1		
Plant:Habit																																					1		
Pod:Type curvature																																					1		
Virus 2																																					1		

: UPOV grouping characteristics  
 : Other UPOV characteristics  
 : Non UPOV characteristics

a : Used for excluding varieties  
 b : Used for grouping in the field  
 c : Not used for grouping

All this charcteristics will be discussed during the TWV meeting before revision of the Pea guide line.