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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY FOR VEGETABLES

Forty-Fifth Session
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CONCEPT OF A DATABASE CONTAINING PEA VARIETY DESCRIPTIONS

Document prepared by experts from France

INTRODUCTION

1. At its forty-fourth session, held in Veliko Tarnovo, Bulgaria, from July 5 to 9, 2010, the Technical Working Party for Vegetables (TWV) considered a survey presented by Mr. François Boulineau (France) (see documents TWV/44/33 "Review of Grouping Characteristics in the Test Guidelines for Pea" and TWV/44/33 Add.).

2. The TWV agreed that it would be useful to seek responses to the questionnaire from a wider number of UPOV members and agreed that the questionnaire should be re-issued to the TWV with copies of documents TWV/44/33 and TWV/44/33 Add. in order to indicate the usefulness of contributing information. It also agreed that it should be clarified in the questionnaire that there would be anonymity for the contributing UPOV members. In addition, the TWV agreed that Mr. Boulineau should make a further study on characteristic 15 "Stem: number of nodes up to and including first fertile node" with particular regard to the calibration of scales between the contributors to the questionnaire.

3. In response to the observation of Mr. Boulineau that the results of the questionnaire indicated substantial potential benefits in developing a database containing pea variety descriptions from members of the Union, at least for grouping characteristics as first step, the TWV agreed that Mr. Boulineau should make a presentation on his concept at the forty-fifth session of the TWV. The TWV agreed that Mr. Boulineau should organize an exchange of a common set of variety descriptions for grouping characteristics, and possibly a

ring test, to examine if grouping characteristics were sufficiently reliable for such an approach. It noted that it would be important to involve the TWA experts in that work.

4. The Technical Committee (TC), at its forty-seventh session held in Geneva, from April 4 to 6, 2011, agreed to request the experts from France to present the concept of a database containing pea variety descriptions of members of the Union to the Technical Working Parties at their sessions in 2011 and to the Technical Committee at its forty-eighth session (see document TC/47/26 “Report on the Conclusions”, paragraph 34).

5. The Annex to this document presents a proposal of a concept of a database containing pea variety descriptions prepared by experts from France.

[Annex follows]

ANNEX

CONCEPT OF A DATABASE CONTAINING PEA VARIETY DESCRIPTIONS

Question 1: Varieties constituting the reference collection *(see Appendix 1)*:

The number of varieties constituting the reference ranges from 57 to 3,250.

A subsequent study carried out by France shows that the varieties that might be considered for inclusion in a collection would include:

1,521 varieties for the Common Catalogue (Vegetables/Agricultural Plants), Organisation for Economic Cooperation and Development (OECD) list and the Community Plant Variety Office (CPVO) database

+ 2,000 entries contained only on the UPOV CD-ROM Plant Variety Database but which certainly do not all correspond to officially recognized varieties.

This number does not take account of the candidate varieties, a number which is difficult to obtain.

Questions 2 and 3: Nature of groupings used *(see Appendix 2)*:

The vast majority of countries that have responded to the survey use the Test Guidelines grouping characteristics in order to:

exclude varieties from trials (a) or
classify the varieties in trials within distinguishing groups (b).

Some countries use more characteristics than those advised by the UPOV Test Guidelines (countries 3, 6 and 8 in particular), but it must be possible to reach agreement on a common list of sufficiently stable characteristics to be included in a centralized database.

Question 4: Varieties to be compared with candidate varieties *(see Appendixes 3 and 4)*:

Two descriptions were sent to participant countries (one corresponding to a vegetable pea and the other to an agricultural pea). These descriptions included the information contained in the UPOV Technical Questionnaire.

Each country should provide the varieties which it would put in place in the field if it received this type of request and by applying its own set of grouping characteristics.

Only three responses have been able to be used but still the results are interesting:

Group 1 – Vegetable pea:

Country 3 = 37 varieties to be compared
Country 6 = 48 varieties to be compared
Country 8 = Five varieties to be compared

The total number of varieties cited by at least one country is 66:

→ no variety is selected by three countries
→ 22 varieties are selected by two countries only, i.e. 33 per cent.

In 23 cases (i.e. 33 per cent of cases), the reason for the non-choice of the variety is: variety not present or not described in the database of the country concerned.

The other causes of difference are mainly due to different notes in the databases or to different significance ranges (notes 4 and 6 do not differ from 5 in certain countries, but differ in others).

Group 2 – Agricultural pea:

Country 3 = 48 varieties to be compared
Country 6 = 31 varieties to be compared
Country 8 = One variety to be compared

The total number of varieties cited by at least one country is 63:
→ no variety is selected by three countries
→ 16 varieties are selected by two countries only, i.e. 25 per cent.

The reason for non-choice of varieties has not been supplied by two countries and this aspect cannot therefore be analyzed.

Conclusion

The grouping characteristics selected by UPOV are in general reliable and robust characteristics (resistant to genotype/environment interaction); they therefore vary only very little between different countries excluding species known to be sensitive to certain climatic elements (onion and photoperiod for example).

In these conditions, it may be envisaged to introduce for certain species, such as pea, a joint database containing all the varieties for consideration as a part of the reference collection. The information relating to the grouping characteristics alone could therefore be brought together by means of this database (while preserving the origin of the description), so that each country may define the varieties for potential inclusion in its trials and thus harmonize and improve the situation observed through question 4.

[Appendix 1 follows]

APPENDIX 1 to ANNEX

Grouping characteristics used for Pea :

	Country 1			Country 2 Veg			Country 2 Agri			Country 3			Country 4			Country 5 Veg			Country 5 Agri			Country 6			Country 7			Country 8			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			9		1
5/Number of nodes	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			10		
19/Flecking on stipules	x				x				x		x		x			x			x			x			x			x			7	2	1
39/Pod parcment	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			6	1	3
41/Pod extremity	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			8	1	1
47/Immature seed colour	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			10		
52/Colour of cotyledon	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			7	1	2
54/Pink spots on testa	x				x		x				x		x				x		x			x			x			x			7	1	2
55/Hilum comour	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																						x						x			2		
4/Stem length																						x									1		
6/Colour of foliage					x																	x						x			3		
24/Time of flowering		x			x																				x						3		
25/Max.number of flowers																						x							x		2		
26/Colour of wing																												x			1		
37/Pod length																						x									1		
38/Pod width																						x									1		
42/Pod curvature																						x									1		
44/Pos intensity of colour																												x			1		
45/Pod suture strings																						x						x			2		
48/Seed shape																												x			1		
57/Seed weight																						x			x						2		
59/Resistance to Erysiphae										x												x						x			3		
60/Resistance to Ascochyta										x																					1		
Seed:Dimpled																												x			1		
Plant:Habit																												x			1		
Pod:Type curvature																												x			1		
Virus 2										x																					1		

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

a : Used for excluding varieties
b : Used for grouping in the field
c : Non used for grouping

[Appendix 2 follows]

Vegetable group

Country 3	Country 6		Country 8
41 = 2	ADRIANA		
ARKEL	ARKEL		
AROMUNDA	AROMUNDA		
BALLADO	BALLADO		
Not in FR database	BARTESA		
Not in FR database	BICADO	Old variety	
Not in FR database	BISE		
BOHDAN		41 = 2	
BORNOVA	BORNOVA		
58.1 = 1 (susceptible)	CASH		
CLIOR	CLIOR		
5 = 5	CLUB	12/13 nodes	
58.1 = 1 (susceptible)	COBALT		
Not in FR database	COMIRE	Old variety	
CORONADO	CORONADO		
5 = 5	CREDO	12/13 nodes	
CRISTO	CRISTO		
Not in FR database	D 85051	New var.(Rumble)	
Not in FR database	D 94144	New var.(Retrovert)	
DECORETTE		47 = 3	
DISCO	DISCO		
58.1 = 1 (susceptible)	EVITA		
Not in FR database		Not in NL database	FRIGA
GIARESA	GIARESA		
5 =5		12/13 nodes	GROPON
HOLIDAY	HOLIDAY		
IDAHO	IDAHO		
5 = 5		12 nodes	INGA
ISOLDE		= ISOLE ?	
JORANE	JORANE		
KELMERVEIL		Not in NL database	
Not in FR database	KELVEDON TRIUMPH		
5 = 1	KELVIL	7 nodes	
KOLETTE		47 = 3	
LEVANT	LEVANT		
LOWAREX		47 = 3	
MASTERFON	MASTERFON		
Not in FR database	MERKION		
5 = 5	MINADO	12 nodes	MINADO
MINGOMARK	MINGOMARK		
NANOK		Not describe	
OSKAR	OSKAR		
PALADIO		Not describe	
PATRICIA	PATRICIA		
PINTO		47 = 3 / 52 = 2	
Not in FR database	PRECISE		
PRIMELLE			
PRIOR	PRIOR		
PROGRESS N°9	PROGRESS N°9		
Not in FR database	PROMADO	Old variety	
PRUNELLE		47 = 3	
REGALIA		Not in NL database	
Not in FR database	REGULUS	Old variety	
REXADO	REXADO		
Not in FR database	RUMBLE	New variety	
58.1 = 1 (susceptible)	SALOUT		
5 = 5	SCIROCCO	11/12 nodes	
Not in FR database	SERENADO		
Not in FR database		5 = 6	SOMERSET
STAR 9		Not describe	
TARPEIA		47 = 3	
58.1 = 1 (susceptible)	TEZIERIDE		
Not in FR database	TIMUR		
TRITON	TRITON		
58.1 = 1 (susceptible)	TURBO		
UBU			
VALMA		Not in NL database	
Not in FR database	ZENITH		

Commun varieties

[Appendix 3 follows]

Field peas group

Country 3	Country 6	Country 8
63 = 9 (Resistant)	ALGARVE	
ALHAMBRA		
ALLURE		
ANNO		
Not in FR database	APOLLO	
ARIANE		
ARIZONA	ARIZONA	
ARROW		
63 = 9 (Resistant)	ARTHUR	
AXE		
BETTY		
12 = 9	BIRDIE	
BONANZA		
58.1 = 9 (Resistant)	CADDY	
CALLISTO	CALLISTO	
5 = 9	CANIS	
5 = 9	CARNEVAL	
Not in FR database	CEBECO 4119	
CLASSIC	CLASSIC	
5 = 9	CHEYENNE	CHEYENNE
COUNTESS		
DECOR		
DIAMAN	DIAMAN	
DRUJBA		
DUEL	DUEL	
EDEN	EDEN	
EIFFEL	EIFFEL	
FANFARE		
58.1 = 9 (Resistant)	GRAFILA	
GRANADA	GRANADA	
HARMONY		
ICEBERG	ICEBERG	
IGLOO		
IMPALA	IMPALA	
JACKPOT	JACKPOT	
JULIA		
KLEOPATRA		
MADORA		
MADRIA		
MAGISTRAL		
Not in FR database	MANDY	
MERAN		
58.1 = 9 (Resistant)	MIAMI	
NIVA		
ODIN		
OPUS		
PERTTU	PERTTU	
5 = 9	PHONIX	
PRIMERA		
QUADRIL		
RAMROD	RAMROD	
RIGEL		
ROCKET		
SIMONA		
SKYLINE		
SOPRANO		
SOVEREIGN		
58.1 = 9 (Resistant)	SUNNA	
SW CELINE		
5 = 9	SW CLARA	
SW UNIVERSAL	SW UNIVERSAL	
TENOR		
TOSKANA	TOSKANA	
58.1 = 9 (Resistant)	VISION	

Commun varieties.

[End of Appendix 3 and of document]