

UPOV

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
Geneva

**TECHNICAL WORKING PARTY ON AUTOMATION
AND COMPUTER PROGRAMS**

**Thirtieth Session
Chisinau, Republic of Moldova, June 26 to 29, 2012**

ADDENDUM

VARIETY DESCRIPTION DATABASES

Document prepared by an expert from France

The Annex to this document contains a copy of a presentation, prepared by an expert from France for the thirtieth session of the Technical Working Party on Automation and Computer Programs, concerning reference collections and grouping characteristics, using the example of Pea.

[Annex follows]



Groupe d'Étude et de contrôle
des Variétés Et des Semences

Reference Collection and grouping characteristics

Example of the Pea species

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des Variétés Et des Semences

Monterey (USA, 2011) :

- TWV/45/24 “Partial Revision of the Test Guidelines for Pea (TG/7/10)”,
- TWV/45/6 “Variety Descriptions Databases”
- TWV/45/13 “Concept of a Database Containing Pea Variety Descriptions”

Background :

Collection & Characteristics :

- to define the **theoretical collection** of varieties of common knowledge
- to collect a maximum of **descriptions** of these varieties
- to define **reliable characteristics** for use as excluding characteristics

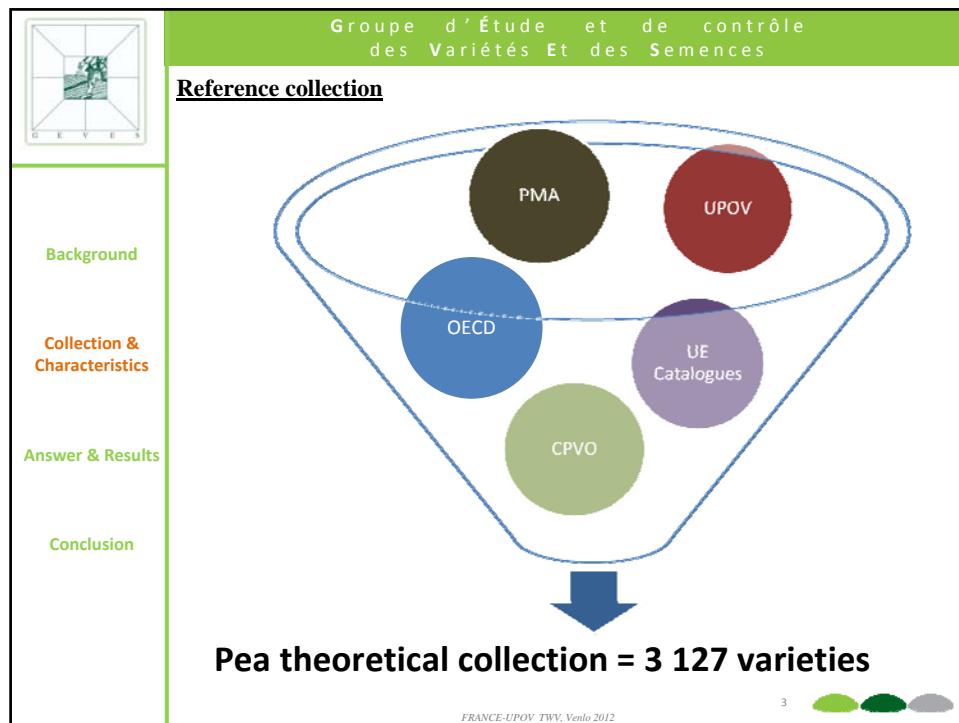
 = strong and discriminant characteristics

Aim : To obtain a Common Working Data Base

Helpful tip ose reference varieties in DUS examination.

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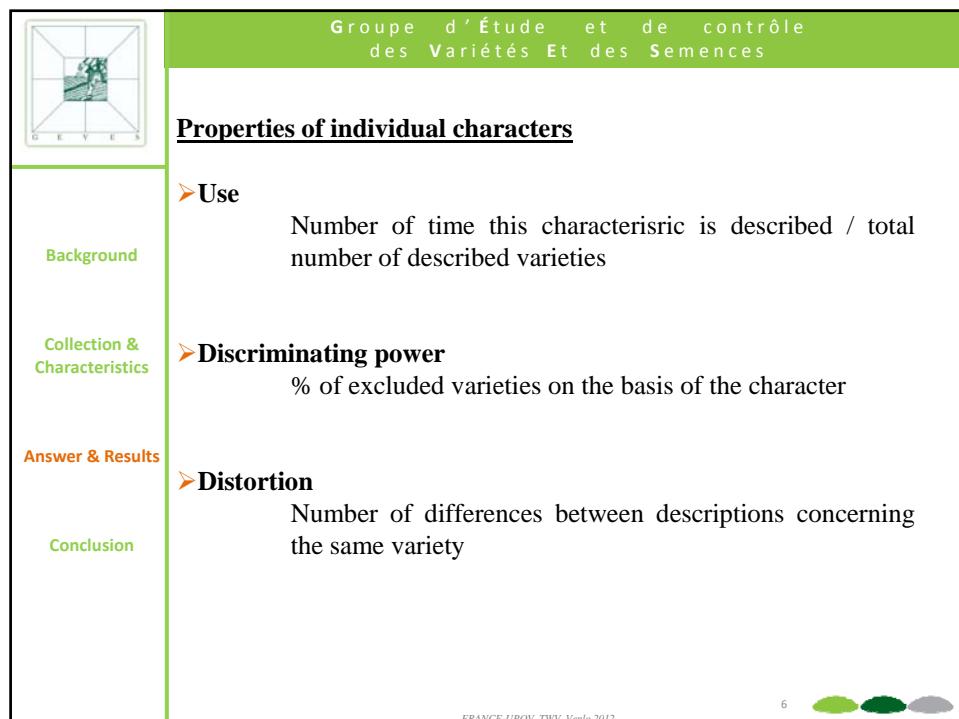
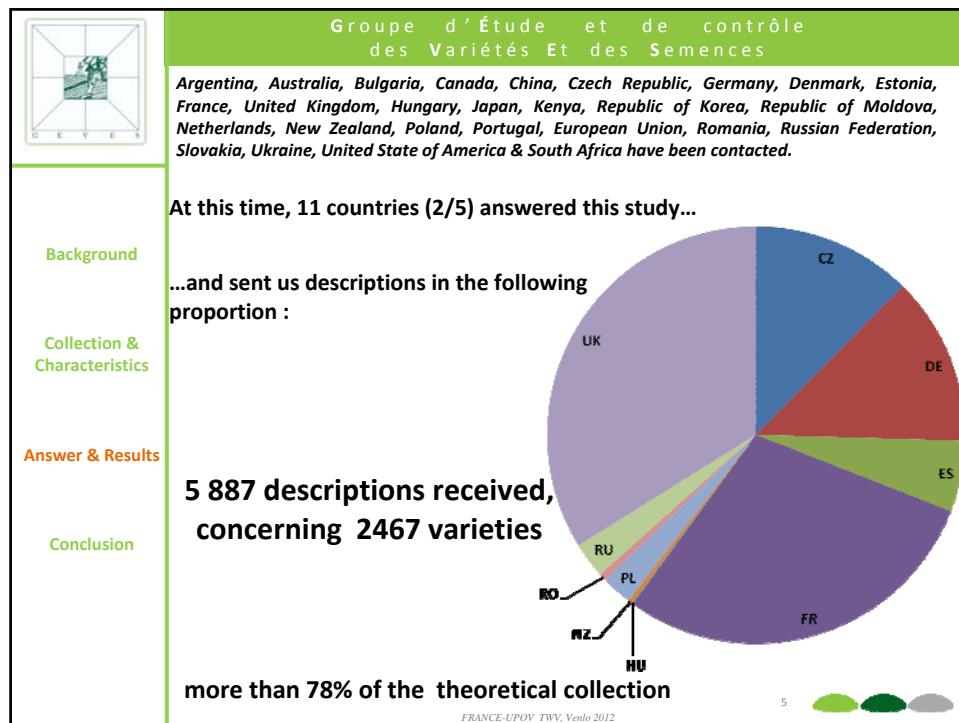
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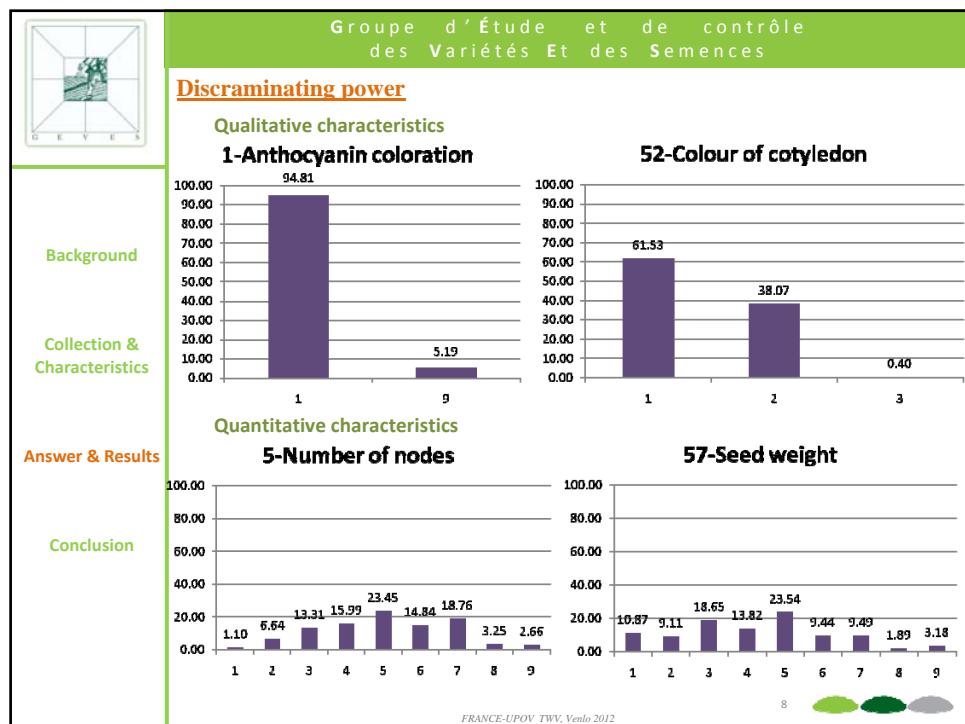
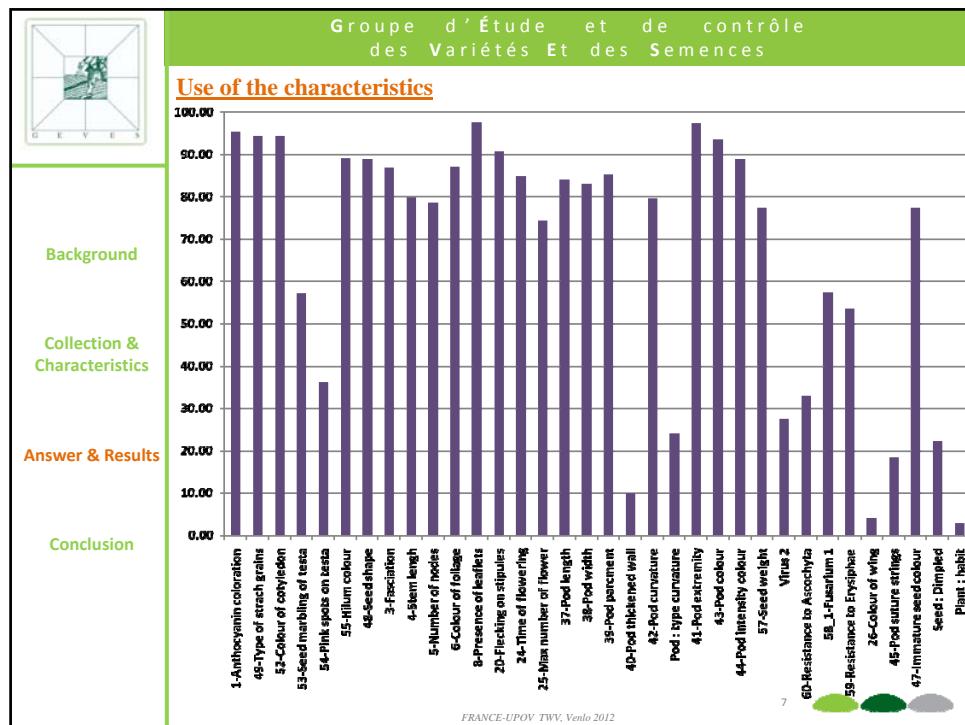
Characteristics envisaged for excluding

- Current grouping characteristics
i.e. anthocyanin coloration, number of nodes up to and including first fertile node, hilum color ...
- New potential grouping characteristics
i.e. fasciation, time of flowering, resistance...

► **2 excel files have sent in order to know**

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<u>Distortion (1/2)</u>				
<i>Analysis performed only on varieties for which we received more than one description.</i>				
Background	Qualitative characteristic	Number of varieties with # notes	Total number of varieties	Percentage of distortion
Collection & Characteristics	1-Anthocyanin coloration	11	1798	0.61
Answer & Results	52-Color of cotyledon	149	1784	8.35
Conclusion	8-Presence of leaflets	33	1796	1.84
	41-Pod extremity	108	1784	6.05
	58.1-Fusarium 1	81	1126	7.19
	60-Resistance to Ascochyta	12	328	3.66
Obviously, some differences are due to errors in notes transcriptions, using wrong guidelines or observations of wrong variety.				
Contact will be made to clarify some issues				

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<u>Distortion (2/2)</u>				
Background	Quantitative characteristic	Number of varieties with # notes	Total number of varieties	Percentage of distortion
Collection & Characteristics	Difference between varieties	1 note	2 notes	3 notes
Answer & Results	5-Number of Nodes	1271	1378	92.24
		900 65.31	369 26.78	93 6.75
	4-Stem length	1206	1381	87.34
		805 58.29	409 29.62	174 12.60
	42-Pod curvature	1110	1351	82.16
		511 37.82	174 12.88	44 3.26
	57-Seed weight	1135	1383	82.07
		660 47.72	260 18.80	92 6.65
	47-Immature seed color	830	1255	66.14
		473 37.69	104 8.29	50 3.98
Conclusion	25-Number max of flower	457	1325	34.49
		164 12.38	60 4.53	31 2.34
For these continuous characteristics, special attention must be paid in term of distances between varieties				

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To conclude, it's possible to characterize each character to help the experts to choose the best...

For official grouping characters

	Use	Discriminating power	Distortion
1-Anthocyanin coloration	95.26	95/5	0.61
5-Number of nodes	78.51	54 ->4/5/6	26.78*
8-Presence of leaflets	97.50	39/61	1.84
20-Flecking on stipules	90.69	2/98	3.09
39-Pod parchment	85.17	7.5/92.5	14.04
40-Pod thickened wall	9.80	84/16	4.57
41-Pod extremity	97.21	24/76	6.05
43-Pod color	93.49	0.2/98/1	2.83
47-Immature seed color	77.36	33 ->4/5/6	8.29*
49-Type of strach grains	94.24	51/49	3.63
52-Color of cotyledon	94.36	62/38	8.35
53-Seed marbling of testa	57.09	97/3	1.16
54-Pink spots on testa	36.03	91/5/4	14.58
55-Hilum color	89.08	98/2	1.60
58_1-Fusarium 1	57.19	80/20	7.19

*2 notes
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Background
Collection & Characteristics
Answer & Results
Conclusion

Use	Discriminating power	Distortion
>75% [60-40]	<10	
40%-75% [20]	[80-20]	10-20
<40%	>[80-20]	>20

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For candidate grouping characters

	Use	Discriminating power	Distortion
3-Fasciation	86.80	99/1	0.57
4-Stem lengh	79.65	49 ->4/5/6	29.62*
6-Color of foliage	86.90	2/93/5	8.07
24-Time of flowering	84.75	68 ->4/5/6	10.07*
25-Max number of flower	74.20	17 ->4/5/6	4.53*
26-Color of wing	4.09	80/20	5.43
37-Pod length	83.90	16 ->4/5/6	14.66*
38-Pod width	83.01	55 ->4/5/6	42.21*
42-Pod curvature	79.45	27 ->4/5/6	12.83*
44-Pod intensity color	88.77	46 ->4/5/6	13.80*
45-Pod suture strings	18.33	95/5	2.37
48-Seed shape	88.74	37/45/4/14	44.91
57-Seed weight	77.34	47 ->4/5/6	18.80*
59-Resistance to Erysipheae	53.47	87/13	3.39
60-Resistance to Ascochyta	32.87	80/20	3.66
Plant : habit	2.84	70 ->4/5/6	0*
Pod : type curvature	23.95	98.9/1/0.1	1.89
Seed : Dimpled	22.12	75/25	44.34
Virus 2	27.45	60/40	15.00

*2 notes
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Background
Collection & Characteristics
Answer & Results
Conclusion

Use	Discriminating power	Distortion
>75% [60-40]	<10	
40%-75% [20]	[80-20]	10-20
<40%	>[80-20]	>20

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Among 3127 varieties present in the theroretical collection, 667 ones are without description after this study :

- **103 from the EU catalogues including 48 non-withdrawn ones**
↳ countries in charge of the admission should be contacted
- **13 from CPVO**
- **415 from UPOV (PLUTO database)**
- **108 from OECD**
- **21 are EU Provisional Market Authorization**

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How to go on...

What is it possible to do ?

Relation for number of nodes between UK and FR on 875 varieties ...

Number of nodes (Difference UK/FR)	Percentage of varieties
-6	0.11
-5	0.11
-4	1.03
-3	16.46
-2	49.83
-1	29.60
0	2.63
1	0.11
2	0.11

Except for some errors, (to be clarified), more than 80 % of the varieties have one or two notes less in UK than in FR.

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