



**TWO/45/6 Add.**  
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**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**  
Geneva

**TECHNICAL WORKING PARTY FOR ORNAMENTAL PLANTS AND FOREST TREES**

**Forty-Fifth Session**

**Jeju, Republic of Korea, August 6 to 10, 2012**

ADDENDUM


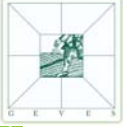
VARIETY DESCRIPTION DATABASES

*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 forty-fifth session of the Technical Working Party for Ornamental Plants and Forest Trees, 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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|                              |   |
|------------------------------|---|
| Background                   | <p><b>Monterey (USA, 2011) :</b></p> <ul style="list-style-type: none"><li>▪ TWV/45/24 “Partial Revision of the Test Guidelines for Pea (TG/7/10)”,</li><li>▪ TWV/45/6 “Variety Descriptions Databases”</li><li>▪ TWV/45/13 “Concept of a Database Containing Pea Variety Descriptions”</li></ul>   |
| Collection & Characteristics | <p><b>Goals :</b></p> <ul style="list-style-type: none"><li>▪ to define the <b>theoretical collection</b> of varieties of common knowledge</li><li>▪ to collect a maximum of <b>descriptions</b> of these varieties</li><li>▪ to define <b>reliable characteristics</b> for use as excluding characteristics</li></ul> <p>↳ = strong and discriminant characteristics</p> |
| Answer & Results             | <p><b>Aim :To obtain a Common Working Data Base</b></p>   |
| Conclusion                   | <p>Helpful to use reference varieties in DUS examination.</p>   |

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### Reference collection

**Pea theoretical collection = 3 127 varieties**

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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**

| Country | Year | Name | Accession | Characteristics | Remarks | Comments | Notes |
|---------|------|------|-----------|-----------------|---------|----------|-------|
| France  | 2011 | ...  | ...       | ...             | ...     | ...      | ...   |
| France  | 2011 | ...  | ...       | ...             | ...     | ...      | ...   |
| France  | 2011 | ...  | ...       | ...             | ...     | ...      | ...   |
| France  | 2011 | ...  | ...       | ...             | ...     | ...      | ...   |
| France  | 2011 | ...  | ...       | ...             | ...     | ...      | ...   |
| France  | 2011 | ...  | ...       | ...             | ...     | ...      | ...   |
| France  | 2011 | ...  | ...       | ...             | ...     | ...      | ...   |
| France  | 2011 | ...  | ...       | ...             | ...     | ...      | ...   |

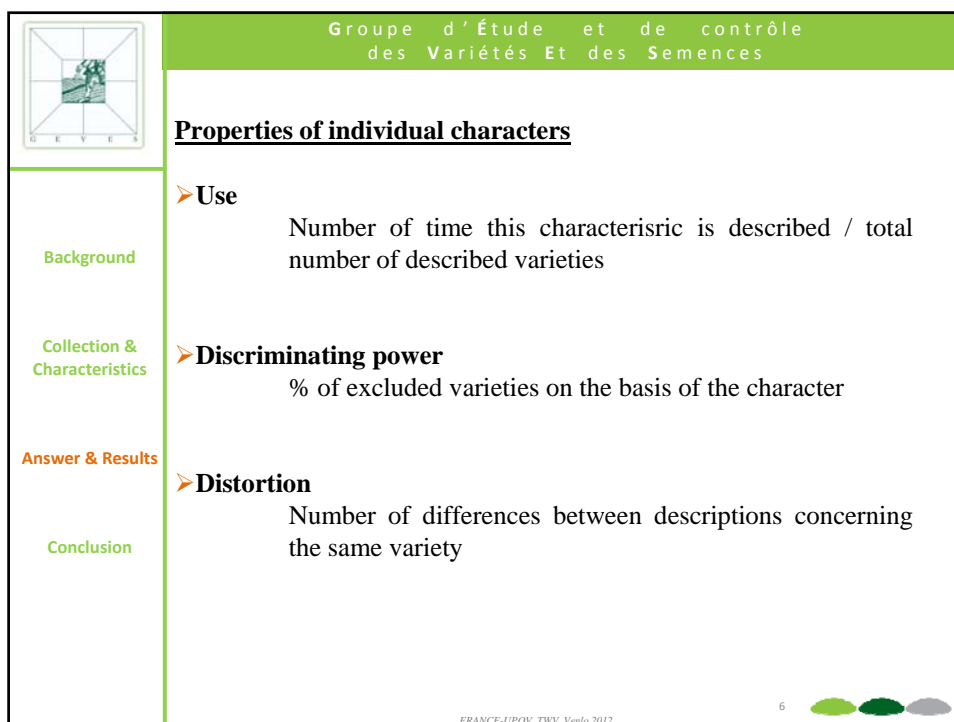
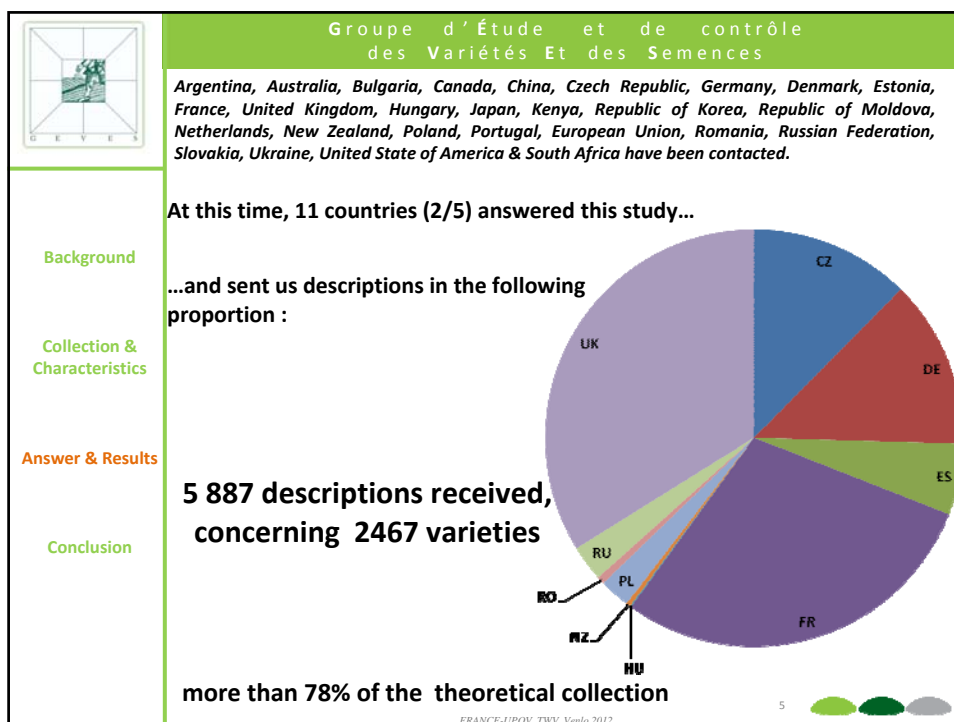
If the variety should appear in the technical collection,  
If description or/and seeds are available.

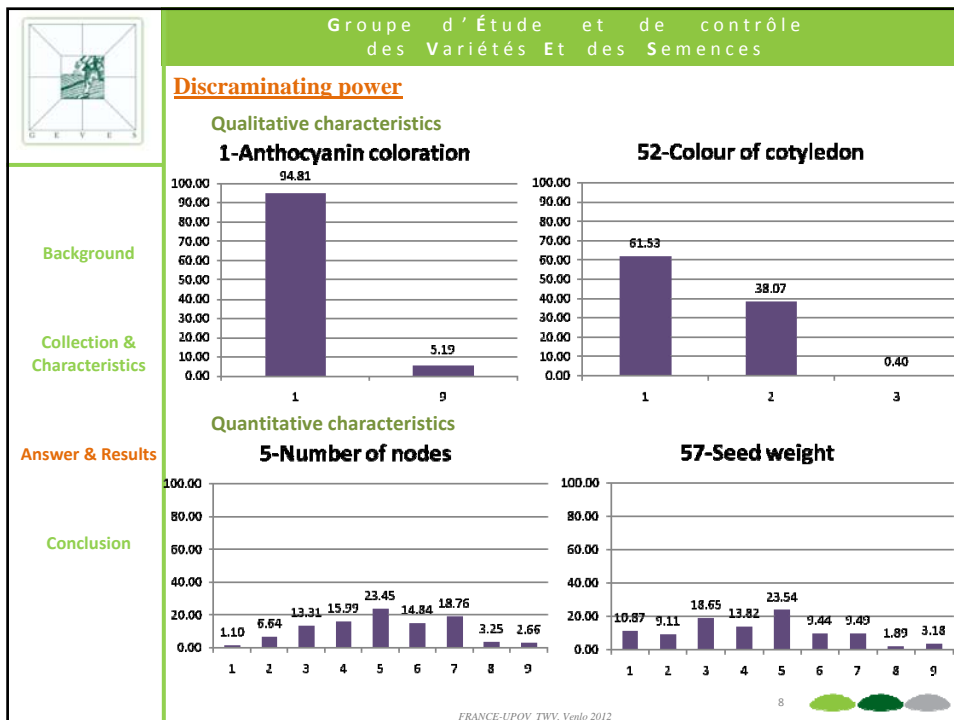
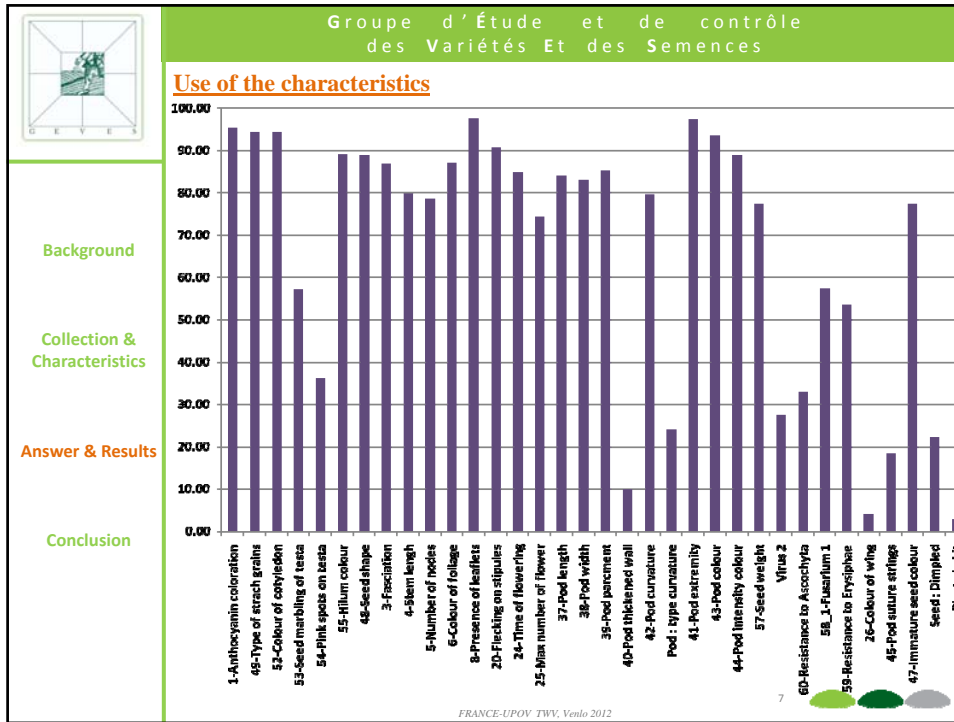
| Country | Year | Name | Accession | Characteristics |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|------|------|-----------|-----------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|         |      |      |           | 1               | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| France  | 2011 | ...  | ...       |                 |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


The note of each characteristic for each variety.


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|--|-----------------------------------|---|----------------------------------|---------------------------------|
| <b>Distortion (1/2)</b><br><i>Analysis performed only on varieties for which we received more than one description.</i>  |                                   |   |                                  |                                 |
| Background<br><br>Collection & Characteristics<br><br>Answer & Results<br><br>Conclusion   | <b>Qualitative characteristic</b> | <b>Number of varieties with # notes</b> | <b>Total number of varieties</b> | <b>Percentage of distortion</b> |
|  | 1-Anthocyanin coloration          | 11                                      | 1798                             | 0.61                            |
|  | 52-Color of cotyledon             | 149                                     | 1784                             | 8.35                            |
|  | 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.<br><br>Contact will be made to clarify some issues |                                   |   |                                  |                                 |
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|---|------------------------------------|---|----------------------------------|---------------------------------|-------------------------------------|----------------|----------------|
| <b>Distortion (2/2)</b>   |                                    |   |                                  |                                 |                                     |                |                |
| Background<br><br>Collection & Characteristics<br><br>Answer & Results<br><br>Conclusion                    | <b>Quantitative characteristic</b> | <b>Number of varieties with # notes</b> | <b>Total number of varieties</b> | <b>Percentage of distortion</b> | <b>Difference between varieties</b> |                |                |
|   |                                    |   |                                  |                                 | <b>1 note</b>                       | <b>2 notes</b> | <b>3 notes</b> |
|   | 5-Number of Nodes                  | 1271                                    | 1378                             | 92.24                           | 900<br>65.31                        | 369<br>26.78   | 93<br>6.75     |
|   | 4-Stem length                      | 1206                                    | 1381                             | 87.34                           | 805<br>58.29                        | 409<br>29.62   | 174<br>12.60   |
|   | 42-Pod curvature                   | 1110                                    | 1351                             | 82.16                           | 511<br>37.82                        | 174<br>12.88   | 44<br>3.26     |
|   | 57-Seed weight                     | 1135                                    | 1383                             | 82.07                           | 660<br>47.72                        | 260<br>18.80   | 92<br>6.65     |
|   | 47-Immature seed color             | 830                                     | 1255                             | 66.14                           | 473<br>37.69                        | 104<br>8.29    | 50<br>3.98     |
| 25-Number max of flower   | 457                                | 1325                                    | 34.49                            | 164<br>12.38                    | 60<br>4.53                          | 31<br>2.34     |                |
| For these continuous characteristics, special attention must be paid in term of distances between varieties |                                    |   |                                  |                                 |                                     |                |                |
| 10                     |                                    |   |                                  |                                 |                                     |                |                |
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|--|---------------------------|----------------------|------------|--------|
| <b>To conclude, it's possible to characterize each character to help the experts to choose the best...</b> |                           |                      |            |        |
| <i>For official grouping characters</i>  |                           |                      |            |        |
|  | Use                       | Discriminating power | Distortion |        |
| Background   | 1-Anthocyanin coloration  | 95.26                | 95/5       | 0.61   |
|  | 5-Number of nodes         | 78.51                | 54 →4/5/6  | 26.78* |
| Collection & Characteristics   | 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   |
| Answer & Results   | 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   |
| Conclusion   | 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   |
|  |                           |                      |            |        |
|  |                           |                      |            |        |

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

\*2 notes  
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|---|----------------------------|----------------------|------------|--------|
| <i>For candidate grouping characters</i>                      |                            |                      |            |        |
|   | Use                        | Discriminating power | Distortion |        |
| Background  | 3-Fasciation               | 86.80                | 99/1       | 0.57   |
|   | 4-Stem length              | 79.65                | 49 →4/5/6  | 29.62* |
| Collection & Characteristics                                  | 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* |
| Answer & Results  | 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* |
| Conclusion  | 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 Erysiphae | 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  |

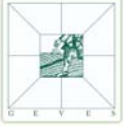
  

| Use     | Discriminating power | Distortion |
|---------|----------------------|------------|
| >75%    | < [60-40]            | < 10       |
| 40%-75% | [60-40] / [80-20]    | 10-20      |
| ≤40%    | >[80-20]             | >20        |

\*2 notes  
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**Among 3127 varieties present in the theoretical 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**

Background


Collection & Characteristics

Answer & Results


Conclusion

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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<br>(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                    |

) 80 %  
)  
)

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

Background

Collection & Characteristics

Answer & Results

Conclusion

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