



## Management of Variety Collections

### Experience in Germany

Beate Rücker

Federal Variety Office, Hannover, Germany

Seminar on DUS Testing, Geneva, March 18-20, 2010



### Variety collection for DUS testing



**Consideration of all varieties of common knowledge which might be similar to the candidate varieties!**

For general aspects of variety collections see TGP/4, for the assessment of distinctness see TGP/9.

Practical example for the constitution of reference collections in Germany:

- How to define the composition of the collection?
- How to collect plant material, variety descriptions and administrative data?
- How to maintain collections of living plant material and to update descriptive information?
- How to select similar varieties for the growing trial?



**Varieties of common knowledge**

**“Inventory”**

- listed and protected varieties (national, EU, OECD ...)
- trade and commercial registers
- agricultural hybrids: parental lines
- candidate varieties
- varieties from public assessable collections
- relevant example varieties from test guideliens



**Varieties of common knowledge**

**“Inventory”**

**Reference collection**

**Similar varieties for growing trial**



**For each new candidate variety, the reference collection has to be reviewed!**

**Updating is a continuous process!**



### **Crop specific practical approaches:**

#### Seed propagated species

- Maintenance of standard seed samples + Variety description (applied for all seed propagated species)

**Example 1: Wheat**

#### Vegetatively propagated species

- Maintenance of a living reference collection + Variety description (e.g. grapevine, fruit trees, garden roses, ornamental and fruit shrubs)
- Variety descriptions, no living reference collection (e.g. many ornamental species)

**Example 2: Impatiens**



### Variety collection of Wheat



- Seed propagated varieties
- Grown worldwide but important regional adaptation
- „Living reference collection“

#### Elements of the collection:

- Verified seed samples in seed store
- Descriptive data: at least 2-year examination results from our location
- Administrative data

#### Varieties in the collection:

- All varieties which are listed or protected in Germany (ca. 140)
- Other Varieties adapted to central European agro-climatic conditions (ca. 270)
  - a) with Community Plant Variety Rights
  - b) permitted for marketing in EU (Common Catalogue)



### **Collection and maintenance of plant material:**

#### German varieties:

Seed sample requested from breeder (specified quantity and quality)

Verification of breeder's sample: side by side comparison in field trial to  
**first submitted sample**

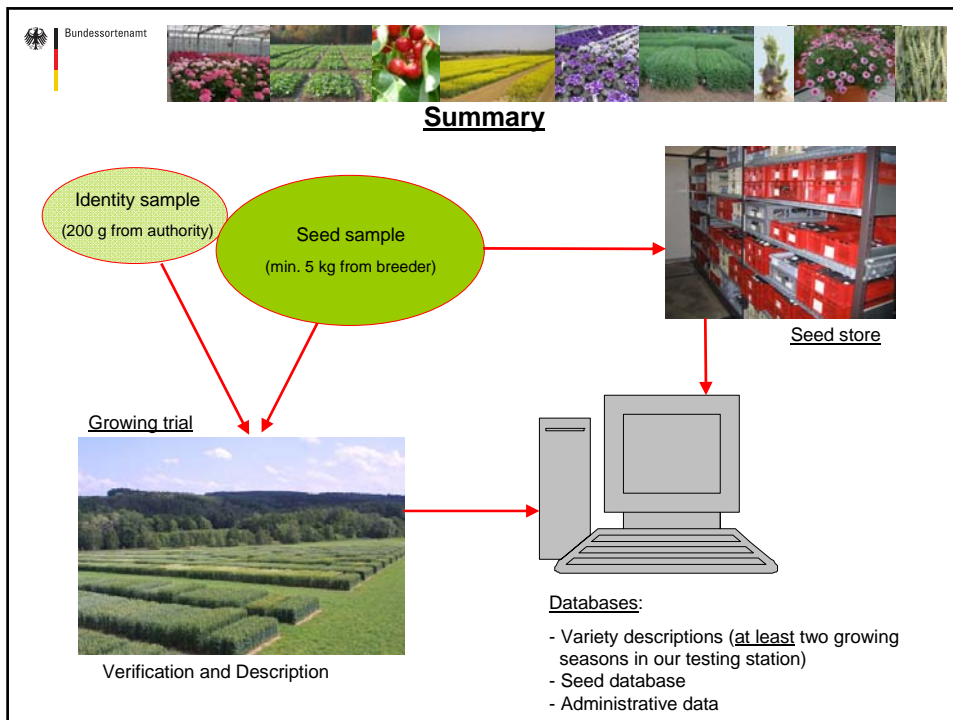
#### Foreign varieties:


Seed sample requested from breeder (specified quantity and quality)


Verification of breeder's sample: side by side comparison in field trial to  
**identity sample requested from foreign authority**



**Never put a sample in the seed store without verification**



 Bundessortenamt



### **Selection of similar varieties for the growing trial:**

- Regular German DUS test for cereals over 3 growing cycles
- Similar varieties from reference collection are selected on the basis of results of candidates in first year. For reference varieties mean descriptions across years are used from database.
- Comparison of candidates and similar varieties in same growing trial in second and third year.

Number of varieties in DUS trials 2009:

	Candidates	grown References	Total	excluded References
Winter wheat	210	310	520	80
Winter barley	135	123	258	127
Spring barley	89	164	253	60
Winter triticale	65	61	126	46
Oats	20	69	89	58



### Variety collection of Impatiens



- Vegetatively propagated varieties
- Same variety might be grown worldwide
- No „living reference collection“

#### Elements of the collection:

- Descriptive data: at least 1-year examination results from our location
- Photos taken in our trials
- Administrative data

#### Varieties in the collection:

- All varieties which have ever been grown as a candidate or similar variety in Germany (ca. 1300)



### **Collection and maintenance of descriptive data:**

- New reference varieties incorporated in collection if considered as potential similar variety to a candidate variety according to all available information (published variety descriptions and images, commercial catalogues, internet ...)
- Plant material for reference varieties requested (specified quantity/quality) from breeder, multiplier, market, plant collections
- Description produced for every variety in the trial and stored in the DB
- Standardized images are taken for every variety in the trial and stored in the DB
- Verification of submitted material against variety description by experienced crop expert with good knowledge of species and varieties



**Database includes descriptions and images from own trials**



### Database

No	Year	Name	Char.1	Char.2	Char.3	Char.4	Char.5	Char.6	Char.7	Char.7
78	2002	Dinni	6	5	2	7	4	0006D	6,04	5
78	2004	Dinni	6	5	2	7	4	0006D	7,74	6
87	2004	Chania	6	5	1	7	3	0046D	5,93	4
87	2006	Chania	5	6	1	7	2	0046D	6,00	4
88	2004	Helena	5	6	1	1	3	0004D	6,00	4
88	2005	Helena	6	5	1	1	2	0004D	5,99	3
88	2008	Helena	5	6	1	1	3	0004D	6,02	3
91	2004	Rhea	4	5	1	3	3	0052C	6,46	5



### List of similar Varieties identified by the software (data for candidate variety as given in TQ)

Name	Year	Plant: height	Leaf: colour	Flower: type	Flower: diameter	Flower: number of colours	Flower: colour
Candidate		6	1	1	7	1	57B
Balcelsa	2003	0	0	0	0	0	N66A
	1999	1	0	0	1	0	66A
Fisfuchs	2003	-1	0	0	-1	0	N66B
Fisimp551	2002	1	0	0	1	0	58B

#### Candidate



#### Fisfuchs





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**Thank you for your attention!**