



EUROPEAN UNION
COMMUNITY PLANT VARIETY OFFICE

Management of Winter Oilseed Rape Reference Collections

**A project co-financed by
CPVO
(and DEFRA in UK).**

Collaboration

- NIAB (UK)
- GEVES (France)
- DIAS (Denmark)
- BSA (Germany)
- NIAB, GEVES and DIAS conducting molecular analysis – all partners providing phenotypic data
- Project runs from January 2005 to January 2008

The Problem!

- Increasing size of WOSR reference collections in EU countries between 2003 and 2006.
- UK ~500 >700 varieties
- FR ~500 > 700 varieties
- DE ~598 > 696 varieties
- DK ~490 > 510 varieties

DUS Winter oilseed rape plots



Objectives and approach

- Evaluate the use of markers to manage the WOSR reference collection.
- Assess an Option 2 approach.
- Maintain the value of variety protection.
- Provide an assured method of pre-selection of varieties to grow via a European database to reduce numbers needing to be grown.

Selection of SSRs

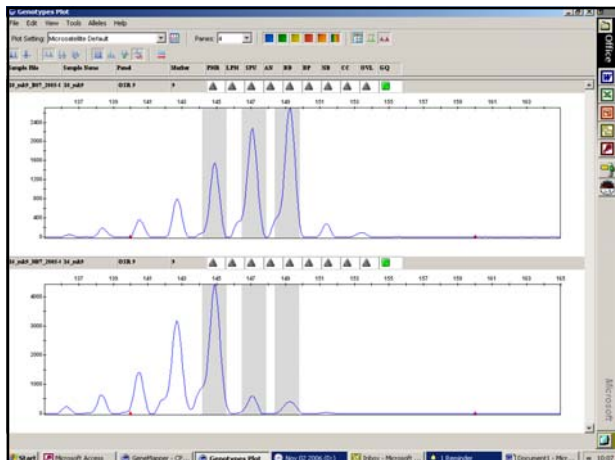
- A set of 29 public domain markers initially assessed by inter laboratory comparison against a set of 12 reference DNA samples.
- 40 common varieties analysed with 22 of these markers in 3 labs using the same seed source.
- Different platforms used in this phase (NIAB and DIAS – capillary, GEVES – gel).
- A subset of 21 markers selected as being robust, informative and simple to score.

Genotyping

- 410 varieties (OP lines) analysed between 3 labs using the 21 selected SSRs.
- NIAB and GEVES – 190 varieties each, DIAS 70 varieties.
- NIAB and GEVES – 40 common varieties.
- All labs - 5 control varieties from the original 40 (quality control check).
- The same platforms used in this phase (all used capillary based).

Markers selected

Marker	No of alleles
M1 Ra2-E03	3
M2 Bn12A	4
M3 Bn26A	2
M4 CLONE33	3
M5 LS107	3
M8 Na10-H03	2
M9 Na10-E02	3
M10 Na12D04	3
M11 Na12-A02	5
M12 Na12-E02	4
M14 Na14H11	4
M15 OI09-A06	3
M16 OI10-B01	4
M17 OI10F11	3
M19 OI11B05	3
M20 OI11-G11	4
M21 OI12F02	9
M22 OI13C12	4
M23 Ra1-F06	6
M25 Ra2-A11	2



Phenotypic data

- Phenotypic data from 2003, 2004 and 2005 collated for those 410 varieties genotyped.
- Phenotypic data from 21 CPVO characteristics used: UPOV notes and year means.

Further work

- Definitive analysis of the full morphology and molecular data sets.
- Assess potential application in GAIA software.
- Full evaluation of an “Option 2” approach: Potential use of molecular markers to manage the WOSR reference collection.



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SPACE!!**