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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**WORKING GROUP ON BIOCHEMICAL AND MOLECULAR
TECHNIQUES AND DNA PROFILING IN PARTICULAR**

Ninth Session

Washington, D.C., June 21 to 23, 2005

RESEARCH PROJECT CO-FINANCED BY THE
COMMUNITY PLANT VARIETY OFFICE (CPVO):
“MANAGEMENT OF WINTER OILSEED RAPE REFERENCE COLLECTIONS”

Document prepared by experts from the United Kingdom

1. The BMT agreed that, where agreed by the relevant experts, the presentations made at the meeting should be made available in the BMT document section of the UPOV website, as addenda to the relevant documents. This document contains a copy of the presentation made by Mr. Robert Cooke (United Kingdom) for document BMT/9/8.



EUROPEAN UNION
COMMUNITY PLANT VARIETY OFFICE

Management of Winter Oilseed Rape Reference Collections.

A project co-financed by CPVO.

Dr Robert J. Cooke
NIAB, Cambridge UK

NIAB Management of Winter Oilseed Rape Reference Collections

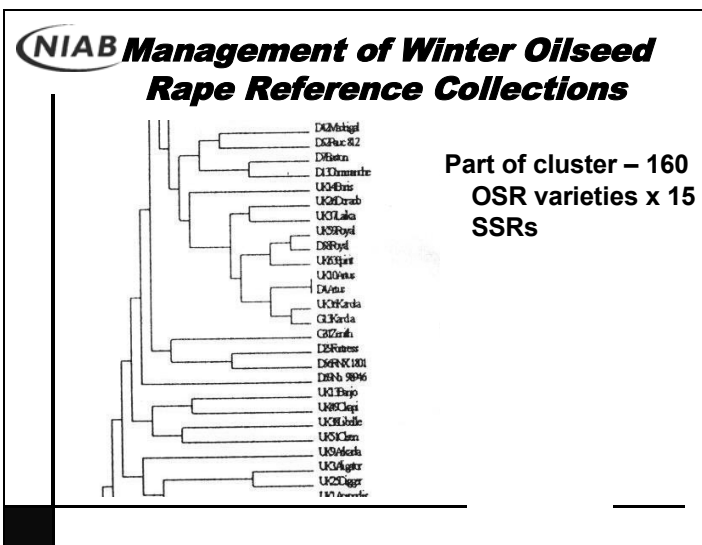
Background: Previous work on OSR includes a Defra-funded project in the UK:-

- Set (15) of SSR markers developed and evaluated (+ LARS, Bristol)
- Used to evaluate D and U (x 48 individuals) in 10 varieties
- Some markers replaced - D and U re-assessed (33 varieties x 48 individuals)
- New SSR set used to analyse larger variety collection (160) from different countries

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UK OSR Project – Results:-

- SSRs could be used to assess D (and U & S)
- High levels of D with 15 SSRs
- Markers could be used in different labs
- Varieties from different sources had same (or closely similar) profile



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UK OSR Project – Results:-

- 4 varieties (of 33) - uniform at 15 loci
- 8 varieties - average non- U levels (across 15 loci) of <1%
- 13 varieties - non-U levels of <5%
- 8 varieties - non-U >5% (highest 10%)

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UK OSR Project – Example of U data:

Variety	SSR															Average Non-U (%)
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
A	3	20	15	12	1	7	2	0	0	0	1	6	2	12	1	5.5
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	16	0	22	6	19	15	0	0	0	0	0	0	21	6	0	7.0
D	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0.3
E	4	4	0	1	0	1	0	0	0	0	0	4	3	1	0	1.2
F	1	1	0	1	0	1	0	1	0	0	1	0	17	14	0	2.6

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- This & similar work elsewhere being followed up in CPVO co-financed project:
“Management of Winter Oilseed Rape Reference Collections.”
- Partners: NIAB, GEVES, DIAS, BSA
- Option 2 approach
- Started January 2005

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- Selecting agreed marker set (c. 20 SSRs)
- Analyse 410 varieties in 3 labs, incl. 40 as a QA set
- Compile molecular and morphological data
- Calculate & compare “genetic” and “phenotypic” distances
- Evaluate use of markers to manage reference collections (reduce number of varieties grown in field trial)

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