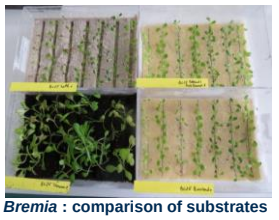
CPVO
Community Plant Variety Office



***Bremia* : comparison of substrates**

UPOV Technical Committee Discussion: Use of Disease and Insect Resistance Characteristics in DUS Examination

Geneva, 3 April 2017

Harmonisation of resistance tests for DUS testing: "Harmores 2"

Sergio Semon, CPVO

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Introduction

- CPVO co-funded three year project (2012-2015), coordinated by GEVES
- 7 examination offices (CZ, DE, ES, FR, GB, HU, NL) and 5 European Seed Association (ESA) members involved
- **Aims**: Harmonise at the European Union level, resistance tests to seven vegetable diseases:
  - *Bremia lactucae* in lettuce
  - *Fusarium oxysporum* f. sp. *pisi* race 1 in pea
  - *Ascochyta pisi* race C in pea
  - TMV: 0 in pepper,
  - PMMoV: 1.2 in pepper,
  - PMMoV:1.2.3 in pepper,
  - PVY: 0 in pepper

Why harmonise DUS resistance test protocols

- Better coherence of results between countries
- Better declarations from breeders and official tests
- Better definition and exchange of reference material

Methodology

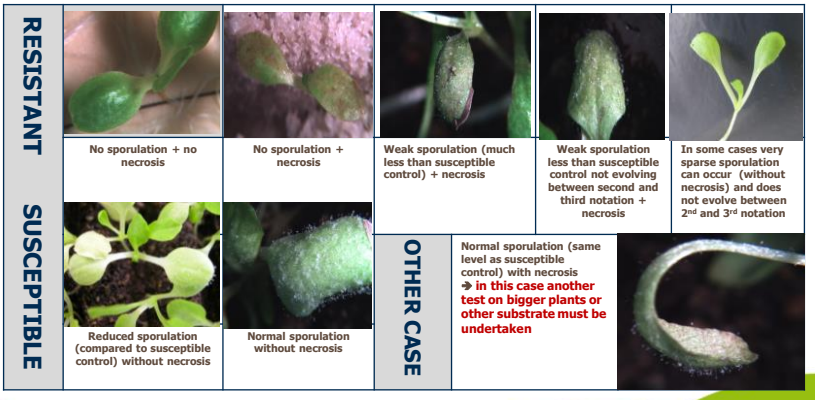
- ✓ updated bibliography on the selected host/pathogen combinations
- ✓ available reference isolates with maintainer laboratories
- ✓ available reference varieties as resistant and susceptible controls
- ✓ optimised culture conditions for all the studied pathogens
- ✓ optimised test conditions
- ✓ harmonised techniques to be proposed to CPVO for implementation

Time frame and deliverables of project

Phase 1	• *Description and comparison of the existing tests*
Phase 2	• *Selection of common reference material*
Phase 3	• *Harmonisation and validation of resistance testing techniques*
Phase 4	• *Implementation of harmonised techniques into corresponding CPVO test protocols and UPOV Test Guidelines*

Collaboration and « hands on » approach

- Numerous exchanges during the project's duration
- Annual meetings between the project partners
- Practical workshops to harmonise interpretation of results



Results and implementation

- Presentation of new notation scale to the International Bremia Evaluation Board (IBEB), and scientific posters at Eucarpia congresses 2015-16
- Updated robust test techniques proposed 2016 to CPVO
- CPVO implemented improved techniques in March 2017 via partial revisions to lettuce, pepper and pea protocols
- **Final step**: implementation by UPOV of improved techniques into:
  - ✓ **Revision of the Test Guidelines for lettuce TG/13/11** (approval at TC/53)
  - ✓ **Partial revision of the Test Guidelines for pepper TG/76/8 Rev.** (discussion at TWV/51)
  - ✓ **Partial revison of the Test Guidelines for pea TG/7/10 Rev.** (discussion at TWV

Thank you for your attention!

Any questions ?