UPOV

International Union for the Protection of New Varieties of Plants

E

Technical Working Party for Fruit Crops

TWF/50/9 Add.

Fiftieth Session
Budapest, Hungary, June 24 to June 28, 2019

Original: English
Date: July 26, 2019

ADDENDUM TO ACCESS TO PLANT MATERIAL FOR THE PURPOSE OF MANAGEMENT OF VARIETY COLLECTIONS AND DUS EXAMINATION

Document prepared by experts from China and Italy

1. The Technical Working Party for Fruit Crops (TWF), at its forty-ninth session, held in Santiago de Chile, from November 19 to 23, 2018 agreed to discuss the item "Access to plant material for the purpose of management of variety collections and DUS examination" at its next session (see document TWF/49/12 "report", paragraph 106). It further agreed to invite Canada, China, European Union, Italy and Spain to give a presentation.

2. The annexes to this document contain copies of presentations made at the fiftieth session of the TWF, in addition to the presentation made by an expert from Canada (see document TWF/50/9), as follows:

- Annex I: "China's practice in accessing to plant materials for variety collection management and DUS test", by an expert from China;

- Annex II: "Access to plant material for variety testing purposes: Status quo, problems and possible solutions", by an expert from Italy.

[Annexes follow]

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China's practice in accessing to plant materials for variety collection management and DUS test

PVP Office

National Forestry and Grassland Administration

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DUS examination system for woody plant varieties in China

- Centralized DUS testing
  - Manages variety collections
- Breeder's DUS testing
  - Usually no variety collection

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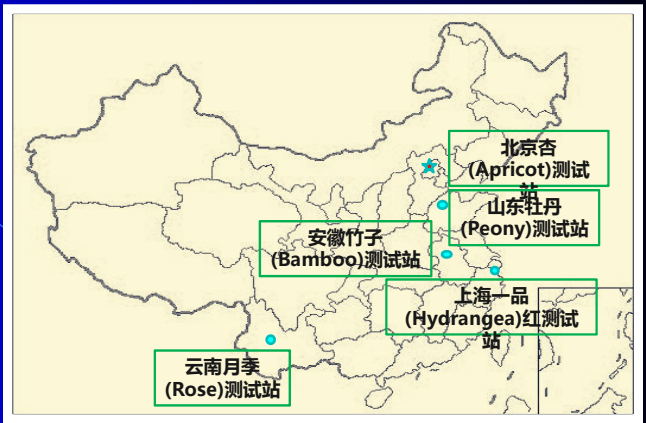
Centralized DUS testing



5 testing centers、2 molecular labs, 6 test stations

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Centralized DUS testing

- Test centers/stations are required by the PVP Office to establish variety collection by the government for variety management and DUS test
- They are usually affiliated to public research institutions
- Variety holders more trust these DUS centers/stations
- Easier to access to plant materials for DUS testing with the coordination by the PVP Office

Breeder's DUS test

- DUS test conducted at the site of breeders by on-site expert panel review
- Usually no variety collection, few breeding companies manage variety collection
- Variety holders less trust the breeders, not willing to contribute varieties to DUS testing
- Difficult to access to plant materials for DUS testing

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Access to plant materials

- Easier access to plant material for DUS examination within China
- More difficult to access plant materials in other countries due to border control and quarantine requirements;
- Owners less willing to offer varieties to outside their own countries
- Restrictions by international conventions: ABS

Points for discussions

- Increasing difficulty in collecting varieties and managing big variety collection
- New technologies may help, e.g. High quality images and video records, Molecular descriptions,
- Big data and AI would also be potential tools in future
- 5G technologies possible for cross country real-time non-delay transmission of images and live videos for comparisons

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Thank you!

[Annex II follows]

Access to plant material for variety testing purposes: Status quo, problems and possible solutions - a contribution for discussion from ITALY

MINISTERO DELLO SVILUPPO ECONOMICO
DIREZIONE GENERALE PER LA LOTTA ALLA CONTRAFFAZIONE
UFFICIO ITALIANO BREVETTI E MARCHI

UIBM

50° UPOV TWF, Budapest, 24-28 June, 2019

ITALY: ORGANIZATION OF EXAMINATION OFFICES FOR PLANT VARIETY RIGHTS GENERAL ASPECTS

2 systems:

national

international

release of PVR

- Ministry of Economic Development (Italian Office for Patents and Trademarks - UIBM)
- Community Plant Variety Office (CPVO)

Procedures: the same, but communication and Report sending to either UIBM or CVPO

In Italy EOs are not coordinated by a national Authority, neither for national nor for international PVR

ITALY: CURRENT EXAMINATION OFFICES - FRUIT SECTOR

2 Research Centres belonging to the Council for Agricultural Research and Economics (CREA), specifically:

Research Centre for Olive, Fruit and Citrus:
National PVR: all fruit species
European PVR: Actinidia, Peach, Japanese Plum, Pistacia, Pear hybrid rootstocks, Eucalyptus

Research Centre for Grape ad Enology:
National PVR for vine grape, table grape, *Vitis* rootstocks
European PVR: vine and table grape

ITALY: CURRENT EXAMINATION OFFICES - AGRICULTURAL AND VEGETABLE SPECIES

1 Research Centre belonging to the Council for Agricultural Research and Economics (CREA), specifically:
Research Centre for Plant Protection and Certification

ITALY: EXAMINATION OFFICES FOR PLANT VARIETY RIGHTS
REFERENCE COLLECTIONS

All EOs have comprehensive Reference Collections, both as living collections and in the form of Bibliographic references comprising a large number of varieties of common knowledge

- **Living collections (plants, seeds, in vitro)**
- **Bibliography**

Varieties of common knowledge:

- **Officially registered in any Member State, or**
- **Subject to official registration (registration process is underway)**
- **Plant variety protection has been filed in any Member State (granting process is underway)**

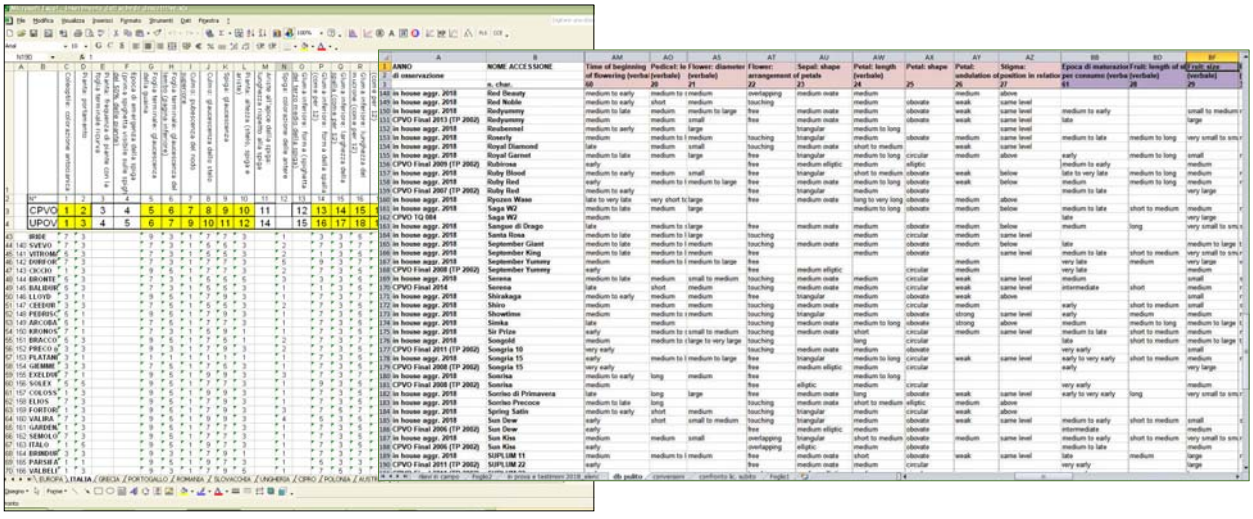
  - **All varieties which have an official or an officially recognized description**

    «official»: following Technical Protocol/Test Guideline/National procedure

    «officially recognized»: other kind of description (monograph, publication)

ITALY: EXAMINATION OFFICES FOR PLANT VARIETY RIGHTS
REFERENCE COLLECTIONS

- Documentation: in house excel spread sheets



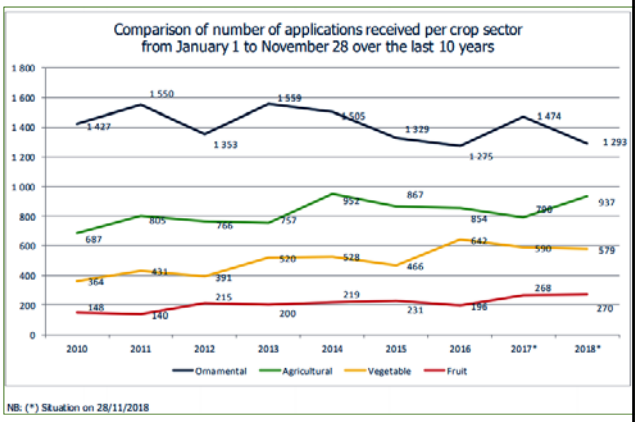
TRENDS OF RELEASE AND INTRODUCTION OF NEW CULTIVARS IN THE WORLD

Top 10: UPOV members by number of titles issued

Rank	2007 Member	2007 Number of titles issued	2016 Member	2016 Number of titles issued	2017 Member	2017 Number of titles issued
1	European Union	2,616	European Union	2,980	European Union	2,865
2	United States of America	1,374	China ↑2	2,132	China	1,646
3	Japan	1,338	United States of America ↓1	1,703	United States of America	1,604
4	China	596	Japan ↓1	914	Ukraine	887
5	Ukraine	555	Republic of Korea ↑3	834	Japan ↓1	812
6	Canada	442	Russian Federation ↑1	592	Netherlands ↑1	672
7	Russian Federation	431	Netherlands ↑2	588	Russian Federation ↓1	641
8	Republic of Korea	424	Brazil ↑5	301	Republic of Korea ↓3	541
9	Netherlands	366	South Africa ↑1	247	Brazil ↓1	327
10	South Africa	225	France ↑13	200	Australia ↑3	244

Note: In 2016, Ukraine did not report number of titles issued. 14

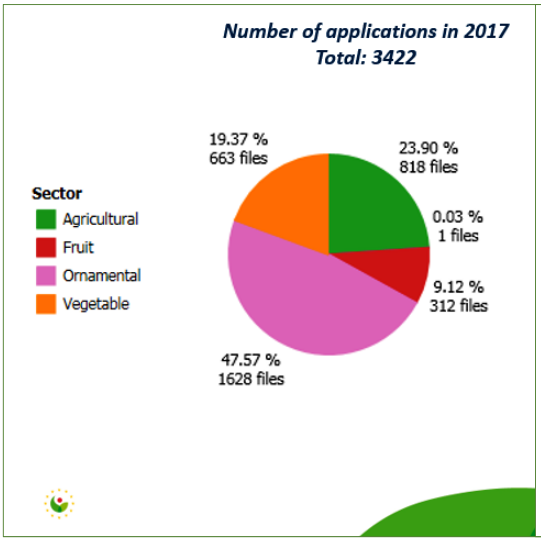
Source: UPOV, TWF 2018, Chile



Source: CPVO, MEO 2018, Angers

There is the necessity to constantly implement living collections and available data

TRENDS OF RELEASE AND INTRODUTION OF NEW CULTIVARS IN THE WORLD



Number of applications of the 10 most important fruit species

Species	2016	2017
Peach	48	52
Strawberry	26	44
Apple	42	39
Grapevine	16	34
Raspberry	13	27
Blueberry	10	23
Apricot	24	16
Blackberry	5	16
Japanese plum	7	7
Sweet Cherry	4	6
Total	195	264

Fruit species: 312 files at CPVO in 2017 (tendency rising since 2011)

Most important species: peach, strawberry, apple

Source: CPVO, FEM 2018, Angers

ORGANIZATION OF EXAMINATION OFFICES FOR PLANT VARIETY RIGHTS LIVING COLLECTIONS

Main problems of Examination Offices:

- **Introduction of material (find provider, obtain material from provider, introduce material into country: phytosanitary aspects, legislation)**
- **Integration and maintenance of living collections is costly and requires available land area**
- **Sanitary problems can affect phenotypes, influence performances or even kill the plants**
- **Safety of the protected variety (illegal reproduction)**

INTRODUCTION OF MATERIAL INTO THE COLLECTION

3 scenarios

National sources

EU sources

Third Country sources

- **Breeders**
- **National collections**
- **Institutional collections**
- **Other public collections (regions, botanic gardens etc)**
- **Private collections**
- **…others…**

INTRODUCTION OF MATERIAL INTO THE COLLECTION
Applicable Law

European Community:

COUNCIL DIRECTIVE 2000/29/EC of 8 May 2000
on *protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community*

COMMISSION IMPLEMENTING DIRECTIVE (EU) 2017/1279 of 14 July 2017
amending Annexes I to V to Council Directive 2000/29/EC

Italy:

Legislative Decree n. 214 of 19 August 2005, n. 214.

- **Implementation of Council Regulation 2000_29_CE**

and subsequent updates

INTRODUCTION OF MATERIAL INTO THE COLLECTION: Applicable Law

List of species and related quarantine organisms of which the material must be free for movement within the EU (Certification by means of Plant Phytosanitary Passport)

Actinidia Lindl Kiwifruit	*Pseudomonas syringae* pv *actinidiae*
Castanea Mill. Chestnut	*Cryphonectria parasitica*
***Citrus* spp. and hybrids** Lemon, Orange, Mandarine, Tangerine Bergamot, Pummelo, Citron	*Spiroplasma citri*, *Foma tracheiphila*, *Citrus* vein enation woody gall, *Citrus* tristeza virus
***Coffea* whole genus**	*Xylella fastidiosa*
***Crataegus* spp** Azerole	*Erwinia amylovora*
***Cydonia* spp** Quince	*Erwinia amylovora*, Pear decline MLO
***Eriobotrya* spp** Loquat	*Erwinia amylovora*
***Ficus carica* L.**	*Xylella fastidiosa*
***Fortunella* Swingle e ibridi** Kumquat	*Spiroplasma citri*, *Foma tracheiphila*, *Citrus* tristeza virus, *Trioza erytreae*
***Fragaria* L.** Strawberry	ArMV, RRV, StCV, SLRV, SMYEV, TBRV, *Xanthomonas fragariae*, *Aphelenchoides besseyi*, *Phytophthora fragarie*, *Globodera pallida*, *Globodera rostochiensis*
***Malus* spp** Apple	APMLO (Apple proliferation mycoplasm), *Erwinia amylovora*
***Mespilus* spp** Medlar	*Erwinia amylovora*
Musaceae* (whole family) *Banana	*Radopholus similis*, *Liriomyza huidobrensis*, *Liriomyza trifolii* + for *Musa* spp: *Ralstonia solanacearum*
Olea europaea Olive	*Xylella fastidiosa*
***Persea* spp.** Avocado	*Radopholus similis*, *Liriomyza huidobrensis*, *Liriomyza trifolii*
***Poncirus* Raf. and hybrids** Trifoliate orange	*Spiroplasma citri*, *Phoma tracheiphila*, *Citrus* tristeza virus, *Trioza erytreae*
***Prunus* L. (execpt *Prunus laurocerasus* and *P. lusitanica*)** Almond, Apricot, Cherry, Peach, Plum	Apricot chlorotic leafroll mycoplasm, *Xanthomonas arboricola* pv *pruni*, Plumpox Virus (PPV), *Pseudomonas syringae* pv. *persicae*, *Xylella fastidiosa*
***Pyrus* spp** Pear	PDMLO (pear decline mycoplasm), *Erwinia amylovora*
***Rubus* L.** Blackberry, Raspberry	ArMV, RRV, SLRV, TBRV
***Sorbus* spp** Service Tree	Erwinia amylovora
***Vitis* L**. Grape	Grapevine flavescence doree MLO, *Xylophilus ampelinus*, *Daktulosphaira* (= Viteus, Phylloxera) *vitifolii*, *Xylella fastidiosa*.

INTRODUCTION OF MATERIAL INTO THE LIVING COLLECTION

SCENARIO 1 + 2: national and European Community sources

- **For circulation within Italy and within the European Union:**

Plant Passort is issued by the single company/collection holder upon authorization by the respective phytosanitary Service

Observations:

- **Acquisition of plant material does not imply particular problems;**
- **Time span is usually limited to the technical time needed for laboratory analysis and shipping of the material**

INTRODUCTION OF MATERIAL INTO THE LIVING COLLECTION

SCENARIO 3: Third Country sources

Same list of harmful organisms as for EU circulation, plus quarantine requirements for a list of species and additional harmful organisms

Castanea Mill. material other than fruits and seeds	
Cydonia Mill., ***Crateagus*** L., ***Malus*** Mill., ***Prunus*** L., ***Pyrus*** L. material intended for planting, other than dormant plants free from leaves, flowers and fruit	
Vitis other than fruits	CH exluded
Plants of ***Citrus*** L., ***Fortunella*** Swingle, ***Poncirus*** Raf., and their hybrids other than fruit and seeds	
Corylus L. Hazelnut	only USA

Observations:

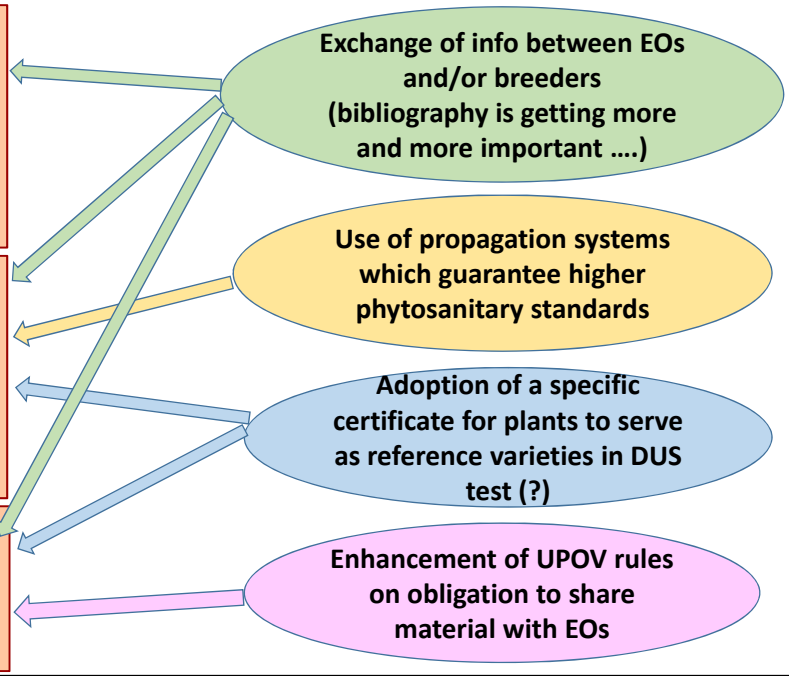
- **Acquisition of plant material implies lengthy procedures:**
  - **Specific autorization of Ministry of Agriculture and of Regional Phytosanitary office**
  - **Material will be put in quarantine for 1 or more years observed and tested in laboratory to be free of a list of patogens depending of the species – one the material is «clean» it can officially enter into the country**

MAIN PROBLEMS AND HOW TO ADDRESS THEM…?

PROBLEM 1:
High number of annually new released varieties: Difficulty of keeping track and include them all in living collections (time, costs and land available)

PROBLEM 2:
Difficulty to introduce material for customs and quarantine reasons (including long time procedures and risk of loss of material)

PROBLEM 3:
Reluctance/delaying by breeders and collection holders to share physical material with EOs



Specific Passport/Customs certification…..ongoing activities in other fora

EXAMPLE: Global Soil Partnership (FAO):

Initiative on Global Soil Laboratory Network (GLOSOLAN):
Network of Accredited Laboratories for Soil Analysis for information sharing on the world's soils composition, threats and services

- **To overcome customs and other problems, a facilitated procedure, for example through a globally standardized certificate, is being elaborated to allow for samples to easily transit borders for the specific purposes of GLOSOLAN**

Request for the elaboration of such measures are being brought to the attention of the FAO Council meeting on 1 July 2019

Possible way for exchange of plant material under UPOV/CPVO????

OTHER PROBLEMS: Nagoya Protocol

- **Varieties of common knowledge: modern and local varieties**

«Country of Origin» needs to be asked for permit to access material

Further loss of time for administrative operations
potentially heavy sanctions (legal and/or monetary according to national laws)

Breeders' Exemption: NP potentially violates Breeders' Exemption

application is due to national decision

OTHER PROBLEMS: re-access to original material after a certain time

Plant material held in living collections deteriorates over time (phytosanitary problems can influence the expression of characteristics)

- **flowering or ripening time**
- **fruit size, shape and colour**
- **etc**

Necessity to recover the material from the original source and/or conserved in adequate conditions (safety duplications, screenhouse, *in vitro* or cryoconservation etc)

[End of Annex II and of document]