



# Plant variety regulation and evaluation focusing on berries

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Community Plant Variety Office



# Outline

- Bases of the EU system
- Community Plant Variety Office
- Definition of a variety
- Variety evaluation – DUS testing
- Testing protocols
- Let's talk about money
- Breeder's impact on the EU system



# BASES OF THE EU SYSTEM

- The Council Regulation 2100/94 in line with the UPOV Convention of 1991
- Implementing Regulations of the European Commission
  - Proceedings before the CPVO (Regulation No. 874/2009)
  - Fees payable to the CPVO (Regulation No. 1238/95)
  - The agricultural exemption (Regulation No. 1768/95)



# BASES OF THE EU SYSTEM

- Regulation (EU) 2021/1873 of the European Parliament and of the Council of 20 October 2021 on the extension of the term of the CPVRs of the species *Asparagus officinalis* L. and of the species groups flower bulbs, woody small fruits and woody ornamentals

*Aristotelia chilensis*

*Coffea arabica*

*Hippophae rhamnoides*

*Lonicera caerulea* var. *kamtschatica*

*Lonicera caerulea* var. *emphylocalyx*

*Lycium barbarum*

*Passiflora edulis*

*Prunus pumila*

*Prunus cerasifera* x *P. pumila* var. *besseyi*

*Ribes nigrum*

*Ribes rubrum*

*Ribes uva-crispa*

*Ribes x nidigrolaria*

*Rubus idaeus*

*Rubus* subg. *Rubus*

*Rubus idaeus* x *R. parvifolius*

*Rubus occidentalis*

*Vaccinium*

*Vaccinium angustifolium* x *V. corymbosum*

*Vaccinium corymbosum* x *V. darrowii*

*Vaccinium corymbosum*

*Vaccinium virgatum*

*Vaccinium simulatum*

*Vaccinium angustifolium*



# BASES OF THE EU SYSTEM







# BASES OF THE EU SYSTEM

Study: Impact of the CPVR system on the EU economy and the environment

Published on [https://cpvo.europa.eu/sites/default/files/documents/cpvr\\_study\\_full\\_report\\_0.pdf](https://cpvo.europa.eu/sites/default/files/documents/cpvr_study_full_report_0.pdf)

- *The central finding with respect to output is that in the absence of the CPVR system, in 2020 production of*
  - *arable crops in the EU would be - 6.4% lower,*
  - *fruit would be 2.6% lower,*
  - *vegetables would be 4.7% lower,*
  - *the output of ornamentals would be 15.1% lower.*

*additional production brought about by plant variety innovations supported by the CPVR is sufficient to feed an additional 57 million people world-wide (arable crops), 38 million in the case of fruit, and 28 million for vegetables.*



# BASES OF THE EU SYSTEM

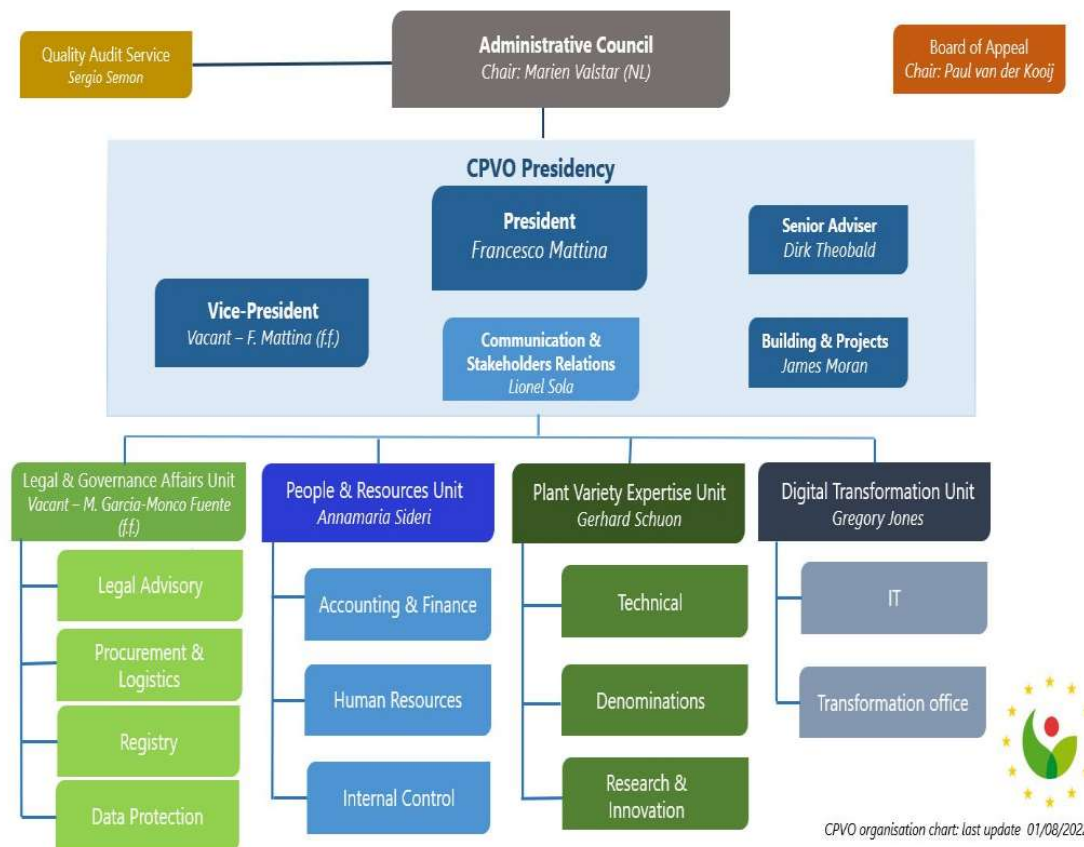
Study: Impact of the CPVR system on the EU economy and the environment

CROP	GROWTH RATE	CROP	GROWTH RATE	CROP	GROWTH RATE
Peach	2.20	Wine/Grape	1.59	Raspberry	1.57
Strawberry	2.22	Apricot	3.79	Plum	3.49
Apple	2.28	Blueberry	2.42	Cherry	1.48

**Table 3.6.** Innovation-induced yield growth rates for fruit in the EU between 1995 and 2019 (per cent per year)



# COMMUNITY PLANT VARIETY OFFICE





# DEFINITION OF A VARIETY

## VARIETY

- A plant grouping within a single botanical taxon of the lowest known rank
  - Defined by the expression of characteristics that result from a given genotype or combination of genotypes
  - Distinguished from any other plant grouping by the expression of at least one of the said characteristics
  - Considered as a unit with regard to its suitability for being propagated unchanged



# DEFINITION OF A VARIETY

Varieties of all botanical genera and species may be protected if they are:

- Distinct (D)
- Uniform (U)
- Stable (S)
- Complying with Novelty criteria
- Designated by an acceptable Denomination

and if:

- Fees are paid
- The administrative procedure is followed



# VARIETY EVALUATION - DUS TESTING

\*Article 55

1. Where the Office has not discovered any impediment to the grant of a Community plant variety right ... it shall arrange for the technical examination

...

\*Council Regulation 2100/94;



\*Article 55 *Technical examination*

1. ... be carried out by the competent office or offices in at least one of the [Member States](#) entrusted with responsibility for the technical examination of varieties of the species concerned by the [Administrative Council](#)...



*First entrustment decision based on Quality Audit Service recommendation in 2010*

\*Council Regulation 2100/94



## EXAMINATION OFFICES in the EU



Obligation to have living reference collections for majority of fruit crops

In certain cases – testing outside the EU, for example for some exotic fruit crops



# Blueberry

## low chilling in Portugal, high chilling in Poland



Name		NbYears	Closing date	Submission	Quantity Quality
Direção Geral de Alimentação e Veterinária - Headquarters	low chilling/ autumn	4	31 July	September	10 potted plants - well rooted - with at least 3 shoots.
Direção Geral de Alimentação e Veterinária - Headquarters	low chilling/ spring	4	31 January	March	Plant material should be accompanied by a Plant Passport or a Phytosanitary Certificate. It must therefore be free from pests as defined in regulation 2016/2031 on protective measures against pests of plants and its implementing acts for the species to which the variety belongs.
COBORU - Headquarters	High chilling	4	31 July	October	9 potted plants - 2-3 years old - well rooted - with at least 3 shoots  Plant material should be accompanied by a Plant Passport or a Phytosanitary Certificate. It must therefore be free from pests as defined in regulation 2016/2031 on protective measures against pests of plants and its implementing acts for the species to which the variety belongs



# Raspberry

Germany – all types, Poland – Northern European, CA, northern US types

Name	NbYears	Closing date	Submission	Quantity Quality
Bundessortenamt	3	31 December	April	<p>11 plants, potted in 7- 15 cm pots, well rooted or 11 canes, one-year old, well rooted, with a satisfactory number of adventitious buds</p> <p>The plant material must be accompanied by a Plant Passport or a Phytosanitary Certificate. It must therefore be free from pests as defined in regulation 2016/2031 on protective measures against pests of plants and its implementing acts for the species to which the variety belongs. The plant material must also be accompanied by a recognized certificate indicating that the plant material has been lab-tested to give a negative result for:</p> <ul style="list-style-type: none"> <li>- Raspberry Ring Spot Virus (RpRSV) [ELISA]</li> <li>- Raspberry Bushy Dwarf Virus (RBDV) [ELISA]</li> <li>- Black Raspberry Necrosis Virus [PCR]</li> <li>- Raspberry Leaf Mottle Virus [PCR]</li> <li>- Rubus Yellow Net Virus [PCR]</li> <li>- Rubus Stunt Phytoplasma [PCR]</li> </ul>
COBORU - Headquarters	3	31 January	March	<p>20 plants, one-year old, well rooted.</p> <p>The plant material must be accompanied by a Plant Passport or a Phytosanitary Certificate. It must therefore be free from pests as defined in regulation 2016/2031 on protective measures against pests of plants and its implementing acts for the species to which the variety belongs. The plant material must also be accompanied by a recognized certificate indicating that the plant material has been lab-tested to give a negative result for:- Raspberry Bushy Dwarf Virus (RBDV) [ELISA].</p>



# Strawberry



Portugal



Spain



Germany



Poland



# Strawberry

Name	Cultivation type	Nb Years	Closing date	Submission	Quantity Quality
Direção Geral de Alimentação e Veterinária (Headquarters)	fully remontant, day neutral	2	31 December	February	40 plants, packed in such a way as to prevent dehydration.
	non, partial, fully remontant	2	31 August	November	Plant material should be accompanied by a Plant Passport or a Phytosanitary Certificate. It must therefore be free from pests as defined in regulation 2016/2031 on protective measures against pests of plants and its implementing acts for the species to which the variety belongs.
COBORU (Headquarters)	vegetatively propagated	2	31 May	September	30 plants, well rooted. The plant material must be accompanied by a Plant Passport or a Phytosanitary Certificate. It must therefore be free from pests as defined in regulation 2016/2031 on protective measures against pests of plants and its implementing acts for the species to which the variety belongs. The plant material must also be accompanied by a recognized certificate dating less than two months before the delivery of the plant material, indicating that the plant material has been lab-tested to give a negative result for: - Strawberry green petal (SGP-MLO) [PCR], Strawberry Mottle Virus (SMV) [PCR].
Oficina Española de Variedades Vegetales (OEVV)	seed propagated	2			1.5 g seeds, minimum germination capacity 60%.
	vegetatively propagated	2	20 August	October	40 plants, 4-6 weeks old, well rooted. The plant material must be accompanied by a Plant Passport or a Phytosanitary Certificate. It must therefore be free from pests as defined in regulation 2016/2031 on protective measures against pests of plants and its implementing acts for the species to which the variety belongs. The plant material must also be accompanied by a recognized certificate dating less than two months before the delivery of the plant material, indicating that the plant material has been lab-tested to give a negative result for: - Strawberry Mottle Virus (SMV) [PCR], Strawberry Mild Yellow Edge Virus (SMYEV) [PCR], Strawberry Crinkle Cytorhabdovirus (SCrV) [PCR], Arabis Mosaic Virus (ArMV) [PCR], Strawberry Vein Banding Virus [PCR].
Bundessortenamt	seed propagated	2	15 October	December	1.5 g seeds, minimum germination capacity 60%.
	vegetatively propagated	2	31 May	July	30 plants, 4-6 weeks old, potted in 3- 9 cm pots, well rooted. The plant material must be accompanied by a Plant Passport or a Phytosanitary Certificate. It must therefore be free from pests as defined in regulation 2016/2031 on protective measures against pests of plants and its implementing acts for the species to which the variety belongs. The plant material must also be accompanied by a recognized certificate dating less than two months before the delivery of the plant material, indicating that the plant material has been lab-tested to give a negative result for: - Strawberry Crinkle Virus (SCV) [PCR], Strawberry Mottle Virus (SMV) [PCR], Arabis Mosaic Virus (ArMV) [ELISA], Strawberry Mild Yellow Edge Virus (SMYEV) [PCR].



# Orchids and Alstromeria – Naktuinbouw (NL)



Centralised testing



# DUS testing – Attribution Criteria

- the wish of the breeder
  - geographical origin of the variety
  - willingness to carry out DUS tests on behalf of the CPVO
  - existing bilateral agreements/centralized testing
  - total number of applications
  - proximity to the country where the breeder, the applicant or the procedural representative are located
- 
- For a candidate variety where a technical examination has already been organized by an entrusted EO for the species in question at the time of the application at CPVO, the DUS report will normally be taken over from the first authority where the application has been made.





# TESTING PROTOCOLS

- CPVO Technical Protocols (TP) adopted by the Administrative Council
- are based on the relevant UPOV guideline
- are elaborated together with national crop experts
- contain a compulsory list of characteristics
  - Agriculture: 33 TPs
  - Ornamentals: 87 TPs
  - Vegetables: 55 TPs
  - Fruits: 31 TPs
- UPOV Test Guidelines (TG) for species without CPVO TP
- National Guidelines for species without CPVO TP nor UPOV TG

# TESTING PROTOCOLS



Characteristics observed must (UPOV principles):

- result from a given genotype
  - consistent and repeatable in a particular environment
  - variation between varieties
  - precise definition and recognition
  - allows uniformity standards to be fulfilled
  - allows stability requirements to be fulfilled
- 
- *no need to have any intrinsic value or merit*
  - *usually morphological characteristics*
  - *sometimes physiological characteristics (e.g. resistance)*
  - *"yield" as such is not a DUS characteristic*



# Use of CPVO Technical Protocols

<a href="#">CPVO Reference</a>	<a href="#">Common Name</a>	<a href="#">Botanical Taxon</a>	<a href="#">Adopted date</a>
CPVO/TP-022/3	strawberry	Fragaria L.	28 November 2012
CPVO/TP-277/2	blue honeysuckle, honeyberry, haskap	Lonicera caerulea L.	28 November 2012
CPVO/TP-040/2	black currant	Ribes nigrum L.	01 April 2009
CPVO/TP-052/2	red and white currant	Ribes rubrum L. (syn. R. sylvestre (Lam.) Mert. & W. D. J. Koch)	28 November 2012
CPVO/TP-051/2-Rev	gooseberry	Ribes uva-crispa L.	21 April 2020
CPVO/TP-043/2	raspberry	Rubus idaeus L.	19 March 2014
CPVO/TP-073/1-Corr.	blackberry	Rubus subg. Rubus and hybrids	15 November 2006
CPVO/TP-137/2	blueberry	Vaccinium L.	07 October 2021



# Use of UPOV Test Guidelines

- *Annona cherimola* Mill.
- *Carica papaya* L.
- *Castanea crenata* Siebold & Zucc.
- *Castanea* Mill.
- *Castanea x coudercii* A. Camus (*C. crenata* Siebold & Zucc. x *C. sativa* Mill.)
- *Cydonia oblonga* Mill.
- *Eriobotrya japonica* (Thunb.) Lindl.
- *Ficus carica* L.
- *Diospyros kaki* Thunb.
- *Mangifera indica* L.
- *Musa acuminata* Colla
- *Passiflora edulis* Sims
- *Ribes x nidigrolaria* Rud. Bauer & A. Bauer



# Use of National Guidelines

- *Aristotelia chilensis* (Molina) Stuntz
- *Lycium barbarum* L.

# TESTING PROTOCOLS



## Revisions of UPOV TGs and CPVO TPs

### Proposing revisions

#### TWF discussions in 2022 (examples):

- Strawberry prepared by expert from Germany
- Raspberry prepared by expert from Germany
- Blueberry prepared by expert from Australia

#### Future follow up on the CPVO level

- Discussion in experts group
- Adoption of revised protocols by the Administrative Council

Final report

#### Strawberry Ring Test



Bundessortenamt



December 2019

[https://cpvo.europa.eu/sites/default/files/documents/rd\\_final\\_report\\_strawberry\\_ring\\_test\\_final\\_version\\_19dec\\_0.pdf](https://cpvo.europa.eu/sites/default/files/documents/rd_final_report_strawberry_ring_test_final_version_19dec_0.pdf)



# LET's TALK ABOUT MONEY



Basics considerations:

- CPVO is a self-financed non profit organisation
- Payment to examination offices on basis of full recovery of costs
- Costs calculated within cost calculation exercise
- All examination offices are paid the same

VAT 0%

# LET's TALK ABOUT MONEY



Application fee:

450 EUR - on line applications

800 EUR - paper applications

Take-over fee: 320 EUR

Annual fee: 330 EUR

Technical examination in fruit sector per growing period:

- Apple 3 665 EUR
- Strawberry 3 400 EUR
- Other fruit species 3 460 EUR



# **BREEDERS' IMPACT ON THE EU SYSTEM**

## **OBSERVERS IN THE ADMINISTRATIVE COUNCIL**



- CIOPORA - International Community of Breeders of Asexually Reproduced Ornamental and Fruit Varieties
- ESA - European Seed Association
- PLANTUM - Association for the plant reproduction material sector. The members are active in breeding, propagation, production and trade of seeds, bulbs, tubers, cuttings and young plants

# BREEDERS' IMPACT ON THE EU SYSTEM

## **OBSERVERS IN OTHER MEETINGS - Example**



- Purpose of the annual meeting of examination offices is *in essence* to discuss
  - Policies aiming to harmonize technical examinations
  - Cooperation between the CPVO and the Examination Offices
  - Implementation of procedures
- 4 breeders' organisations participate:
  - CIOPORA
  - ECO-PB – the European Consortium for Organic Plant Breeding
  - ESA
  - Plantum

# BREEDERS' IMPACT ON THE EU SYSTEM

## **Representatives in Advisory Boards**



Participation of breeders' representatives in:

- the Audit Advisory Board
- the R&D Advisory Board
- the ad hoc working group IMODDUS

# BREEDERS' IMPACT ON THE EU SYSTEM

## CPVO MEETINGS WITH BREEDERS - Examples



- Annual bilateral meetings with the breeders' organisations
- Participation of breeders' representatives in different CPVO working groups (legal, technical, IT) and seminars
- Participation of CPVO staff in meetings and events organised by breeders' organisations
- Ad hoc meetings with other breeders' organisations (national organisations)
- Meetings with individual breeders upon request
- Presentations to CPVO staff – "Talk of the month"





# CPVO

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