

Technical Working Party for Vegetables**TWV/55/3****Fifty-Fifth Session
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REPORTS ON DEVELOPMENTS IN PLANT VARIETY PROTECTION FROM MEMBERS AND OBSERVERS*Document prepared by the Office of the Union**Disclaimer: this document does not represent UPOV policies or guidance*

1. The Technical Committee (TC), at its forty-seventh session held in Geneva, from April 4 to 6, 2011, agreed to request the Office of the Union to invite experts to submit written reports to the Office of the Union in advance of the Technical Working Party (TWP) sessions in order that a document containing those reports could be prepared by the Office of the Union. The TC noted that TWP experts would be invited to make a brief oral summary of their written report at the session and would also be encouraged to make reports under the agenda item "Experiences with new types and species", as appropriate. The TC also noted that TWP experts would have an opportunity to raise questions concerning matters of interest (see document TC/47/26 "Report on the Conclusions", paragraphs 9 and 10).

2. Written reports were invited by the Office of the Union in Circular E-21/024 of February 23, 2021. The following reports were received by April 29, 2021 (in alphabetical order):

- Members of the Union: Annexes I to VI: European Union, France, Japan, Netherlands, Ukraine and the United Kingdom

[Annexes follow]

EUROPEAN UNION

1. CPVO STATISTICS AND FIGURES

Statistics for 2020

In 2020, the CPVO received 3 427 applications for Community plant variety rights, 651 applicants filed applications for CPVRs. In 2020, the distribution between crop sectors was as follows:

- Ornamental, 1459 applications (42.6%)
- Agricultural, 978 applications (28.5%)
- **Vegetable, 688 applications (20.1%) very similar to last year (682 applications, 19.3%)**
- Fruit, 302 applications (8.8%).

In 2020, the Office granted 2978 titles for Community protection; 29 013 titles were in force by the end of the year. National authorities from all over the world regularly base their decisions on applications for CPVRs on technical examinations carried out on behalf of the CPVO (international cooperation, takeover of reports). In 2020 the CPVO had provided 7743 technical reports to 60 countries. During 2020, the five countries from which most requests emanated were Kenya, Morocco, Colombia, Brazil and Malaysia.

Administrative Council (AC)

The CPVO is supervised by an Administrative Council (AC) comprising representatives of the Member States and the European Commission and their alternates. In 2020, the members of the AC took note of the following:

- The Commission was working on the extension of the duration of protection to 30 years for varieties of asparagus, ornamental bulb species and woody ornamentals.
- Ongoing development of the EU Plant Variety Portal, unique IT-based contribution system to a database for plant varieties in EU.
- It was noted that the EUIPO Observatory responded positively to a CPVO request to make a study on the impact of the EU PVR system on the EU economy. The study will be carried out in 2021.

Invite project

The CPVO participates in the 'Invite' consortium supported by a grant from the call SFS-29 under the Horizon 2020 programme financed by the European Commission. The proposal aims at improving variety testing (both DUS and VCU) in the EU with the help of genotyping, modelling and phenotyping tools. Ten species from the agricultural, vegetable (tomato) and fruit sector are studied in the project. In 2020, an agreement designed by CPVO has been signed by the members of the consortium to define the conditions of access to reference material and raw historical data held by examinations offices. Good progress has been made in all planned tasks despite the lockdown.

International affairs

The CPVO organised a Seminar in Estonia dedicated to Farm-Saved-Seed (FSS) and in particular the functioning of the FSS system in Estonia and the neighboring countries. Such seminar aims to clarify the FSS concept throughout the EU and to encourage cooperation between farmers and breeders on the implementation of the right for information with the view to exercise compliance with the FSS mechanism.

The CPVO participated in several IP Key international outreach activities

- IP Key China: expert training and enforcement seminar
- IP Key LA: On-site events in February; Regional workshop on DUS examination and independence (Col; QAS)

- IP Key SEA: Awareness seminars for accession to UPOV 91
- CARIFI: revision of PVR legislation in Dominican Republic
- OAPI: on-site event in February

VEGETABLE SECTOR

Administrative Council decisions on vegetable TPs

In April 2020, the following technical protocols were adopted by the AC:

- *Brassica oleracea* L. var *italica* Plenck CPVO-TP/151/2-Rev.2
- *Capsicum annuum* L. CPVO-TP/076/2-Rev.2
- *Cucumis melo* L. CPVO-TP/104/2 Rev.
- *Cynara cardunculus* L. CPVO-TP/184/2-Rev
- *Pisum sativum* L. CPVO-TP/007/2Rev.3
- *Solanum lycopersicum* L. CPVO-TP/044/4-Rev.4
- *Spinacia oleracea* L. CPVO-TP/055/5Rev.3
- Tomato rootstocks CPVO-TP/294/1-Rev.4

Statistics

For vegetable applications received in 2020, the CPVO requested 147 technical examinations to be carried out on its behalf and took over 535 technical reports from national authorities, 138 applications were received from non-EU members (Switzerland, Japan, Israel, United States of America, United Kingdom, Republic of Korea and New Zealand). The 10 most important species represent about 82 % of all applications. The table below shows the number of applications for the 10 most important vegetable species for the last 5 years.

Species	2016	2017	2018	2019	2020	Total (1995-2020)
<i>Lactuca sativa</i> L.	192	183	248	180	230	2924
<i>Solanum lycopersicum</i> L.	127	161	116	150	90	1586
<i>Capsicum annuum</i> L.	65	47	47	61	59	694
<i>Cucumis melo</i> L.	80	46	30	64	47	579
<i>Phaseolus vulgaris</i> L.	13	11	27	12	27	547
<i>Pisum sativum</i> L.	13	16	28	28	27	517
<i>Cucumis sativus</i> L.	45	32	37	21	33	468
<i>Brassica oleracea</i> L. convar. <i>botrytis</i> (L.) Alef. var. <i>botrytis</i>	5	1	7	4	17	256
<i>Allium cepa</i> (Cepa group)	25	8	6	10	17	218
<i>Spinacia oleracea</i> L.	7	23	14	6	15	212
Total	572	528	560	536	562	

The vegetable expert meeting

A meeting of vegetable experts was held electronically on 2 and 3 December 2020. The meeting was attended by experts from 11 examination offices, representatives of EUROSEEDS and ECO-PB.

In 2020, the TPs for fennel, leaf beet, melon, water melon, tomato, tomato rootstock, cabbage, leaf chicory and lettuce were partially revised. They all enter into force in 2021. In addition, the group discussed numerous other items on DUS matters: improvement of the publication for the species requirements on the CPVO website (S2/S3 publication), the need of EU Plant Passport and phytosanitary certificates for several vegetable species and plant material, the adoption and publication of national technical guidelines by the CPVO, the use of a new template letter for obtaining reference varieties and the organisation of field expert meetings aiming to discuss and to address specific issues regarding characteristic(s) or aspects of the CPVO technical protocols. In 2020, a working group including Naktuinbouw, GEVES, EUROSEEDS and CPVO discussed the harmonisation of National and CPVO technical questionnaires, starting with lettuce. The outcome of this work has been presented to the participant and was since integrated to the wider UPOV project.

R&D projects: the group received short updates on the advancement of the CPVO R&D projects.

Ongoing project - 'Harmorescoll'

Harmorescoll aims at setting up, at the European level, a coordinated system to give information to interested parties on access to reference materials (isolates, controls and differentials) for performing disease tests for DUS according to CPVO protocols and UPOV guidelines. The project covers disease resistances which are part of the DUS protocols. The project involves examination offices, seed companies and Euroseeds. After the project, the maintenance of the system is planned on a self-financing basis. The project is coordinated by GEVES and Naktuinbouw and is scheduled for 3 years, until February 2023.

Ongoing project - 'International validation of a SNP set to determine genetic distances for the management of tomato reference collection'

The project was agreed for co-funding in February 2019. It aims at validating a set of markers adapted to the management of the reference collections following the French Bean approach. If successful, a follow-up project could be built for the characterization of the whole collections. The coordination is ensured by the Naktuinbouw. All examination offices entrusted for tomato (NAKT, GEVES, COBORU, NÉBIH, INIA, DGAV and CREA) are involved. The Beijing Sub-Center for DUS testing (CAAS) in China as well as the Korean Seed & Variety Service from the Republic of Korea and the Center for Seeds and Seedlings, NARO (NCSS) in Japan participate on their own funding. Euroseeds is also associated to the project. The selected SNP markers will be tested on a common set of varieties and on a set of varieties from each country involved. A specific agreement defining the conditions of access to these materials have been signed by the consortium of partners and consents were requested from the breeders concerned. Results are expected to be available by the end of 2021.

Finalized project - 'Setting up of a database with the descriptions and photos of melon varieties of common knowledge. Setting up of a management system of this database that can be used as a blueprint of comparable future databases'

The project was coordinated by the Naktuinbouw (NL), and included GEVES (FR), INIA/OEUV (ES), UKSUP (SK) and DGAV (PT). It was finalized at the end of March 2021 and allowed to set up a common database designed to contain variety descriptions and photos stored within all of the CPVO's entrusted examination offices for melon. A partnership agreement was signed for the maintenance of the database after the project. Following its recent entrustment for the species, CREA (IT) accepted to join the consortium and will participate to the feeding of the database in the future.

All reports of finalised R&D projects are published on the CPVO web site: <https://cpvo.europa.eu/en/about-us/what-we-do/research-and-development>

[Annex II follows]

GEVES website can be consulted here www.geves.fr

Description files can be found on the website for the varieties listed on the French catalogue. <https://www.geves.fr/catalogue-france/>

You can subscribe to our NEWSLETTER available both in French and in English to receive the latest information on GEVES's expert activities in plants and seeds, at national and international levels. Please subscribe here : <https://www.geves.fr/newsletter-en/>

The activity in the framework of national listing, PBR, and the activity in the framework of DUS bilateral agreements has slightly increased in 2020.

Main activity remains on agricultural species, but during the last past 3 years, GEVES has significantly developed its activity on ornamental species.

Several ornamental genera have been added into the scope of GEVES: Coreopsis, Salvia, Penstemon, Spirea, Hibiscus, Leucanthemum, Echinacea, Escallonia, Astrantia, Ipomea, Iberis, Scabiosa, Chrysanthemum natural season...

In total in 2020, GEVES tested more than 1800 new cultivars for DUS:

- around 1300 new varieties and parental components in the agricultural sector.
Main species tested are maize, wheat, barley, oilseed rape, sunflower, soybean.
- around 250 new candidate varieties in the vegetable sector.
Main species are tomato, melon, lettuce.
- around 200 new candidate varieties in the ornamental sector.
Main species are Hydrangea, Lavandula, Chrysanthemum, Salvia.
- around 70 new candidate varieties in the fruit sector.
Main species tested are apple, pear, peach, cherry, apricot, Japanese plum, vine.

Additional figures can be found on the annual report available on our website.

Concerning vegetables, with a mean at 250 applications for registration at the French Catalogue and for abroad collaborations, the figure is more stable since those last 5 years than previously. However, in 2020, we have had a slight decrease compared to 2019.

Main vegetables species tested remain lettuce, tomato, pepper and melon. Others important vegetables tested are cauliflower, cucumber, squash, carrot, chicory, bean, ... About 35 different species of vegetables are tested every year at the GEVES.

In addition, GEVES is involved in R&D projects on vegetables DUS: set up of an EU database on melon varieties (with the Netherlands, Italy, Portugal and Slovakia), set up of an EU database of SNP markers on tomato, set up of a network of EU initiatives for a harmonized collection of reference materials for lab tests (genetic resistances) in the frame of DUS tests.

The International System of Cooperation is active and efficient. For more information, the international cooperation service of GEVES can be contacted here: Camille.zitter@geves.fr

In 2020, the international cooperation service of GEVES received more than 1100 applications, mainly from the EU but also from all over the world. 70% of the requests are take-over requests and the DUS reports are then sent according to UPOV TGP5.

In addition to that, the French National Office for PBR (INOV) has received 89 applications in 2020, out of which 95% were tested for DUS by GEVES.

INOV is involved in UPOV PRISMA for all genera and species.

Regarding the use of molecular markers, GEVES is using in 2020 in routine molecular markers for the management of reference collection according to UPOV guidance, for maize, sorghum, spring barley.

Projects are being currently led on Oilseed rape and Tomato.

For more information on BMT, please contact: GEVES BIOGEVES rene.mathis@geves.fr.

Regarding the use of disease resistance characteristics, GEVES uses in routine genetic disease resistance characteristics, processed in bio assays, for DUS results. It provides also services, facilities, protocols, identified standards and strains for such activities to Examination Offices and seed companies, all over the world. For more information, please contact: GEVES SNES valerie.grimault@geves.fr.

[Annex III follows]

JAPAN

1. Number of applications in 2020

Year	Number	(2020/2019)	Vegetables and Mushrooms	(2020/2019)
1978 to 2020	35147	-	V: 1908 M:630	-
2019	822		V: 51 M: 19	
2020	713	(86.7%)	V: 49 M: 14	(90.0%)

Top 5 of application for Vegetables and Mushrooms in 2020

Lettuce 14, Tomato 10, Shiitake 5, Pepper 3, Enokitake 3 Total: 63

2. Number of granted in 2020

Year	Number	(2020/2019)	Vegetables and Mushrooms	(2020/2019)
1978 to 2020	28235	-	V: 1543 M: 525	-
2019	591		V: 10 M: 5	
2020	502	(84.9%)	V: 25 M: 28	(353.3%)

3. National test guidelines harmonized with UPOV TGs in 2020

Genera and Species (0)

4. National test guidelines developed for new type of species in 2020.

Genera and Species (0)

Web-site: http://www.hinshu2.maff.go.jp/info/sinsakijun/botanical_taxon_e.html

5. Other.

- ✓ Japan PVP and Seed Act was amended in December 2020. Main items are the followings;
 - In order to protect PBR properly, it was clarified that to export protected propagating materials should be authorized by PBR holders (since April 1, 2021).
 - In order to enable PBR holders to exercise their rights properly, optional exception related to the Article 15 (2) of the UPOV91 will not be applied (since April 1, 2022).
- ✓ Japan continuously provides other UPOV members with examination reports under the Memorandum of Cooperation (MOC). We have agreed the MOC with 15 members at April 2021.
- ✓ Since establishment of the East Asia Plant Variety Protection Forum in 2008, Japan continuously support Forum member's activities and will enhance support to establish effective PVP system consistent with the UPOV Convention by strengthening national PVP system and by contributing to facilitate harmonization of application and examination procedures and to enhance efficient PVP cooperation under the 10-Year Strategic Plan of the Forum. Especially, Japan, Vietnam and other partners are working together on the pilot project to develop a single online application Platform "e-PVP Asia" for submitting one application data to multiple PVP Offices. "e- PVP Asia" includes the function to facilitate cooperation in examination among participating countries (UPOV members and provisional UPOV members), that applicant can select country where DUS test would be done, and the report of the DUS test would be transferred to other countries.
- ✓ Since 2016, based on the Memorandum of Understanding, Center for Seeds and Seedlings, NARO (NCSS) and Naktuinbouw have established Calibration Manuals for DUS technical harmonization. "Calibration manual for chrysanthemum" was finalized in 2020, and a total of 9 Calibration Manuals are

currently available for third country through both of websites.
NCSS and Naktuinbouw agreed to extend the MOU for 3 years, for the purpose of publication and revision of Calibration Manuals, on March 24, 2021.

[Annex IV follows]

NETHERLANDS

NAKTUINBOUW VARIETY TESTING DEVELOPMENTS

- As from April 2020 the DUS team was enlarged with 1 more DUS colleague. One colleague retired. The team now consists of 39 employees, 2 of them are managers, 5 of them work on disease resistance. The Department of Variety Testing includes also a support team, a trial management team and a project team. In total there are 74 employees.
- The Variety Testing Department yearly offers a number of courses around Plant Breeders' Rights and/or Listing. Last year all courses have been provided online via Video.
- For these courses we have a new professional system and software tool: Naktuinbouw Academy. This works very well for E-learning and online courses (see also below in DUS projects).
- From October 30, 2020, Marian van Leeuwen is chairperson of the UPOV-TWV.
- In 2020 Henk de Greef finished his task as chairperson of the UPOV-TWO.
- A stricter hygiene protocol for staff and visitors has been applied in the DUS fields and greenhouses. This is to prevent unwanted plant diseases.
- From June 2020 variety descriptions are linked to varieties in the Dutch Variety Register: <https://nederlandsrassenregister.nl/>.
- We have new laboratory facilities for the preparation of disease resistance tests used in DUS.
- During the COVID-19 crisis, the daily business of the employees of the Variety Testing department is not disturbed. They succeed to do the DUS work at the normal quality level and are also flexible in the contacts with the applicants.
- Applicants more and more use the online systems of UPOV and CPVO for filing their applications for listing and/or plant breeders rights. Nowadays it is possible to apply for Plant Breeders' Rights for all species through UPOV PRISMA as well as for Listing in the Netherlands. Up to now we received a limited number of online applications through UPOV PRISMA. At this moment it is possible to apply for listing/plant breeders rights in the Netherlands for 87 species through the CPVO online system. In 2020 we received 719 applications for Listing/Plant Breeders' Rights in the Netherlands through the CPVO online system. In 2020 51% of the National applications were filed by electronic means, mainly due to a reduced application fee (in 2019 25%).

Number of applications received

In 2020, 2793 applications were received for testing for the first year for National listing, and for National or European Plant Breeders' Rights. Applications of the same variety for Listing as well PBR, in vegetables and in agricultural crops are split in this table.

2020	NL listing	NL PBR	EU PBR	TOTAL
Agriculture	265	94	80	
Vegetable	842	529	131	
Ornamental (incl. trees)		214	638	
TOTAL	1107	837	849	2793

DUS PROJECTS

Below a selection of the DUS projects at Naktuinbouw.

- Digitise
 - Naktuinbouw Academy: a digital training platform. Some of the trainings that were organised in traditional physical meetings are organised now in a digital manner. A good example is the Plant Breeders Rights for Food security and Economic Development training course with Wageningen University. But also internal trainings for PVP-officers of Naktuinbouw are organised this way.

- In 2020 a lot of effort was put into the development of general database systems to harmonise data for the purpose of exchange of controlled data between partners.
- With the help of new tools it will be possible to organise visits to the trials at a distance. Naktuinbouw expects to facilitate this possibility in the course of 2021.
- EU cooperation: Database Melon, Harmorescoll and INVITE
 - An EU database for melon varieties is developed by cooperation between France, Spain, Portugal, Slovakia and the Netherlands. The development is funded by CPVO. In 2021 the project will be finished and continuation in cooperation is expected.
 - Harmorescoll: in this project the reference material for obligatory disease resistance tests will be harmonized.
 - The EU project on the improvement on DUS and VCU testing has started. Naktuinbouw is one of the partners in this program.
- International cooperation. Calibration manuals. Naktuinbouw cooperates since 2016 with NCSS Japan on the harmonisation of Dutch Calibration Books and Japanese Testing Manuals in a 5 years working plan. In 2019, Tomato and Gerbera were discussed. Due to COVID the cooperation for tulip in 2020 was postponed in 2020. In an online meeting in 2021 tulip was finalized. Continuation of cooperation with Japan is agreed.
- Databases: Naktuinbouw develops SNP-databases in French bean, rose, lettuce, union, hemp, tomato and perennial ray grass. Some databases are developed nationally, others in international projects. The projects are funded by amongst others the Dutch board for plant varieties and CPVO.
- Other projects: DUS testing of garlic from seeds; development of DNA markers tests for disease resistance in tomato for *Passalora fulva* (*Fulvia fulva*), Lettuce (LMV); testing of organic varieties;

INTERNATIONAL COOPERATION

- In 2020 only a limited number of PVP projects was carried out.
- In cooperation with CPVO, Naktuinbouw joined the IPKey-project China. Training was organised digitally with direct translation.
- Digital inception mission (14 days) to the Philippines was organised to National Seed Technology Park.
- In April 2021 a 2-year EU twinning project with the Ukraine has started. Latvia is the lead project partner, Poland and the Netherlands (Naktuinbouw) are the junior partners in this project with amongst others a focus on Plant Breeders' Rights.
- In 2021 a 4-year project is started by the Wageningen university on the Nigerian Seed sector. The Nigerian government and Naktuinbouw are involved on the topics of Plant Breeders rights and variety registration.

PVP DEVELOPMENT PROGRAM (TOOLBOX)

- This is a tool to help countries to develop their Plant Breeders' Rights system. The Dutch Ministry makes funds available for the implementation of this program. For more information about this program of possible cooperation please contact: PVPToolbox@naktuinbouw.nl

PLANT BREEDERS RIGHTS FOR FOOD SECURITY AND ECONOMIC DEVELOPMENT TRAINING COURSE.

- More information <https://www.wur.nl/en/show/Plant-Breeders-Rights-for-Food-Security-and-Economic-Development.htm> or contact: l.pinan.gonzalez@naktuinbouw.nl

Naktuinbouw, April 2021

[Annex V follows]

TWV/55/3

ANNEX V

UKRAINE

The expert body of Ukraine is the Ukrainian Institute for Plant Variety Examination, which conducts examination of application documents and field examination of plant varieties (DUS-test, VCU-test).

As of April 20, 2021, the National List of Ukraine has 12,326 varieties / lines / hybrids, of which 2,796 are vegetables and 191 are potatoes.

In 2020, 304 vegetables were entered into the National List of Ukraine, of which:

- Ukrainian breeding 52 pcs.
- foreign breeding - 252 pcs.

[Annex VI follows]

UNITED KINGDOM

Report on the activity of the United Kingdom Plant Varieties and Seeds Office in Cambridge and the examination centres of NIAB, SASA and AFBI. The Plant Varieties and Seeds Office is part of the Service Delivery Directorate of the Animal and Plant Health Agency (APHA), an executive agency of the Department for Environment, Food and Rural Affairs (Defra). Contact details and phone numbers are available on Gov.UK website where all Government departments now have their website details.

<https://www.gov.uk/guidance/plant-breeders-rights#contact-the-plant-variety-rights-office>

Across all the United Kingdom trial stations, approximately 750 candidate varieties were under test for National Listing and/or PBR in the 2020-2021 growing season. Most applications were for cereal crops and winter oilseed rape, but there were also applications for ornamentals, vegetables, field peas, potatoes, field beans, sugar beet, herbage and other fodder crops.

From the 1st January 2021, all United Kingdom PBR and National List applications must be submitted through UPOV PRISMA. So far, the United Kingdom has benefitted from using UPOV PRISMA to process applications and acknowledges the support and cooperation from the UPOV Office to implement and develop this application tool whilst facilitating the United Kingdom system where possible.

Vegetable DUS in the United Kingdom is conducted at SASA, Edinburgh (formerly Science and Advice for Scottish Agriculture but now simply "SASA"). <https://www.sasa.gov.uk/>. For the 2021 growing season SASA will be conducting DUS trials for several vegetable crop species, including, *Allium cepa* L., *Allium porrum* L., *Apium graveolens* L. var. *rapaceum*, *Brassica oleracea* L. var. *italica*, *Brassica oleracea* L. var. *gemmifera*, *Brassica napus* L. var. *napobrassica*, *Beta vulgaris* L. var. *conditiva* Alef., *Daucus carota* L., *Pisum sativum* L. and *Raphanus sativus* L.

Despite the COVID-19 pandemic, DUS trials continued in the United Kingdom during the 2020-2021 growing season. Government health and safety guidance was followed at all times, ensuring the safety and well-being of staff. With suitable adaptation, it was possible to complete almost all trials.

On the international front, SASA Variety Testing staff continue to be fully committed to working with our colleagues in Europe and within UPOV and we continue to be involved in CPVO projects such as 'Harmorescoll' which aims to facilitate access to reference material for performing disease resistance tests within DUS examinations.

The United Kingdom continues to support the UPOV online courses with technical and administrative staff throughout the United Kingdom taking the distance learning opportunities through DL205 and DL305. Colleagues across the United Kingdom have also benefitted from the recently arranged UPOV Technical Working Parties Preparatory Webinars.

Lesley McCarthy, Variety Testing Manager, SASA.

[End of Annex VI and of document]