

**Technical Working Party for Agricultural Crops****TWA/47/3****Forty-Seventh Session  
Naivasha, Kenya, May 21 to 25, 2018****Original:** English  
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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-18/040 of April 10, 2018. The following reports were received (in alphabetical order):

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

[Annexes follow]

DENMARK

TystofteFoundation was established the 1<sup>st</sup> of July 2015, and has acted as technical provider to the Danish Agriculture Agency, since the transfer of entrustment from the Danish Agriculture Agency. The main tasks are providing the necessary technical testing on Danish National List, Plant Breeders Rights and post control in relation to seed certification.

The 1<sup>st</sup> of January 2017 TystofteFoundation received a delegation from the Ministry of Environment and Food, which obligates TystofteFoundation to do not only the technical examinations, but also to have competence to make decisions regarding National Listing, Plant Breeders Rights and Seed Certification as well.

With effect from August 1<sup>st</sup> 2017 the seed certification team at the TystofteFoundation achieved an ISTA accreditation for seed sampling. The certification team will maintain the ISTA accreditation for the official seed samplers as well as for the company seed samplers from companies that do not have their own ISTA accreditation. In the Danish model for seed certification, seed companies can choose to become authorized as seed companies with their own seed samplers, which are trained, tested, authorized and audited annually by the TystofteFoundation.

TystofteFoundation had CPVO audit the 12 of July 2017. Two non-conformities were received, which now have been dealt with corrective action. TystofteFoundation applied for extension of the scope of entrustment with Rye (*Secale cereale* L.), and we are now ready to receive applications in Rye from September 2018.

In the summer 2017, TystofteFoundation began building new office, laboratory and seed store facilities on Tystofte Testing station. The 2.5 mill euro building project will be finished in August 2018.

In autumn 2017, DK participated in providing data sets of oilseed rape to GB in respect to the project on "Thresholds for excluding varieties of common knowledge from the second growing cycle when COYD".

The number of applications and activities are on a stable high level in 2018 with a minor reduction from an all-time high level in 2015.

[Annex II follows]

## EUROPEAN UNION

## Statistics

2017 has been the second highest year in terms of numbers of applications received, 3 422, compared to 3299 in 2016, that are some 4% more applications. In 2017, the distribution between crop sectors was as follows:

agricultural, 818 applications (23.9%); vegetable, 663 applications (+19.4%); ornamental, 1629 applications (+47.6 %); fruit 312 applications (9.1%). There was a decrease of 13% in the agricultural sector.

Close to 20% are applications from Non-EU members. More than 80% of the agricultural applications are take-overs.

In 2017, 2865 new titles were granted. Today, close to 26.000 plant varieties are protected under the EU plant variety right (PVR) system. At the end of 2017, the number of botanical taxa in the CPVO registers increased to 2066.

## Administrative Council

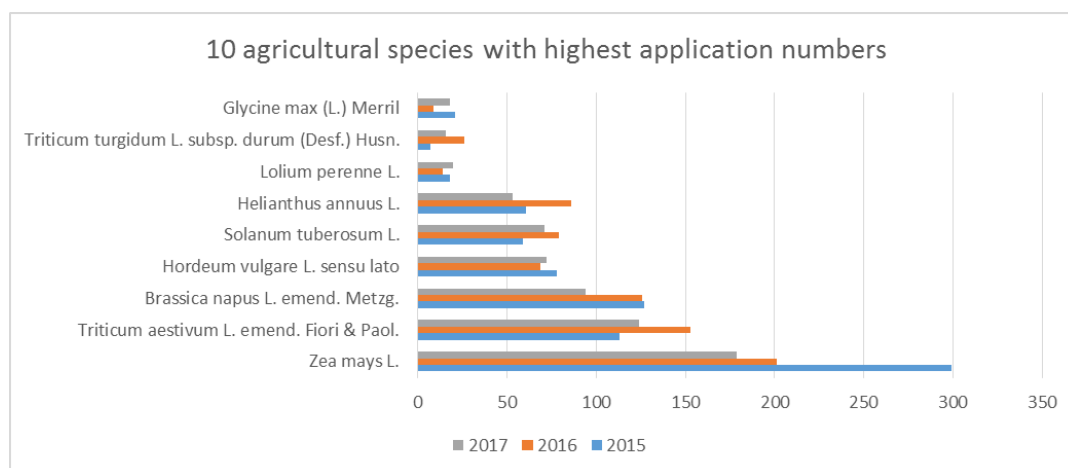
The AC adopted the Strategic Plan for 2017-2021 which states the following Mission: *The CPVO delivers and promotes an efficient intellectual property rights system that supports the creation of new plant varieties for the benefit of the society.*

In 2017, the Administrative Council adopted new CPVO-TPs of the agricultural species Kentucky bluegrass, potato, soya bean, fodder radish, white mustard and pea.

## Brexit

In view of the forthcoming leave of the United Kingdom from the EU, the CPVO had to stop organizing new DUS examinations at the United Kingdom based examination offices. The technical cooperation in DUS testing with the United Kingdom EOs will come to an end with the date of leave (29/03/2019). All species which had been entrusted to the United Kingdom offices for testing have been reattributed to EU based EOs or, for species without current applications, will be attributed following a call for tender.

## Agricultural sector



The agricultural experts meeting (AEM) took place in October 2017. DUS matters in relation to oilseed rape, triticale and maize were discussed as well as CPVO-TPs for the species wheat, barley, sorghum and field bean, discussions on lucerne and cotton were postponed to 2018.

The AEM received further a presentation on the ongoing work of R&D projects potato DB, the finalised work on the continental maize DB, ongoing work on SNPs for oilseed rape and a project proposal for a Durum wheat DB for the management of the reference collection.

## R&D

*The CPVO ad hoc* working group for the integration of molecular data into DUS testing IMODDUS had its second meeting in January 2017. Beside a new R&D project proposal on Durum wheat, the working group discussed the CPVO Strategy paper for Imoddu which has been endorsed by the AC in 2017. It furthermore received presentations on the handling of big data, new breeding techniques and their relation to DUS and possibilities on the cooperation of laboratories. IMODDUS meets every year alternately with the UPOV-BMT working group.

The following R&D project with relevance to the agricultural sector has been approved in 2017 for co-funding:

“Integration of molecular data into DUS testing in durum wheat: Use of a standardized method for the efficient management of reference collections” coordinated by the Austrian Agency for Health and Food Safety (AGES) with partners of the entrusted examination offices from Spain, Hungary, France and Italy.

[Annex III follows]

The activity in the framework of national listing and the activity in the framework of DUS bilateral agreements has slightly increased in 2017.

The plant breeding effort remains important and even in development for some crops regarding the capacity of genetic improvement to contribute to the challenges in the field of protection of environment and health.

GEVES has a new website which can be consulted here [www.geves.fr](http://www.geves.fr)

In total, GEVES studies each year about 1400 new varieties,

- around 100 new candidate varieties, a year, in the fruit sector.
- around 1000 new candidate varieties, a year, in the agricultural sector.
- around 100 new candidate varieties, a year, in the ornamental sector.
- around 230 new candidate varieties, a year, in the vegetables sector.

However, the number of applications for some species decreases in France (for example maize), whereas the number of applications for some other species increases (for example oilseed rape, ornamental and fruit species).

GEVES activity is entrusted by the CPVO. GEVES, as an examination office on behalf of CPVO, receives around 600 requests of results each year including about 60% of take over reports related to field and vegetable crops tested first for national listing. GEVES also sends each year about 500 reports to other examination offices (about 100 examinations and 400 take-overs) and buy about 120 reports from them in the framework of bilateral agreements.

The International System of Cooperation is active and efficient. For more information, the international cooperation service of GEVES can be contacted here: [anne-lise.kouditey@geves.fr](mailto:anne-lise.kouditey@geves.fr)

GEVES has recently gained experience on DUS tests of new species: *Sesamum indicum*, *Chenopodium quinoa*, *Musa acuminata*, *Vanilla planifolia*, *Allium tuncelianum*, *Genista stenopetala*, *Lathyrus sativus*, *Deutzia* spp., *Lonicera* L. var *Emphyllallyx* Maxim., *Brassica rapa* subsp. *Nipposinica*.

GEVES has also started the testing of a high number of new ornamental species, this sector becoming prominent for GEVES activities. The main new genus tested are: coreopsis, spirea, leucanthemum, echinacea, salvia, euphorbia, escallonia...

In addition to that, the French National Office for PBR (INOV) has received 145 applications in 2017 (+50% compared to the previous years), out of which 95% were tested for DUS by GEVES.

GEVES has been highly involved for the last few years in the following topics:

- the use of molecular markers in the DUS tests for the management of reference collections, for the identification and characterization of varieties, for checking of hybrid conformity. It is routinely used in maize, barley, sorghum, and fruit species
- continuous improvement of our methods and protocols, in line with CPVO TPs and CPVO requirements and UPOV guidance
- the exchange of data and files via electronic platforms, accessible to other Examination Offices, to the CPVO, to DUS examiners or to applicants, such as "Sharing the online application of the CPVO", "Exchange electronic documents: B2B platform with the CPVO" and web services from the CPVO Variety Finder
- cooperation between Examination Offices to share common data bases of phenotypic variety descriptions.

Concerning the use of molecular techniques in DUS testing, GEVES was pleased to hold the BMT in La Rochelle in 2017. Six presentations have been made by France to present the current development works on this topic:

- The use of molecular markers (SNP) for maize DUS testing in France (2013 to 2016)
- The use of molecular markers (SNP) for maize DUS testing: Development and official applications to assess distinctness of hybrids varieties
- Use of GBS for Lucerne Variety Distinction
- Test of the potential use of SNPs markers on oilseed rape varieties

- An attempt to use molecular markers for winter wheat reference collection management
- The use of molecular distance as a characteristic?" Assessment of the reference variety model based on GEVES SNP maize data

Following the developments in la Rochelle, GEVES will work on the revision of documents TGP/15 and INF/17.

GEVES uses in routine genetic disease resistance characteristics, processed in bio tests, for DUS results. It provides also services, facilities, protocols, identified standards and strains for such activities to Examination Offices and seed companies, in the world. For more information, please contact: GEVES SNES [valerie.grimault@geves.fr](mailto:valerie.grimault@geves.fr).

[Annex IV follows]

## JAPAN

## 1. Number of applications in 2017

Year	Number	(2017/2016)	Agricultural crops	(2017/2016)
1978 to 2017	32903	-	2368	-
2016	977		76	
2017	1019	(104%)	68	(89%)

Top 5 of application for Agricultural crops in 2017

Rice 29, Japanese lawn grass 7, Potato 5, Wheat 4, Barley 4,

## 2. Number of granted in 2017

Year	Number	(2017/2016)	Agricultural crops	(2017/2016)
1978 to 2017	26382	-	2037	-
2016	942		45	
2017	811	(86%)	40	(89%)

Top 5 of granted for Agricultural crops in 2017

Rice 22, Potato 3, Hop 3, Soya bean 2, Sorghum 2

## 3. National test guidelines had harmonized with UPOV TGs in 2017.

Genera and Species (4)
Pineapple, China Aster, Pelargonium, Salvia

## 4. National test guidelines had developed for new type of species in 2017.

Genera and Species (15)
<i>Alternanthera brasiliensis</i> (L.) Kuntze, <i>Antigonon leptopus</i> Hook. & Arn., <i>Arabidopsis halleri</i> (L) O'Kane & Al-Shehbaz subsp. <i>gemmifera</i> (Matsum.) O'Kane & Al-Shehbaz, <i>Avena strigosa</i> Schreb., <i>Dodonaea viscosa</i> (L.) Jacq., <i>Ipomoea carnea</i> Jacq. subsp. <i>fistulosa</i> (Mart. ex Choisy) D. F. Austin, <i>Leucothoe</i> D. Don, <i>Panicum miliaceum</i> L., <i>Physostegia virginiana</i> (L.) Benth., <i>Pilea depressa</i> (Sw.) Blume, <i>Polianthes tuberosa</i> L., <i>Potentilla sundaica</i> (Bl.) O. Kuntze var. <i>robusta</i> (Franch. & Savat.) Kitag., <i>Rhodanthe</i> Lindl., <i>Syringa</i> L., <i>Triticum turgidum</i> L. subsp. <i>durum</i> (Desf.) Husn.

Web-site: [http://www.hinshu2.maff.go.jp/info/sinsakijun/botanical\\_taxon\\_e.html](http://www.hinshu2.maff.go.jp/info/sinsakijun/botanical_taxon_e.html)

## 5. Other.

- ✓ Japan continuously offers to other UPOV members examination reports at no charge by the Memorandum of Cooperation (MOC) agreed upon. We have exchanged the MOC documents with 14 members at May 2018.
- ✓ Japan had launched MAFF electronic application system (national electronic application system) in March 26th, 2018 to improve convenience for applicants. This system allows users who have user ID and password provided by the PVPO to send application form by electric system. Users are requested to send a Request Form by postal mail to PVPO for obtaining user ID and password in advance. The accepting language is Japanese only. Paper application is acceptable also. We started the MAFF electronic application system for improving effective PVP proceedings in Japan. More information is provided MAFF's website, "<http://www.hinshu2.maff.go.jp/>" (Explanation is available only in Japanese)
- ✓ For encouraging PBR holder to apply overseas applications for registered varieties in Japan, PVP office is supporting PBR holders including setting up the manual for applying overseas and the consultation desk with some financial support for them.
- ✓ Since establishment of the East Asia Plant Variety Protection Forum in 2008, Japan continuously support its activities to facilitate the improvement of the implementation and the harmonization of the plant variety protection system based on the UPOV system in the Asian region.

✓ Naktuinbouw and NCSS have established Calibration Manual for DUS test. Calibration Manuals, which include many photographs explaining how to observe and measure characteristics of varieties will be easy-to-understand reference material for users. This joint activity will result in 11 calibration manuals. Four manuals for Rose (cut-flower type), Carnation, Lettuce and Watermelon were completed and now available on NCSS website as well as Naktuinbouw website.  
"http://www.naro.affrc.go.jp/english/ncss/index.html"

[Annex V follows]



## NETHERLANDS

## Naktuinbouw Variety Testing Developments

From the beginning of 2017 it has been the intention to integrate the 3 DUS teams Ornamentals, Vegetables and Agricultural crops into one large DUS team. This will enhance cross-over of employees between the different sectors. The new structure came into force at the beginning of 2018. During 2017, the group of employees who are involved in a wide range of resistance tests was enlarged and restructured. Resistance is an increasing discussion topic related to DUS, even in Ornamentals.

Close cooperation with the Naktuinbouw Research and Development team is evolving on the use of DNA techniques in the management of variety collections and in description of characteristics as an alternative for morphological observations. In 2017, Naktuinbouw invested in many activities concerning methodology Research, especially in the use of DNA in DUS examination.

Members of the DUS teams were involved in the Training Course DNA Techniques and Variety Identification, which was organized twice in 2017. This Course was developed by the Research and Development team. A wide variety of persons with a background in variety testing (UPOV), certification (OECD) or seed testing (ISTA) participated.

Spring 2017 the first True Potato Seed variety was granted Plant Breeders' Right in the Netherlands.

For the major crops for listing and/or Plant Breeders' Rights, Naktuinbouw has developed calibration books. The calibration book serves as a very practical manual that gives an illustrated explanation of each crop characteristic mentioned in these guidelines/protocols. Calibration books are now freely available on the Naktuinbouw website.

Naktuinbouw has been assigned by the CPVO (Community Plant Variety Office) to carry out DUS tests for 130 extra crops for Plant Breeders' Rights applications in the EU. This is due to the Brexit, as a result of which the CPVO will no longer accept DUS reports from the United Kingdom which are to be issued after March 29 2019. The CPVO redistributed the crops that were only tested in the United Kingdom. The Administrative Council of the CPVO has entrusted Naktuinbouw for the examination of Chrysanthemum.

## Number of applications received

In 2017, 1850 applications were received for testing for the first year for National listing, and for National or European Plant Breeders' Rights (in brackets the difference in numbers with 2016):

Ornamentals	862 (+5)
Agriculture	154 (+18)
Vegetables	834 (+5)
Total	1850 (+28)

A forecast for 2018 is not yet possible, but in the first quarter 505 applications were received, which is 54 more than in the same quarter of 2017.

## Activities for UPOV

- In July 2017 Naktuinbouw hosted the UPOV Technical Working Party for Vegetables, in Leiden and Roelofarendsveen.
- In October 2017 Mr. Henk de Greef was appointed as chairperson of the Technical Working Party for Ornamental Plants and Forest Trees.

## International cooperation

- 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 2018 this has resulted in publication of Calibration Manuals for Lettuce, Rose, Carnation and Watermelon on their respective websites. For 2018, Eggplant and Anthurium are scheduled.
- Colleagues from Ghana, United Republic of Tanzania and Argentina did an internship at Naktuinbouw, respectively with focus on administration around PVP, DUS testing of potato and DUS examination vegetables and ornamentals.

- In 2017 several activities were organised by Naktuinbouw Variety Testing Department and the Department of Agricultural Research (DAR) of Myanmar in the framework of a three years project "Strengthening Myanmar Seed Sector". In 2018 Naktuinbouw received a delegation of Myanmar experts with the aim to let them see how an UPOV 91 PVP system works. There will be close collaboration with other UPOV EA and the United Kingdom examination offices in the training of Myanmar experts.

#### PVP Development Program

This is a new tool to help countries to develop their Plant Breeders' Rights system. The Dutch Ministry makes funds available for the implementation of this program. Naktuinbouw is charged to manage the program where they cooperate with the Dutch Agricultural Counsellors and their staff. They can propose projects aimed at the creation or development of a Plant Breeders' Right system in the territory they work for.

In 2017 many projects were carried out. Some highlights:

- UPOV Seminar United Republic of Tanzania  
27 participants attended a 3 days seminar organised to strengthen the effective implementation of the plant variety protection system in the United Republic of Tanzania.
- Sponsoring 5 candidates to the 2017 PVP course  
During the 2017 annual international PVP course the participation of 5 candidates was sponsored from the PVP Development budget: one participant from India, two from Cuba, one from Viet Nam and one from Indonesia.
- EAPVP forum activity training watermelon in Viet Nam  
From 24 April to 27 April The Quang Ngai (Central Viet Nam) DUS station was visited by a Naktuinbouw expert where a training on DUS test of watermelon was given.
- China request for DUS training  
On request of the Chinese DUS authorities, two training sessions were organised in conjunction with a meeting on the possible benefits of China becoming a UPOV member under the 1991 Convention.
- Mexico; promotion of the 1991 Act of the UPOV Convention  
On invitation of the Agri attaché the Mexican authorities were visited by Naktuinbouw. A great interest for membership to the 1991 Act of the UPOV Convention was encountered. A follow-up (extra) activity in the Netherlands was planned. A Mexican delegation visited the Netherlands to study the effects of membership to the 1991 Act of the UPOV Convention in the Netherlands.
- Indonesia Shallots  
From 25 September to 29 September two Indonesian government officials visited for 2 weeks Naktuinbouw in The Netherlands. This training focussed on two main subjects: Importance and benefits of being an UPOV member. Furthermore, practical training on true seed shallots and seed potatoes was given, in order to try to speed up the introduction of new varieties and the production of high quality seed/tubers.

[Annex VI follows]

UNITED KINGDOM

Report on the activity of the United Kingdom Plant Varieties and Seeds Office in Cambridge and the regional examination centres of NIAB, SASA and AFBI.

The Plant Varieties and Seeds Office is part of the Science 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 web site details.

Across all the United Kingdom trial stations, nearly 1500 candidate varieties were under test for Listing and/or PVR in 2017/18, including 302 winter oilseed rape, 297 cereals, 239 herbage and fodder, >400 ornamentals and the remainder potatoes, field beans, sugar beet, vegetables and kale.

United Kingdom DUS testing complies with CPVO's quality requirements and thus can be used by applicants in any subsequent application for EU PVR. APHA and its TQB's NIAB, SASA and AFBI achieved its Entrustment from CPVO for designated species in October 2016 for the third audit running from 2010.

NIAB is pleased to have partnered with GEVES for the delivery of CPVO/APHA funded project 'Test of the potential use of SNP markers on Oilseed Rape Varieties'. This was a pilot study with a positive outcome with the following key findings:

A set of SNPs were identified that appear useful within the subset of varieties in the pilot study.  
Bulking the samples before extracting DNA gave a similar result to the individuals included in the bulk sample  
DNA extracted from the leaves compared to DNA extracted from seeds gave the same answer. Seeds are the preferred option for this investigation stage as the DNA extraction process is quicker.

The final report will be published by the CPVO and will be available on their website in due course. Discussions are underway regarding a follow on project.

[End of Annex VI and of document]