



TWA/45/22

ORIGINAL: English

DATE: September 26, 2017

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS**Forty-Fifth Session
Mexico City, Mexico, July 11 to 15, 2016****REPORTS ON DEVELOPMENT 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 requested by the Office of the Union in Circular E-16/075. The following reports were received (in alphabetical order):

Members of the Union: Annexes I to X: Denmark, European Union, France, Japan, Kenya, Mexico, Netherlands, New Zealand, Poland, United Kingdom.

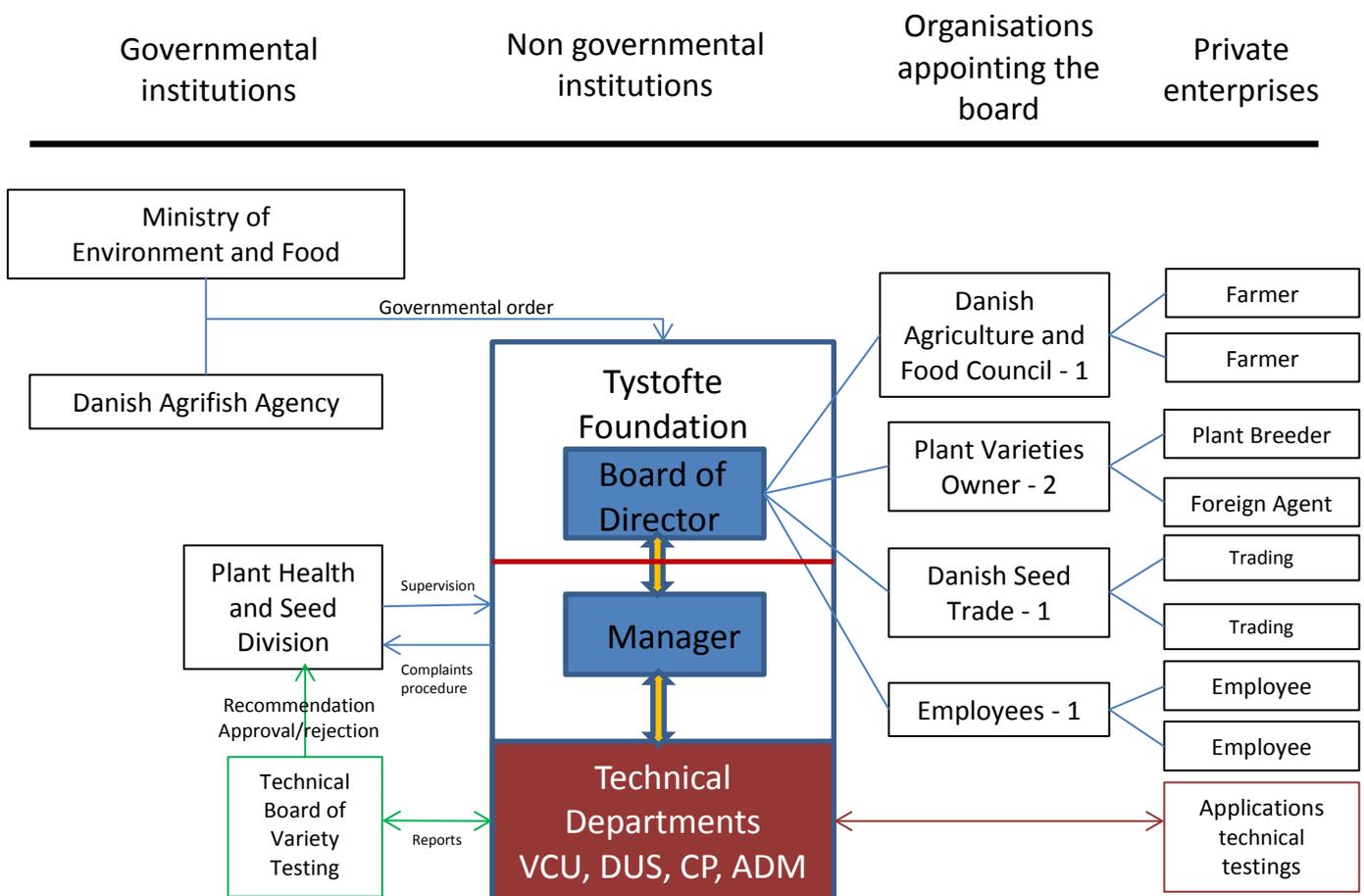
Organizations: Annex XI to XII: European Seed Association (ESA), International Seed Federation (ISF)

[Annexes follow]

The 1st of July 2015 the new organization of Tystofte Foundation took over the responsibility of the technical examinations of DUS, VCU and Post control from the AgriFish Agency in Ministry of Food, Agriculture and Fisheries as the first private public partnership in variety testing in Europe. The Certification, which has remained in the AgriFish Agency, is scheduled to be transferred to Tystofte Foundation by the end of year 2016. The AgriFish Agency will monitor the operation of the foundation on regular basis. CPVO has been consulted on transferring the DUS accreditation for a number of agriculture species from the AgriFish Agency to the Tystofte Foundation.

Tystofte Foundation conducts now the technical examinations and the AgriFish Agency remains in the handling of administrative and legal aspects in the Danish Variety testing.

Organization diagram of Tystofte Foundation:



The organization of the Tystofte Foundation should imply the foundation's mission to be a Stable, Reliable and Independent testing place.

The Tystofte Foundation bought the facilities of Tystofte Testing station and 40 hectares arable land from the Danish government 1 July 2015. Later in the year 2015, the Foundation bought another 40 hectares of land so the Testing Station has now all together 120 hectares including rented 40 hectares.

In the autumn 2015, the Tystofte Foundation have invested in new technical equipment for about 500.000 euros.

The number of applications and activities are on a stable high level in 2016 with a minor reduction from an all-time high level in 2015.

In spring 2016, DK participated in providing data sets to GB Circular E-16/098 in respect to test the new method of calculation of COYU.

[Annex II follows]

EUROPEAN UNION

2015 was a very special year for the Community Plant Variety Office of the European Union (CPVO), as it celebrated 20 years of existence. The CPVO marked the occasion by hosting a successful seminar on the Community plant variety rights system in October.

Statistics

In 2015, CPVO received 3 111 applications for Community plant variety protection, which represents a decrease of 14 % compared to the previous year (3626 applications). After the record numbers in 2014, in part due to applicants wanting to avoid the increase in examination fees for applications filed as from 1 January 2015, a certain decrease was expected. However, it remains to be seen whether the decrease, which was particularly sharp at the beginning and end of the year, was also in part due to the decrease in fees for applications filed electronically which became applicable as from 1 January 2016.

In 2015, CPVO observed a decrease in application numbers in agricultural, vegetable and ornamental crop sectors: agricultural, 93 applications (-9.06%); vegetable, 17 applications (-3.01%); ornamental, 404 applications (-22.6%); in fruit sector, the number of application was maintained (- 1 application (-0.40%).

In 2015, CPVO granted 2 843 titles for Community protection, which represents the highest number ever granted by the CPVO within a calendar year.

New examination fees to be paid by applicants are applicable for files with an application date as from 1 January 2015. The fees for technical examinations have increased in such a way that they now represent 85% of the costs paid by CPVO to examination offices, a reduction of application fees entered into force for online applications as from 1 January 2016 (450 € instead of 600€).

Administrative Council

In the course of 2015, 1 new CPVO technical protocol has been adopted and 3 CPVO protocols revised, the CPVO received applications for 5 taxa of which varieties have not yet been subject to an application to the CPVO.

The Community system entered on 01.01.2016 into a new 3 years cycle of audits and quality entrustment requirements has been revised and approved by the Administrative Council.

Following decisions by the enlarged Board of Appeal of the European Patent Office (EPO), which outlined the limits of what can be patented as regards plant-related innovations, CPVO organised in June 2015 a seminar for the Administrative Council and observers on this subject. As a consequence of this seminar the CPVO reinforced its cooperation with the EPO and organizes a common workshop for patent examiners and CPVO experts in 2016. Another seminar on this topic, which will be offered to a larger audience, will be organised mutually by the CPVO and the EPO in 2017.

The Administrative Council adopted the revised version of the document "CPVO Policy on the status of plant material used for DUS testing purposes" which covers now also DNA samples kept by Examination Offices and laboratories.

Agricultural sector

The year 2015 showed a decrease of 9.06 % in the number of applications in comparison with the year 2014. In 2015, agricultural varieties represented 30 % of all applications. The number of applications received for the year (933) is, however, the second highest ever received in that sector.

As in previous years, maize is the most important species in the agricultural sector, there is still a steady increase over the years in oilseed rape applications. Potato and sunflower applications have significantly decreased compared to previous years while barley applications remain stable. Rice is back in 10th position, replacing pea. The level for durum wheat and for lolium remains low.

Given that the large majority of applications refer to species that are covered by the EU seed directives, a large proportion of applications have already undergone DUS testing when the CPVR application was filed, or the DUS test is, at least, ongoing. This allows CPVO to take over the DUS report from entrusted EOs, in accordance with Article 27 of the proceedings regulation, if it constitutes a sufficient basis for a decision. In 2015, this concerned about 85 % of all agricultural applications. If this is not the case, the CPVO organises a technical examination carried out by an entrusted EO.

R&D

In 2015, the Administrative Council took an important step in the continuous process of improvement of the quality of DUS test with the adoption of a revised R & D strategy for 2015-2020. As part of the strategy, the Administrative Council has adopted the terms of reference for an *ad hoc* working group for the integration of molecular data into DUS testing: Imoddis, with the first meeting held in April 2016. The working group will bring together DUS experts, molecular researchers and plant breeders for a fresh approach to the development and integration of molecular techniques in DUS testing.

Construction of a European Potato database as centralized collection of varieties of common knowledge

The objective of the project is to continue the work on the setup of the EU database for potato. The database used will be GEMMA which has to be adapted to suit the requirements for potato DUS research. Subsequently, data need to be entered. The morphological characteristics, molecular data and light sprout pictures to be included have been agreed already. Further details on varieties, administrative data and morphological data were still under discussion as well as the different agreements which will govern the running of that database.

The EOs will continue to send samples of applications to the labs for molecular profiling. The molecular database will be supplemented with varieties of the EU common catalogue in order to achieve complete DB. The project had a duration of 2 years and will be prolonged until 2017 under the name "Potato_DB III_project".

Creation of a Common Maize Database for DUS studies through a partnership between Czech Republic, Hungary, Slovakia and the CPVO

This project was coordinated by ÚKZÚZ having as partners NEBIH (HU) and UKSUP (SK). The aim of the project was to establish a common maize database for DUS studies through a partnership between the Czech Republic, Hungary, Slovakia and the CPVO. This database should contain harmonized morphological descriptions of maize lines and hybrids according to the CPVO technical protocol from all participating countries. The database will be updated regularly and will be available for electronic consultation for each partner and CPVO. Each partner can thus be in charge of maintaining physically at his premises only the seeds of varieties corresponding to its climatic conditions and not conserved in the other examination offices. During the execution of the project an exchange of information and experiences has taken place with an expert from an EO which is already sharing a maize database. The final report was received in March 2016. The partners will start to use the database on a regular basis.

Impact analysis of endophytes on the phenotype of varieties of Lolium perenne and Festuca arundinacea

This project, initiated in January 2013, was coordinated by the CPVO and the Food and Environment Research Agency (FERA) (United Kingdom), with the following project partners: Bundessortenamt (Germany), GEVES (France) and ESA (breeding companies: DLF Trifolium and Barenbrug). The project aimed at clarifying the possible impact that the presence of endophytes in varieties of *Lolium perenne* and *Festuca arundinacea* might have on the phenotype, and thus on the expression of the characteristics observed during the DUS tests and eventual consequences in terms of quality requirements for material to be submitted for that purpose. The project provided for the assessment of four varieties from each species, with two stages of endophyte infections (0% and 100% endophytes). These varieties have been integrated into regular DUS tests during two growing cycles using the relevant CPVO technical protocol. The final report has been received in February 2016. It states that there is no significant difference on the DUS characteristics between endophyte free material and endophyte infested material.

Based on the absence of clear effects of endophyte presence on the morphological expression of the varieties, the CPVO favours to continue accepting endophyte seed for the DUS test of a variety. As a consequence, the TQ remains as it is, which means inviting applicants to inform on the estimated percentage of infection. A discussion on the outcome and the intentions of CPVO is foreseen during the 2016 CPVO agricultural crop experts meeting.

UPOV TWP meetings at CPVO

In 2015, the CPVO hosted the UPOV Technical Working Party for Vegetables (TWV), in Angers. In addition, the CPVO agreed to host the UPOV Technical Working Party for Fruit Crops (TWF) from 14 to 18 November 2016.

For up-to-date information on the CPVO's activities, please visit the CPVO website, read its newsletter and follow and engage with the CPVO on Twitter: @CPVOTweets

[Annex III follows]

FRANCE

The activity in the framework of national listing and the activity in the framework of DUS bilateral agreements remain globally stable.

The plant breeding effort in France 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.

In total, GEVES studies each year about 1400 new varieties, both for national listing or PBR purposes:

- around 100 new candidate varieties in the fruit sector.
- around 1000 new candidate varieties in the agricultural sector.
- around 70 new candidate varieties in the ornamental sector.
- around 230 new candidate varieties in the vegetable sector.

However, the number of application for some species decreases in France (for example sunflower and maize), whereas the number of application for some other species increases (for example cereals, ornamental and fruit species).

GEVES activity is entrusted by the CPVO. GEVES, as an examination office on behalf of CPVO, receives around 570 requests of results each year including about 2/3 of take over reports related to field and vegetable crops tested first for national listing. GEVES also sends each year about 520 reports to other examination offices (about 130 examinations and 390 take-overs) and buy about 130 reports from them in the framework of bilateral agreements.

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*.

In addition to that, the French National Office for PBR (INOV) has received 119 applications in 2015, out of which 80% were tested for DUS by GEVES.

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

- cooperation between Examination Offices to share common data bases of phenotypic variety descriptions
- 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, sunflower, and fruit species
- continuous improvement of our methods and protocols, in line with CPVO technical protocols, CPVO requirements and UPOV guidance
- 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 online application" (CPVO), exchange electronic documents with a B2B platform with CPVO and web services from the CPVO Variety Finder.

Considering recent recommendations and discussions at UPOV, GEVES supports:

- optimization of DUS reference collections and especially:
 - o organization of DUS reference collections in three levels: theoretical, technical and effective collections (TWV/49/29 Add, 2015).
 - o development of international DUS databases managed by Examination Offices collaborating to share data and check distinctness together. This approach reinforces DUS expertise and quality of distinctness criteria.
- development of the use of molecular markers in DUS examination, as a complementary element, and in the control of conformity of DUS material and materials from granted varieties.
- optimization of the duration of the DUS examination: consider the one DUS cycle examination approach as operational as soon as DUS criteria and reliable description are satisfied. In this area, the use of molecular markers, as a complement, could be evaluated as a help to shorten the examination.
- revision on how to assess uniformity by off types on the basis of more than one growing cycle or on the basis of sub samples.

JAPAN

1. Number of application and granted in 2015

(1) Number of applications

Year	Number	(2015/2014)	Agricultural crops	(2015/2014)
1978 to 2015	30959	-	2224	-
2014	1,018		57	
2015	912	(90%)	67	(118%)

Top 5 of application for Agricultural crops in 2015

Rice 26, Potato 8, Sesame 7, Ryegrass 4, Barley 4

(2) Number of granted

Year	Number	(2015/2014)	Agricultural crops	(2015/2014)
1978 to 2015	24629	-	1952	-
2014	863		93	
2015	847	(98%)	54	(58%)

Top 5 of granted for Agricultural crops in 2015

Rice 25, Sugarcane 6, Maize 5, Soybean 3, Tea 3

2. Japanese national test guidelines had harmonized with UPOV TGs in 2015.

Genera and Species (4)
Agapanthus, Kumquat, Sweet potato, Mandevilla

3. Japanese national test guidelines had developed for new type of species in 2015.

Genera and Species (21)
<i>Albuca spirillis</i> , <i>Apios Americana</i> , <i>Carex trifida</i> , <i>Cercis</i> , <i>Chasmanthium latifolium</i> , <i>Erysimum</i> , <i>Escallonia laevis</i> , <i>Euphorbia amygdaloides</i> and <i>E. characias</i> , <i>Jacaranda</i> , <i>Leucothoe fontanesiana</i> , <i>Lysimachia clethroides</i> and <i>L. barystachys</i> , <i>Magnolia xsoulangeana</i> , <i>Mesembryanthemum crystallinum</i> , <i>Musa acuminata</i> and <i>M. x paradisiaca</i> , <i>Myosotis</i> , <i>Polyscias fruticosa</i> , <i>Prostanthera</i> , <i>Sambucus nigra</i> , <i>Stemona japonica</i> , <i>Uncinia rubra</i> , <i>Viburnum opulus</i>

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

4. Other

- ✓ The new administrative procedures of Japan adopted to facilitate the exchange of DUS test reports between Japan and other UPOV members and that, as a result, DUS test reports would be provided free of charge for those UPOV members with which they have a memorandum of cooperation (MOC). We have exchanged the MOC documents with 7 member states at 13 May. If you have an interest in this cooperation, please contact Japanese participants or Japanese PVP Office.
- ✓ National Center for Seeds and Seedlings(NCSS) had their organizational reforming to combine with the National Agricultural Research Institute (NARO) in the last April.

[Annex V follows]

1. PLANT VARIETY PROTECTION

1.1. Situation in the Legislative field

The National Plant Variety Protection in Kenya is provided under the Seeds and Plant Varieties Act (CAP 326) of 1972, which became operational in 1975 and was revised in 1991. Official regulations to guide the implementation of PVP service were put in place in 1994 and the office to administer the PVP was established in 1997 and has functioned under Kenya Plant Health Inspectorate Service (KEPHIS) since 1998. Kenya acceded to UPOV under the 1978 Convention on 13th May 1999. The Seeds and Plant Varieties Act (CAP 326) has been amended to conform to the 1991 Act of the UPOV convention and Kenya acceded to the 1991 Act of the UPOV convention on 11th May 2016.

1.2. Extension of protection to further genera and species

Kenya extends Plant Variety Protection to all plant genera and species, other than algae and bacteria. At the moment, a total of sixty one (61) taxons of selected plant species have been registered for protection in the country.

1.3. Case law

Under the Kenyan Seeds and Plant Varieties Act (Plant Breeders Rights) applications for Plant Breeders Rights are required to be published in the Kenya gazette, to allow those opposing any applications or grant of rights, to make the objections and make representations to the Authorized Officer – KEPHIS. The Authorized Officer determine the hearing of such representations but any applicant aggrieved by the decision of the Authorized Officer may appeal to the Seeds and Plants Tribunal and if further aggrieved by the decision of the Tribunal, final appeal to the High Court.

From the time of inception of the PVP service in Kenya, a total of forty eight (48) applications for PBRs have been contested. Out of these, cases for thirty one (31) applications have been heard and determined by the Authorised Officer. Hearing of representations for the remaining cases for seventeen (17) applications is on-going. So far there has been no case that has been challenged through the Tribunal.

2. Cooperation in Examination

As per UPOV Article 32 on Special Agreements, the PVP office in Kenya has entered into international cooperation with other UPOV Member States and Intergovernmental Organizations in the utilization of the existing DUS examination reports notably,

- European Community – Community Plant Variety Office
- RaadVoorPlantrassen (Board for Plant Varieties) – Netherlands
- The Plant Breeders' Rights Council – Israel
- Commissioner of Plant Variety Rights - New Zealand
- The registrar, National Department of Agriculture – South Africa
- Bundessortenamt - Germany
- Animal and Plant Health Agency-United Kingdom
- Instituto Ecuatoriano de la Propiedad Intelectual-Ecuador
- Instituto Colombiano Agropecuario-Colombia

3. Situation in the Administrative fields

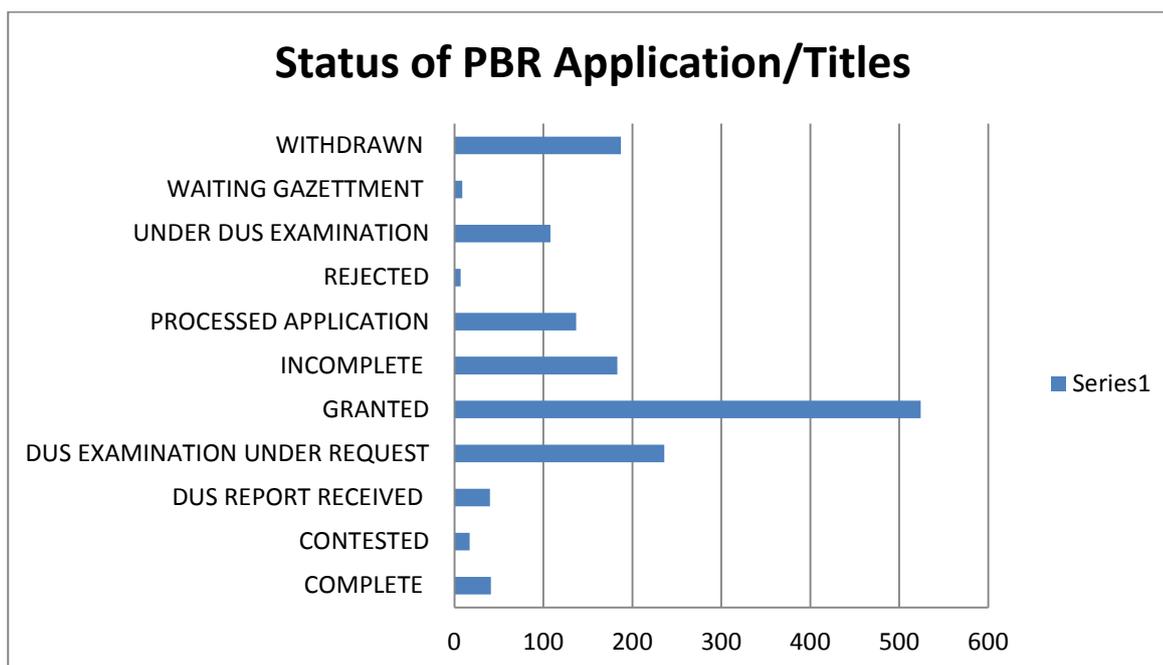
The administrative structure, office procedures and systems within the PVP office in Kenya remains the same. All correspondences need to be addressed to:

The Managing Director
Headquarters, Oloolua Ridge, Karen
P. O. Box 49592-00100, Nairobi
Tel. +254 20 3597201 or +254 20 3597203
Cell: +254 723 786 779 or +254 733 874 141
e-mail: director@kephis.org
website: www.kephis.org

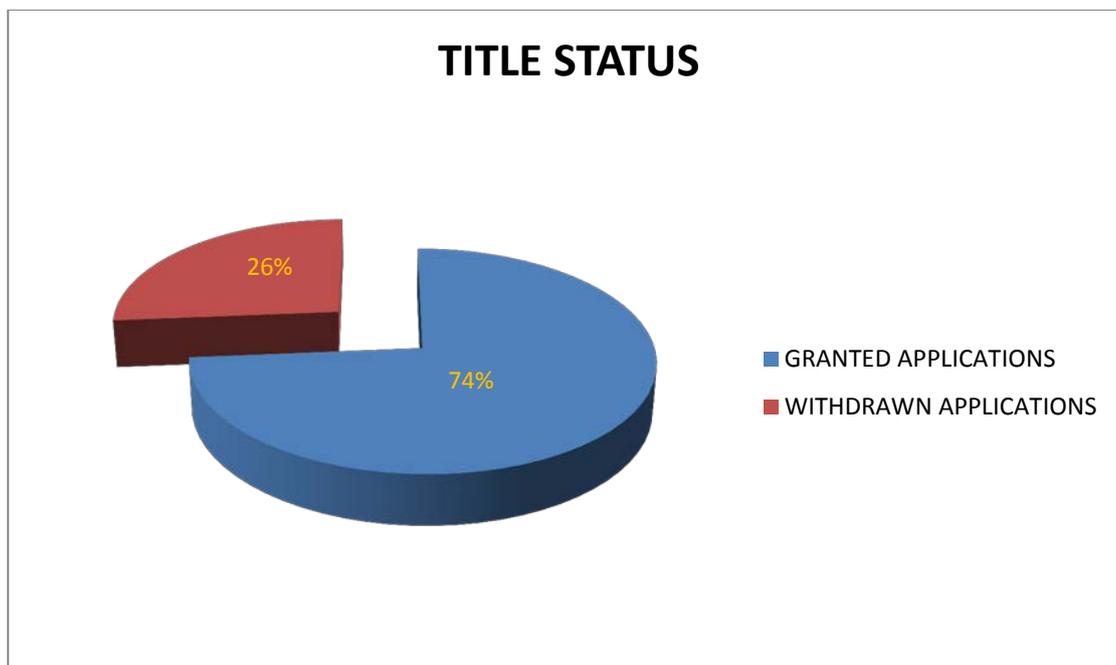
4. Situation in the Technical field

a. Application and Grant of Plant Breeders' Rights

Since the inception of the PVP office in Kenya, a total of 1489 applications for Plant Breeders' Rights have been received. Figure.1.1. below shows the status of such applications.



Reasons for withdrawn applications by the breeders include reduced interest in a variety by consumers and availability of better varieties to the breeder. Those applications either not meeting the novelty requirement and / or fail the DUS testing are withdrawn by the authorized officer – KEPHIS. The incomplete applications are either due to missing supportive documents that must accompany the application or due to non-payment of the application fee by the applicant. Applications approved for granting of PBR titles are those DUS examination report has been finalized and confirmed to be positive but awaits payment of grant for PBR certificate fee by the applicant. The date of payment of this fee becomes the official commencement date of protection of that variety in Kenya. To date the total number of PBR Grants awarded is 415. Fig. 1.2 shows the status of such granted titles.



b. DUS testing

The Office is conducting DUS for Lucerne *Dolichos*, amaranth, vine spinach and a number of traditional vegetables for the first time. National test guidelines for these crops are under preparation. For Lucerne, the UPOV Test Guidelines are being customized to cover testing under tropical conditions.

5. Activities for the promotion of Plant Variety Protection

The PVP office in Kenya has been actively involved in a number of activities for the promotion of Plant Variety Protection in the Country and within the Africa region. Some of these promotional activities includes:-

- Dissemination seminars on awareness creation on PVP services in the country. These seminars targets National Agricultural research institutions, Universities, policy makers, Agricultural extension staff as well as the larger farming communities.
- The PVP office in Kenya is working with other sectors in agriculture to ensure that operating regulations are in conformity with the Seed and Plant Varieties Act and by extension the UPOV Convention.
- Within the region, the PVP office in Kenya has been instrumental in development of the ARIPO PVP framework.
- The PVP office in Kenya has also been involved in exposing delegations from Ethiopia, Burundi and the United Republic of Tanzania to the Kenyan PVP system.

The PVP office in Kenya is also taking lead in the harmonization of variety testing within the East Africa cooperation.

[Annex VI follows]

MEXICO

Registry of Plant Varieties in México (Updated to April, 2016)

In Mexico, plant varieties can be officially registered by two ways, one is applying for registration in the National Catalog of Plant Varieties (CNVV), which does not grant any Plant Breeder's Rights. The other is throughout the application of breeder's title, which grants the right to exclusive use for a period of time. The framework for this is integrated by the Federal Law of Production, Certification and Trade of seeds (CNVV) and the Federal law of plant varieties.

Updated to April 30, 2016, 244 applicants from 30 countries filed 2134 applications for 128 plant species; 842 were for agricultural crops, 513 for ornamentals 475 for fruit, 301 for vegetables, 2 mushrooms, 1 algae.

Currently, there are 244 registered breeders, of which the National Research Institute, Forestry, Agriculture and Livestock (INIFAP) tops the list with 296 applications, followed by Pioneer Hi-Bred International, Inc. and Seeds and Monsanto Agricultural Products, SA de CV 130 each one, Seminis Vegetable Seeds, Inc. with 127, Driscoll Strawberry Associates, Inc. with 126, Meilland International, SA with 72, The Autonomous University Chapingo with 61 and 1192 requests for additional 237 breeders.

On April 30, 2016, 30 countries applied, Mexico tops the list with 729, followed by the United States of America with 701, Netherlands 373, France 86, Germany 53 and other 25 countries with 192 requests.

Are 408 inscriptions by maize, 265 by rose, 141 by strawberry, 74 by sorghum, 68 by cotton and 1178 by other 123 species.

Since 2002 to present, 1509 breeder titles were granted, distributed among the following species: 284 of corn, 156 of rose, 102 of strawberry, 55 of cotton, 53 of sorghum and 859 between other 95 species. From the total of 1509 titles given to crops breeder, to April 30 to 2016, remain in effect 1289 (85.4%).

Agricultural Crops

On April 30, 2016, 842 applications were submitted by 77 applicants from 10 countries, Mexico with 565, United States of America with 225, Netherlands 22 (potatoes), Israel 11 and others six countries with 19 applications. 607 breeder titles were granted, where 506 remain in force, 88 were revoked and 13 passed into the public domain.

842 applications concerning 40 species, the most important, because of the number of applications are: 408 corn, 74 from sorghum, 68 from cotton, 51 from wheat, 49 from potato, 43 from bean and 149 from other 34 species.

Nowadays, from the 77 registered breeders, the National Research Institute, Forestry, Agriculture and Livestock (INIFAP) tops the list with 246 requests, followed by Pioneer Hi-Bred International, Inc. and Monsanto with 130 each one. Dow AgroSciences 44, Delta and Pine Land Company 25, and other 72 breeders with 267 applications.

The 506 titles in force represent 60% from de 28 species in total, the most important, because of the number of titles are: corn 235, sorghum 41, wheat 37, cotton, beans and potatoes with 32 each one. Another 22 species have 97 titles in force.

The Breeder Titles in force are distributed in eight nationalities, Mexico with 366, United States of America with 102, and other six countries with 38. Finally, INIFAP tops the list with 159 titles, followed by Monsanto with 69, then Pioneer with 58, Dow Agro sciences with 29, Novasem Innovations with 21 and other 49 breeders with 170 breeder certificates.

[Annex VII follows]

Written report of the Netherlands UPOV 2015/2016

Applications for plant breeders' rights and/or registration	2015	2014	2013	2012
Ornamentals				
Dutch plant breeders' rights	204	171	224	199
European plant breeders' rights	628	707	756	631
Total	832	878	980	830
Agriculture				
Listing	292	272	267	242
Dutch plant breeders' rights	112	92	79	81
European plant breeders' rights	57	5	5	2
Total	461	369	351	325
Vegetables				
Listing	684	640	663	592
Dutch plant breeders' rights	482	435	440	356
European plant breeders' rights	2	89	107	42
Total	1168	1164	1210	990

In general, in the period 2012-2015, the total number of applications in Ornamentals was more or less stable, and clearly increased in Agriculture and Vegetables.

UPOV activities

- Participation in the UPOV electronic application project:
Since summer 2015 two colleagues of the DUS team, as well as members of Naktuinbouw IT-staff are involved in the development of a UPOV electronic application system. The release is foreseen early 2017.
- UPOV tutor Distance learning Course 205 and 305:
Since the start of the Distance Learning Courses Naktuinbouw staff is involved in the tutorship of both courses.
- The Dutch example of how to interpret ownership of DUS samples is now in discussion with UPOV.

Trainings on Plant Variety Protection (PVP):

- In 2015 the department of Variety Testing hosted 4 internships. We received colleagues of Chile, a Canada, New Zealand and Italy. Working together with Naktuinbouw colleagues is highly appreciated by our guests. For everyone the exchange of knowledge with foreign colleagues has been proven to be very useful.
- In the framework of ongoing cooperation with China a practical PVP course was given to more than 50 participants in Hainan, November 2015. In May 2016 the new Division chief of PVP division Mr. Cui Yehan, paid a visit to Naktuinbouw.
- In February this year a Taiex training was given in Serbia. One of the subjects was DUS testing, for which a colleague gave a presentation.
- In July 2015 Naktuinbouw visited Ukraine in the framework of the intergovernmental project to benchmark DUS testing between Ukraine and The Netherlands. The points of attention during this meeting were: improvement of the throughput time (process time) of an application for listing and/ or PBR in Ukraine; improvement of the cooperation in DUS testing between Ukraine and NL; infringement matters. There were 35 Ukraine participant joining the meeting.
- A ten days training on PVP was given in May 2016 in Rwanda.

Other trainings in the near future are foreseen, among others in Myanmar.

Submission of Dutch national applications via the online system on CPVO-website

As from January on it is possible to submit online applications for listing in The Netherlands (Board for plant varieties) or France (Variety and Seed Study and Control Group, GEVES) and/or plant breeders rights on behalf of the Community Plant Variety Office of the European Union (CPVO), GEVES or Dutch board for plant varieties. The online system is available on the website of the CPVO (<https://www.plantvarieties.eu>).

This online system has been developed in cooperation between CPVO, GEVES and Naktuinbouw and has recently become available. It concerns a system which is operating separately from the already existing online system of the CPVO for the submission of applications for European plant breeders' rights.

With this system it is possible for applicants to submit efficiently their applications and submitted information can easily be re-used. After the applicant has filled in the application via the online system, the application will be submitted automatically to the concerned authority. The applicant will receive a confirmation of the submission.

At this moment it is possible to submit national applications for listing and/or plant breeders rights in the species tomato and lettuce. Other species will become available in the course of 2016.

Resistance in Ornamentals

Based on the experience in vegetables, under supervision of Plantum in 2015 a discussion with companies in Ornamentals was held about possible joint initiatives in the framework of resistance breeding in Ornamentals. This focuses on development of resistance tests, but also on denominations and the availability of isolates. Up till now, there is no experience with co-operation in this area.

Register ornamental crops as a vegetable? Yes!

We regularly get questions about whether it is obligatory to list pot-tomatoes, mini-peppers, ornamental pumpkins etc.

The answer is: yes, varieties that are edible, even if sold as ornamental product have to be registered as a vegetable variety in the EU common catalogue. Only if the variety cannot be used as a vegetable, there is no obligation for registration.

The background is laid down in EC Directive 2002/55 article 2.1. b, which gives the definition for species that are subject to registration:

Vegetables: plants of the following species [then follows a list with species] intended for agriculture or horticulture with the exception of floriculture.

The fact that the plants are edible gives the horticultural destination.

Yearly discussion and evaluation with applicants

In the vegetable sector, there is already the possibility to exchange information about pending (national) applications and to discuss general topics during a yearly meeting between the applicant and the variety testing department. This exchange of information and the discussions are very useful to promote the process. The ornamental sector is also invited for these useful yearly evaluations.

New Naktuinbouw-flyers

Naktuinbouw has developed two glossy flyers (both in English and Dutch: One with frequently asked questions and their clear and short answers, and one with an instructive explanation of the frequently used terms in Plant Breeders' Rights and what the exact tasks are of Naktuinbouw in this topic, what the Name List of Varieties entails, what function the Trademark Law and the Patent Law have and what the meaning of frequently used technical terms is.

International Cooperation

- There were already contracts with GEVES in France and with UKZUZ in the Czech Republic to share work. There is now also a contract signed with UKSUP in Slovakia. Through parallel testing in both Roelofarendsveen as well as in Slovakia it is possible to register new varieties in sweet maize within one growing season.
- At the end of last 2014 the Republic of Korea signed a Memorandum of Understanding (MoU) with the Korean Seed and Variety Service (KSVS). Now the possibilities to cooperate together in DNA database for DUS testing is explored. The first crop to test possible cooperation is lettuce. Exchange of knowledge is another point of focus. One of the employees of KSVS followed the international Plant Variety Protection (PVP) organised by Naktuinbouw. From 12-16 October 2015 3 employees of KSVS studied the techniques Naktuinbouw uses in the department of variety testing as well as in the laboratories. KSVS has invited Naktuinbouw to send an employee too KSVS to study DUS registration in Algae in the Republic of Korea.
- A project concerning a shared database of melon varieties, financed by CPVO, has been started last year. Spain, France, Slovakia and the Netherlands participate. The goal is a living and complete, user friendly database.
- On the seed shallot issue, CPVO, France and the Netherlands continue to cooperate to find a solution to divergent approaches on this issue. CPVO states that is confident that ultimately, through close cooperation, a solution will be found. Bilateral tests will start in 2016.
- The DUS research for flax was transferred to France.

Projects (selection)

Several new crops are being introduced for DUS in agricultural crops. In 2016 we have received 6 applications for medicinal hemp (with increased CBD content). Growing and possessing plant material of this crop requires a special permit as an exemption of the Dutch Opium Act. The procedure for obtaining such a permit has been started and hopefully this autumn the DUS research can start. Growth of these varieties is only allowed in a confined space. Furthermore, in 2016 two applications of potatoes propagated by seed (TPS) are being tested for DUS, which are the first in the EU.

Naktuinbouw is one of the partners in a project co-funded by the CPVO on the construction of a potato database containing both DNA profiles as well as morphological descriptions. In this project all nine CPVO entrusted examination offices for potato, the CPVO and ESA join forces. While this project focuses on European varieties, Naktuinbouw is also trying to expand the DNA database with varieties from outside the EU.

Effort is being put in development of procedures combining DNA profiles and morphological traits in DUS testing of perennial ryegrass (*Lolium perenne*).

Naktuinbouw is, together with foreign partners, involved in the development of an international DNA-database for *Phalaenopsis* and *xDoritaenopsis*.

Naktuinbouw is leading a CPVO funded R&D project to analyze the consequences of proposals made by CIOFORA to enlarge the 'distance' between varieties.

CIOFORA has a concern that protected varieties are closer and closer together, undermining the strength of the protection. In their idea this could be solved by deleting less interesting characteristics from the characteristics used to establish distinctness. Also in some characteristics certain states of expression should, in their opinion be deleted. To study the effect of this approach 50 recently protected varieties in the species rose, apple and pelargonium are re-examined on paper using these amended protocols. The work is ongoing and report is expected in December 2016.

Primed vegetable seeds accepted

Recently Naktuinbouw investigated together with France and Spain and on behalf of CPVO, the possibility of accepting primed seeds, for DUS samples and for samples in the framework of maintenance control. In the meantime it has been determined for seeds of eggplant and tomato rootstock that there is no notable influence on morphology or on resistance characteristics. By keeping primed seeds in a deep freezer in packages with a quantity that is just enough for one trial, the chance for well germinating seeds for a longer period is sufficiently large and dealing with those seeds in this way will be practicable.

Variety descriptions and nomenclature

- Development of SearchPlant:
In 2015 the botanic search engine SearchPlant has been launched. This search portal gives you access to various databases with information on varieties of ornamental plants. It will be further developed in the coming years. See www.searchplant.eu
- List of names of woody plants and perennials
In 2015 Naktuinbouw prepared new editions of the Lists of names of woody plants and perennials. This is the nomenclatorial standard of the EU nursery industry; See www.internationalplantnames.com

Nine jubilees

In August 2015 several jubilees of the department were celebrated by bringing a working visit to the German Plant Variety Office (BSA) in Hannover, the Central Institute for Supervising and Testing in Agriculture (UKZUZ) near Prague and a celebration evening for the jubilees (one of 40 years, four of 25, three of 12,5).

Preparation on retirement Head of Department

To anticipate on the retirement of Kees van Ettehoven in 2017, sessions with the DUS teams have been held to look at the future tasks and structure of the department DUS testing. It is foreseen that the 3 DUS teams on Agricultural crops, Vegetables and Ornamentals, Trees and Fruits will work in one DUS team, with two DUS-managers under a new Head of Department Varieties. The procedure for appointing a new head of has started.

[Annex VIII follows]

NEW ZEALAND

There were 32 applications received for agricultural crop varieties for the period July 2015 to June 2016. This level of applications represents a significant increase over the number of applications received in the previous year (19), and is a return to the level of applications typically received for agriculture varieties in the last few years. Potatoes (31%) and pasture plants (28%) made up the majority of applications in the last twelve months. Varieties bred in New Zealand comprised 56% of applications for agricultural varieties.

For the first time we received applications for varieties of mycorrhizal fungi, with one variety received for each of the following: -

- *Funneliformis mosseae* T.H. Nicolson & Gerd.
- *Claroideoglossum lamellosum* Dalpe, Koke & Tews
- *Scutellospora calospora* T.H. Nicolson & Gerd.

Since 2010 New Zealand has required that all seed submitted for ryegrass and fescue growing trials be substantially free from endophyte. This policy is currently under review in response to comments received from industry groups. In addition the preliminary results from the European Union project on the impact of endophytes on the phenotype of grass varieties indicate that the influence of endophyte on the phenotypical expression of grass varieties is questionable.

New Zealand applicants for pasture species continue to propose additional characteristics to be included in the examination of ryegrass and clover applications. In response the characteristic heading in aftermath will now be examined for ryegrass trials when requested by an applicant. The New Zealand Plant Variety Rights Office has commenced several projects investigating the appropriateness of other proposed characteristics for ryegrass and clover.

In response to questions from industry groups a new policy has been developed regarding ownership of submitted plant material and DNA profiles. The current practice is not well defined and required clarification. The intention is to adopt the new policy following final approval from the annual industry contact meeting to take place in August this year.

[Annex IX follows]

TWA/45/22

ANNEX IX

POLAND

National List and PBR

In 2015 Research Centre for Cultivar Testing (COBORU) received 610 applications for a variety addition to the Polish National List (564 for agricultural species) and 97 applications for the grant of Plant Breeder's Rights (36 for agricultural species), 113 varieties of agricultural crops were registered in the National List and 29 were granted at the national level.

At the end of 2015, 2322 varieties of were listed in the NLI and 1128 varieties were granted at the national level.

Co-operation

COBORU continues cooperation in the field of DUS testing with many countries: e.g. Czech Republic, Hungary, Slovakia on the basis of bilateral agreements and conducts DUS test or provides DUS reports upon the request for Austria, Bulgaria, Croatia, Denmark, Estonia, Finland, Lithuania, Latvia, Norway, Russian Federation, Serbia, Slovenia, Sweden, Turkey, the United Kingdom and CPVO.

[Annex X follows]

UNITED KINGDOM

As reported last year, as of the 1st October 2014, the Plant Varieties and Seeds Office has transferred to the Animal and Plant Health Agency (APHA), an executive agency of the Department for Environment, Food and Rural Affairs (Defra). Staff are unchanged but there are new contact details and phone numbers have recently been changed again.

Across all United Kingdom trial stations, nearly 1400 candidate varieties were under test for Listing and/or PVR in 2015, including 323 winter oilseed rape, 275 cereals, 210 herbage and fodder, >400 ornamentals and the remainder potatoes, field beans, sugar beet, vegetables and kale.

The United Kingdom DUS testing complies with CPVO's quality requirements and thus can be used by applicants in any subsequent application for EU PVR.

AFBI is exploring options to move its ryegrass and white clover DUS testing to a new site. It is working on a business case for the various options which will then be discussed with plant breeders and other interested parties. The possible site move has been prompted by reorganisation in AFBI and a need to manage costs. AFBI is committed to maintaining the quality and reputation of its DUS testing.

NIAB hosted the UPOV Technical Working Party for Ornamentals in September 2015, on behalf of the United Kingdom Department of Environment, Food and Rural Affairs (Defra). Over 60 delegates and observers attended; development of Technical Guidelines was facilitated by a glasshouse technical session where documents could be discussed alongside a wide selection of varieties of each species.

Adrian Roberts from BioSS (in Scotland) is currently the Chair of the TWC and will join the current TWA session via WebEx to facilitate TWA-TWC discussions on approaches to the assessment of uniformity.

Over the summer of 2015 NIAB was pleased to welcome several colleagues from the Korea Seed and Variety Service for training in seed and variety related matters.

The United Kingdom is encouraged by the new sense of impetus for molecular techniques as seen from the recent BMT in Russia and the CPVO IMODDUS initiative and is actively looking to move things forwards in this direction. They are partners with GEVES for a proposed pilot project to investigate the use of SNP's the management of the WOSR reference collection and will be submitting concept notes in other areas to CPVO for funding consideration shortly.

To manage the increasing workload in DUS, the United Kingdom routinely look for ways to innovate the process and are currently investigating the greater use of remote sensing techniques using both fixed platforms and images captured using aerial techniques. They would welcome any exchange of views/experience in this fast developing area.

[Annex XI follows]

EUROPEAN SEED ASSOCIATION (ESA)

The ESA 2016 Annual Meeting took place in Vienna and was attended by a record number of participants of 950 persons. Mr. Nigel Moore (KWS) was elected as New ESA President for the next 3 years replacing Mr. Gerard Backx (HZPC). Mr. Michael Gohn (AT) was re-elected as Chairman of the ESA Section for Cereals and Pulses (SCP); Mr. Jens Holstborg was re-elected as Chairman of the Section for Fodder crops and Grasses (SFG); Mr. Claude Grand was elected as Chairman of the Section Maize (SMA); and Mr. Jorg Renatus was re-elected as Chairman of the Section for Potatoes (SPO).

ESA is working on many horizontal items of importance for the European Seed sector:

- Plant Health. Following the adoption of the revised Plant Health Regulation in Trilogue we are now working on the secondary legislation, a process which will take quite some years. Due to the increased importance of Plant Health in trade ESA is in the process of hiring a Manager Plant Health to strengthen the ESA team on this point to the benefit of ESA members.
- Organic Production. The draft Regulation on Organic Production is in trilogue discussion between the Commission, the Council and the European Parliament. Some 7 articles are important for the seed sector including provisions on a definition of organic breeding, heterogeneous material, organic production of mother plants (basic seed) and the exclusion of certain breeding techniques. ESA is lobbying against the introduction of these provisions which would be to the detriment of the organic seed sector. It is expected that the negotiations on the draft Regulation for Organic Production will be concluded under the Slovak Presidency in the 2nd half of 2016.
- New Breeding Techniques. The Commission was expected to publish a guidance document on NBT by September 2015. The publication of this document has been postponed several times and is now foreseen to take place by the end of 2016. Some of these techniques are already being applied by breeders therefore there is an urgent need for clarity.
- Nagoya protocol. In the beginning of the year, ESA has organised a Workshop for ESA members regarding the obligations for seed companies connected to the implementation of the Nagoya protocol. Although the Regulation has entered into force fully in October last year, the implementation in EU Member States is not clear. The workshop was well received and will help to improve the ESA Guidance document on best practices will be further improved until the end of the year.
- Biochemical and Molecular Techniques in DUS testing and seed certification. The application of BMT techniques in the handling of reference varieties in relation to DUS testing as well as the possible use in seed certification is getting increasingly important. Presentations in CPVO meetings (Immodus Working Group – Implementation of MOlecular techniques in DUS testing) as well as UPOV (UPOV/BMT) in the first half of 2016 make this clear. In addition, discussions on BMT are ongoing on the level of OECD and ISTA. ESA is actively involved in these discussions and in principle supports the use of BMT for the assessment of Essential Derivation and variety identification. ESA members however are of the opinion that depending of the crop care has to be taken regarding the use of these techniques for varietal purity (Uniformity). Clearly a seed lot should not be rejected solely on the basis of BMT methods.

To better inform the outside public regarding ESA and the activities in the different ESA crop sections, factsheets have been developed containing a description of the crops concerned, their respective markets related to the commodities produced from this seed, developments in relation to Plant Breeding as well as a description of the seed sector active in the different sections. The factsheets related to agricultural crops can be found here:

SCP: https://www.euroseeds.eu/system/files/publications/files/esa_16.0117_scp_factsheet.pdf

SFG: https://www.euroseeds.eu/system/files/publications/files/esa_16.0116_sfg_factsheet.pdf

SMA: https://www.euroseeds.eu/system/files/publications/files/esa_16.0118_sma_factsheet.pdf

SOF: https://www.euroseeds.eu/system/files/publications/files/esa_16.0119_sof_factsheet.pdf

SPO: https://www.euroseeds.eu/system/files/publications/files/esa_16.0120_spo_factsheet.pdf

After being employed for 12 years, B. Scholte, ESA Technical Director, has decided to leave ESA as from October 15. As from November 1, B. Scholte will return to the Netherlands to take over the position of Head of the Department Variety Registration in the Nak-Tuinbouw. ESA is in the process of hiring a Technical Manager Plant Breeding and Variety Registration, which will apart from other duties take over his tasks in relation to technical matters in UPOV. Further information can be found here:

<https://www.euroseeds.eu/esa-recruiting-technical-manager-%E2%80%9Cplant-breeding-and-variety-registration%E2%80%9D>

Lastly, the 2016 ESA Annual Meeting will take place from October 9-12 in Rome (Italy).

[Annex XII follows]

INTERNATIONAL SEED FEDERATION (ISF)

Issues related to UPOV

In the past year ISF closely followed the development of the various UPOV technical working groups and also the horizontal topics were put forward for discussion in the Council and as well as in the Administrative and Legal Committee.

The issues concerning UPOV Technical Working Party for Vegetables are part of the overall work of the ISF Vegetable and Ornamental (VO) Section and whenever there is an issue or a need for stronger involvement also at a political level the VO Section will put this on the Agenda. Our objective is to improve the flow of information among the experts, to increase the number of active participants to achieve wider representation of the industry. ISF outreached to the national and regional associations to achieve a better coordination and representation of the global seed industry at the level of UPOV and other international organizations.

ISF continuously support the development of the Electronic Application Form. The new system will allow breeders to apply for PBR in multiple countries and will increase the efficiency of obtaining PBR. Electronic Application Form has been tested by seed industry experts. Monsanto, Pioneer, Rijk Zwaan, Syngenta, Bayer, Limagrain are taking part in the project on behalf of ISF. Under the leadership of the ISF Secretariat, phone calls and email exchanges with these companies ensure that industry efforts are aligned.

Benefiting from the new web-based template for commenting the Test Guidelines under revision ISF submitted numerous comments to the Wheat, Soybean, Cotton TGs. We believe that our inputs are useful and contributes to the improvement of the Test Guidelines for the conduct of test of the listed crops.

ISF has broadened the scope of its activity. The mushroom and spawns companies have expressed their wish to work with and be represented by ISF in front of the international organizations. We created a special group for them within our structure. The group has already started working and was very active commenting the Agaricus TG under revision. Their experts participated in the UPOV TWV meeting in Brno last month as a part of the ISF delegation.

General issues related to plant breeding innovation and IP rights

Based on our new vision and mission ISF worked out a clear new strategic plan 2016-2020. Fostering plant breeding innovation, and implementing effective intellectual property rights are among the major objectives of ISF:

Plant Breeding Innovation

Industry wants to drive alignment among governments on the criteria used for the scope of those categories of plants developed through the latest breeding methods. The key success factor still remains associated with technological developments and the innovation of new and improved seeds. Without equitable access to these technologies, we cannot operate on a level playing field. In 2015 we have stepped up our efforts to engage with national/regional associations and stakeholders to progress in this direction.

- ISF produced and published an agreed statement on plant breeding innovation setting out the ISF position, which provides a foundation for the presentations that speakers deliver worldwide on our behalf.
- ISF established a dedicated Plant Breeding Innovation Communications Working Group comprising Communication Managers from national/regional associations and industry who have collaborated on the production of FAQs that will be agreed at the 2016 World Seed Congress and published on the ISF website.
- ISF produced a concept paper on 'Consistent Criteria for the Scope of Regulatory Oversight' and a framework.

Intellectual Property Rights

One of ISF strategic objectives in this area is to facilitate cooperation between countries in order to simplify procedures for plant variety protection at an international level. As the first step ISF put in place a detailed survey to get the full picture of the industry's needs.

On the other hand it is equally important for our organization to support members in implementing effective intellectual property rights in their countries. Therefore ISF finalized the long awaited 'Royalty Collection Study for Soybeans' which was presented at the 2016 World Seed Congress. The study attempts to relate the efficiency of royalty collection in each state to the prevailing IP protection mechanisms, enforcement tools and other measures in place. The relationship between the efficiency of royalty collection and the number, type of IP protection mechanisms and enforcement measures in place is analysed for each state included in the study.

[End of Annex XII and of document]