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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL WORKING PARTY ON AUTOMATION AND COMPUTER PROGRAMS**Thirty-Fourth Session
Shanghai, China, June 7 to 10, 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 IV: China, France, Japan and the Netherlands.

[Annexes follow]

ANNEX I

CHINA

In May of last year, Chinese Agricultural PVP Office established Administrative and Legal Committee, Technical Committee as well as its six TWPs according to UPOV structure. Among which, Mr. LIU Hong from Guangzhou station was voted as chair of Chinese TWC, Mr. ZHOU Haitao from Gongzhuling station was vice chair, Mr. YANG Kun was coordinate. Chinese TWC started to undertake its missions on developing Chinese PVP database and OA, methods of data processing and analysis, tracking study on UPOV TWC documents and so on. Last year Chinese TWC group held two face-to-face meetings and seven online communications respectively to discuss some basic matters and urgent problems. They worked out a new draft plan on PVP office automation and trial management systems under the theory of “internet plus” and “internet of things” as well as some solutions to operational problems and bugs of current database and OA system. They worked together to process, analyze and input all the field data of 2015. By their efforts, Chinese plant variety description database of common knowledge have 14,920 varieties with descriptions, including 33,245 photos and 2,560 fingerprints.

[Annex II follows]

FRANCE

Report of Variety and Seed Study and Control Group (GEVES), the French examination office

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 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,

- around 100 new candidate varieties, a year, in the fruit sector.
- around 1000 new candidate varieties, a year, in the agricultural sector.
- around 70 new candidate varieties, a year, in the ornamental sector.
- around 230 new candidate varieties, a year, in the vegetables 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 Community Plant Variety Office of the European Union (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 Plant Breeders' Rights (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
- 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 Test Protocols (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.

Considering recent recommendations and discussions at UPOV, GEVES supports:

- the optimization of DUS reference collections and especially
 - . structuration of DUS reference collections in three areas: theoretical, technical and effective collections (TWV/49/29 Add, 2015).
 - . development of international DUS data bases managed by Examination Offices collaborating to share data and check the Distinctness together. This approach reinforces the DUS expertise and the quality of the Distinctness criteria.
- the development of the use of molecular markers in the DUS examination, as a complementary element, and in the control of conformity of DUS material and materials from granted varieties.
- the optimization of the duration of the DUS examination: consider the one DUS cycle examination 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 an help to shorten the examination,
- the revision on how to assess uniformity by off types on basis of more than one growing cycle or on the basis of sub samples

GEVES will contribute to the 2016 host of the TWF in Angers under the behalf of the CPVO.

News about Information Technology (IT) Events

Exchange electronic documents: B2B platform with the CPVO

The aim is to exchange electronic documents between several partners (the CPVO and its examination offices) via an exchange platform hosted on a dedicated server.

We use now this platform for many different purposes: DUS, Value for Cultivation and Use (VCU) or seed certification activities.

We have proposed to do the same thing with the NAKT.

The Office developed recently a 'CPVOBox' web page to access to the platform without having to develop a B2B system. Documents can be dropped to a web page and sent to the CPVO. We plan to develop the same page to provide the same service to our all partners for referenced documents.

CPVO web services "VarietyFinder"

As we have done with the CPOV web service 'CPVOVarietyFinderDenomination' to manage the test of denomination, we are going to use the new web service developed by CPVO called 'CPOVVarietyFinderSearch'. The Web service runs a SQL command to search the trademark into the CPVO database taking into account the input criteria perimeter and specie code.

In return, the user is receiving the list of the denomination returned by the searching tool.

Nothing is recorded into the CPVO database, this web service is the equivalent to the searching tool of the CPVO variety finder web site.

The number of lines returned by the SQL statement is limited to 50,000 lines.

We used this web service as the starting point of new process "Management of the reference collection" that we have developed. This process provides the possibility to centralize and harmonize the way that DUS expert define their own theoretical reference collection for all species managed at GEVES.

[Annex III follows]

JAPAN

1. Number of application and granted in 2015

(1) Number of applications

Year	Number	(2015/2014)
1978 to 2015	30959	-
2014	1,018	(90%)
2015	912	

(2) Number of granted

Year	Number	(2015/2014)
1978 to 2015	24,629	-
2014	863	(98%)
2015	847	

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 spirilis</i> , <i>Apios americana</i> , <i>Carex trifida</i> , <i>Carcis</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. xparadisiaca</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 Plant Variety Protection 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 IV follows]

NETHERLANDS

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

- Development of UPOV electronic application system:
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.

[End of Annexes and of document]