



TWC/29/20

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**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**  
GENEVA

**TECHNICAL WORKING PARTY ON AUTOMATION AND  
COMPUTER PROGRAMS**

**Twenty-Ninth Session  
Geneva, June 7 to 10, 2011**

**REPORTS ON DEVELOPMENT IN PLANT VARIETY PROTECTION FROM  
MEMBERS AND OBSERVERS**

*Document prepared by the Office of the Union*

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 the circular relating to his session. The following reports were submitted (in alphabetical order):

Members: Annexes I to VI: China, European Union, France, Italy, Japan, Republic of Korea, Netherlands, Poland, United Kingdom

[Annexes follow]

ANNEX I

CHINA

Some developments in 2010 in the agricultural sector

1. A new database has been built including the function of office automation and reference collection, and so far data on more than 8,000 varieties have been transferred into this new database. At the same time we developed two professional softwares for dealing with picture analysis and statistical calculation respectively.
2. With the help of the second Sino-Dutch project on strengthening the PVP system in China more than 200 people are trained on different aspects, we modified some of our official documents and to make the work flow efficient and transparent.
3. In order to strengthen the protection of PBR, the Chinese Ministry of Agriculture cooperated with the State Intellectual Property Office and organized a special action on National Intellectual Property Rights Enforcement in 2010. To support this action, we built a special DNA database of Maize and Rice.

[Annex II follows]

ANNEX II

EUROPEAN UNION

Report on activities of the CPVO

In 2010, the CPVO received 2,886 applications for Community plant variety rights (CPVR), this represents an increase of 4.1% compared with the previous year.

The centralized database of variety denominations received a new name, the CPVO Variety Finder, and contains more than 600,000 denominations from national listing and plant variety rights registers. The database was so far available on the basis of a restricted access to national authorities of EU Member States, the European Commission, UPOV and all EU breeders, however recently the President of the CPVO has decided to make it available on its public website; this will be implemented in the near future. The aim of the database is the verification of the suitability of a proposed variety denomination with regard to similarity, but it turns out that it is also a useful tool in order to search for varieties of common knowledge. EU based applicants use this database also to pre-check their denomination proposals for similarity: some big companies in the agricultural sector performed more than 1,000 tests in 2010.

In the beginning of 2010, the CPVO released a project on cooperation in denomination testing with national EU authorities with the aim to reach a greater harmonization of decisions as to the suitability of variety denomination proposals in national plant variety rights, national listing procedures and decisions taken at the level of the CPVO. EU national authorities have the possibility to ask online for CPVO advice to the acceptability of their new denominations. In 2010, more than 2300 advices were issued.

Since 2010, the granting decision and the official variety description of the CPVO files are published on the CPVO public website. These documents are made available after the grant of the variety in the CPVO Official Gazette.

Since end of March 2010, the CPVO is able to offer to applicants the possibility of e-filing which enables to file an application for Community rights on-line via a secured site. The number of e-TQs made available so far for online applications reaches more than 50 and without any incentive, the CPVO received about one third of its applications on line since the beginning of the year. The Office just started a pilot project in order to investigate how it would be possible to share the system with National authorities in the EU, whereby applicants would have the possibility to re use data from an application filed in a particular procedure in order to file another application for the same variety in another procedure. A centralized platform will probably be built up at EU level.

Following the implementation of the so-called “one key, several doors” principle, whereby DUS test reports produced by any “CPVO-entrusted” authority in the EU are accepted for listing or protection purposes throughout the Community, an independent technical audit of the CPVO continued audits during 2010, the first entrustment certificate was issued by the Administrative Council of the Office in March 2010. A meeting with experts from several EU national authorities took place in order to work on the revision of the entrustment requirements. The CPVO has also developed a new procedure for the attribution of varieties to examination offices where the applicant is given the possibility to express a preference, which is taken into account, if possible, by the Office.

The Community Plant Variety Office will organise at the occasion of the end of the mandate of its first President, Mr. Bart Kiewiet, a Seminar on the impact of 15 years of the EU plant variety protection system; this event will take place on June 23. Mr. Kiewiet will retire at the end of July and it is expected that the new President will be appointed by the EU Council in May/June.

The EU Commission is planning to organize a Conference in October to present the conclusions of the evaluation of the CPVR system carried out by an external evaluator.

[Annex III follows]

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ANNEX III

FRANCE

Report of GEVES, the French examination office

Following the relocation of the GEVES headquarters to its new building in Beaucouzé (nearby Angers), the new testing unit named Anjouere is now fully achieved and operational. It is located at about 20 km from Angers on clay soil well adapted to conduct DUS and VCU trials on field crops replacing the former one located close to Versailles.

The situation with national PBR is stable, with a large number of applications being converted in EU PBR just after delivery.

GEVES activity as an examination office on behalf of CPVO is important with around 500 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 500 DUS reports to other examination offices and purchases about 150 reports from them in the framework of bilateral agreements.

In total, GEVES studies each year about 2,500 new varieties

Finally, GEVES has now completed the first round of audits in the framework of ISO 9001 certification standard. All activities and units are now covered by this system of management based on quality requirements.

Short report about main events since TWC concerning GEVES's IT department:

The English translation of the SIRIUS software is now available (User Guide + Interface). You can download it from our web site <http://www.geves.info> through the same procedure that we use to download Gaia software.

A Gaia workshop was held from 12 to 13 May 2011 in Brazil. There were thirteen participants covering several countries (Chile, Uruguay, Paraguay, Brazil, and Mexico). This workshop included for the first time the combination of morphological distance (GAIA) with genotypic distance. The overall impression was very good and most of people planned to use Gaia in the near future.

I remind you that the last version of Gaia including the BM analysis is available from our web site <http://www.geves.info>.

In the framework of a CPVO project on peach species where one of the aims was the establishment of database compiling different type of DUS data, we have developed a web site called "GEMMA". This site constitutes a technical platform to share and exchange phenotypic data, digital pictures and molecular data. We tried to have a generic approach that should provide an answer for other project that requires pooling DUS data. The couple Species X Country is the backbone of the database structure. The Web site support multi language. The data access is controlled by access rights based on the couple Species X Country and access levels (Administrator access, User restricted access, Public access).

We started the development of a tool interface between “IMAGEJ”<sup>1</sup> and a database dedicated to image analysis. The idea is to manage through a single interface several aspects as :

- Declare and store all components of image analysis study (List of materials, list of images, Species, Design, ...)
- Declare, store and share ImageJ’s macros (Scripting language)
- Store and share results from these macros
- ...

In the framework of sharing the online application system developed by CPVO to manage the e-filing of application for plant variety right, GEVES, NAKT and CPOV began to investigate technical issues and cost of such project. A first meeting was held last March in Brussels, where we began to examine several aspects like :

- Identification
- Interface
- Forms (Re-using an existing application, Management of questions linked to specific countries, Management of VCU question...)
- Transmission of data

The next step is to learn about the back office. The access mode through a remote connection is already established.

[Annex IV follows]

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<sup>1</sup> IMAGEJ is a public domain, Java-based image processing program.

ITALY

Report of plants protection activity in Italy

In Italy it is the Ministry of Economic Development that grants plants variety rights in collaboration with the Ministry of Agriculture and Forest.

The total number of plants variety rights granted last year (2010) was 43:

- for Agricultural species (durum and soft wheat) (25,6%)
- for Fruit species (74,4%)

During this year (2011) the total number of plants variety rights granted has been 4 (3 for durum and soft wheat and 1 for fruit species).

In 2010 our certification body ENSE was incorporated in another institution called INRAN (National Research Institute for Food and Nutrition) which now includes a specific Seed Area and Registry activity. INRAN carries out the Registry trials for the Ministry of Agriculture and Forest.

[Annex V follows]

ANNEX V

JAPAN

1. PVP Statistics

In 2010, 1,038 applications were filed, which represented a decrease of 9% compared to 2009. And 1,404 titles were granted, which represented a decrease of 6% compared to 2009. In the period 1978 to 2010, a total of 25,522 applications were filed and a total of 19,990 titles were granted.

2. The average duration of the examination procedure (from the application to the registration):

3. In 2010 fiscal year, the average duration was 2.5 years, which represented a shortening of 0.2 years compared to the previous year. We set the target that the average duration will be 2.3 years in 2014 fiscal year.

4. This year's sessions of the Technical Working Party for Ornamental Plants and Forest Trees (TWO) and the Technical Working Party for Fruit Crops(TWF)

5. This year's TWO and TWF sessions will be held in Hiroshima Prefecture, Japan. The TWO session will be held from November 6 to 11 at Fukuyama City and the TWF session will be held from November 13 to 18 at Kure City, located near Hiroshima City.

[Annex VI follows]

## REPUBLIC OF KOREA

## 1. Plant Breeder's Right

The total number of application as of March 31, 2011 was 5,315 and among them, 3,428 varieties were registered and 535 were rejected, since the implementation of the PVP system in 1998.

## 2. Online Application System

KSVS operates an online application system "SeedNet" (<http://www.seednet.go.kr>) which any applicant can access through the internet.

- Background
  - well-established broadband network
    - The Republic of Korea is one of the world's most wired countries in the world
    - The average internet speed of Korea(ITIF report) : 49.5Mbs
  - Easy access by Web browser such as Internet Explorer
    - User does not need to install client software in one's own computer
- On-line Payment for application, examination, registration, and annual fee
  - credit card
  - real-time account transfer
  - attachment receipt for the payment of fee(deposit slip issued by bank)

## Yearly online application rate

section	2008			2009			2010			2011 (April 30)		
	online	total	%	online	total	%	online	total	%	online	total	%
Application for PVP	417	488	<b>85.5</b>	434	547	<b>79.3</b>	479	574	<b>83.5</b>	256	315	<b>81.3</b>
Application for the entry in National List	29	35	<b>83.9</b>	27	31	<b>87.1</b>	22	25	<b>88.0</b>	18	18	<b>100</b>

※ Total number includes online and postal, visiting application.

- SeedNet Operation Environment
  - Initial Open year : 2004
  - Web Server and DB Server OS : Windows Server 2003(Web), 2008(DB)  
(To balance on the work load of server, we operate Web Server, DB Server respectively)
  - Database Management system : MS-SQL 2008 Enterprise Edition
  - System Environment
    - User Interface : Freemaker, Framework : iBatis

### 3. Variety Characteristic Search System

- Objective
  - PBR judge or DUS examiner is easy to select comparing variety by searching plant variety characteristics
- Database
  - protected variety, reference variety and so on (since 1998)
    - registered variety number : 10,243, registered crop number : 151

(as of May 31, 2011)

Total	Rose	Red pepper	Chrysanthemum	Rice	Others
10,243	826	695	599	504	7619

- Development course
  - To store various image of variety in PV Database
    - registered image number : 8,353(2,907 variety, only 28%)

### 4. Seed Industry Law

The Law was amended partially in May of last year. We eliminated the article 38 of "publication of the application for public inspection". It results in shortening the average duration of the examination procedure by about 60 days. This law entered into force on September 1, 2010. And in respect of amendment of the Law, its decree and regulations also were amended accordingly.

### 5. Molecular Techniques

Recently, our country started actively applying DNA analysis to seed circulation management of several crops. The representative example is analyzing about comparison of DNA profiles between registered seed and marketing seed. In addition, we are utilizing molecular markers in genetic purity assessment of national list of varieties of rice, barley and soybean.

### 6. International Cooperation

KSVS and KOICA are preparing to provide PVP training course for the experts from countries which are trying to introduce a PVP system and to develop a PVP system, for 2 weeks in July 2011.

[Annex VII follows]

NETHERLANDS

**Number of applications received** for testing for the first year in 2010 for national listing and national and European Plant breeders right:

Ornamentals	850 (+ 10%)
Agriculture	181 (+ 40%)
Vegetables	842 (- 9%)
Total	1,873 (+ 3%)

2009 showed a decrease of 9% in relation to 2008.

**Introduction of new Administrative software system**

In the beginning of 2010 a complete new IT system was introduced replacing the existing 3 different systems. The start-up problems were considerable and caused the work to be ready later than expected. In the meantime the advantages of one uniform system become visible. Through this new system it will be possible for applicants to follow the progress of their applications on-line.

In general we notice a strong desire by the users of the system (staff and applicants alike) to ask more and on shorter notice than in the past. The investments in IT to keep up with the society around us are considerable.

**Naktuinbouw entrusted for all species in test in the Netherlands by CPVO**

In February, the CPVO Administrative Council entrusted Naktuinbouw for all (more than 800) species in test. It does not only concern species in which there are applications on behalf of the CPVO, but also all species that are tested for National Listing and National Plant Breeders Rights.

**Termination of DUS testing for wheat**

As a consequence of the principle that only applications can be accepted in species for which Naktuinbouw is entrusted, it was decided to stop the testing of wheat and barley in the Netherlands. The costs of maintaining the reference collection in relation to the small number of applications were simply too high.

**Training in DUS related measures**

The sharing of knowledge is important in order to work on a global, harmonized and strong Plant Breeders right system for the benefit of society. Naktuinbouw contributes to this principle on different levels

- two colleagues are tutors in the **UPOV distance learning course**
- annually Naktuinbouw, with the help of UPOV and CPVO is organising the **PVP course in Wageningen**. In 2010, 23 participants from 17 countries participated in this two weeks training course.
- Naktuinbouw is involved in **bilateral projects to exchange knowledge** and to train staff of countries that are working in or on Plant Breeders Rights systems. In 2011 a 10 year cooperation with China will be concluded with a closing seminar in Beijing, training will be provided together with the colleagues from the Japanese Plant variety Right Office in Vietnam. In Indonesia audits are carried out on the quality of the DUS

system. In Ethiopia the first training took to be followed with more activities and recently first discussions took place with the Indian authorities to see how the well-developed Indian system suits the needs of the international breeding community.

- There is a possibility to be an intern in Naktuinbouw for a period of 2-4 weeks. During this period the intern can work together with Naktuinbouw colleagues and thus learn the details of the DUS test work. Naktuinbouw charges no costs for such **internship** and has accommodation available. In 2010, 4 interns spent time at Naktuinbouw; two Polish colleagues, one Canadian colleague and a Chinese colleague. For 2011, again 4 colleagues have applied.
- Finally there is the **Naktuinbouw DUS helpdesk** where colleagues from all over the world can ask questions related to the practice of DUS testing.

### **Research projects**

DUS testing is constantly in development. New techniques become available and national research projects funded by the Dutch Ministry for Economic affairs, Agriculture and Innovation, help to incorporate these in the DUS test system. This year projects are assigned to the replacement of ordinary light bulbs by LED techniques to see what effect this has on various characteristics and the observation of these characteristics. The existing image analysis is improved, a number of DNA related projects are defined to see how these techniques can help and field computers are introduced in the tests of vegetables and ornamentals. Also the development, improvement and harmonization of disease resistance characteristics is an important subject not only on National level but also partly funded by the CPVO R&D system.

### **Use of DNA techniques**

SSR DNA databases are developed for Phalaenopsis and Potato with the aim to have a fast identification tool and to see if such databases can be used in the framework of the management of reference collections. Also, in cooperation with GEVES (France) a similar database for Lettuce is under construction and it has been decided to build on the results of a 2004 CPVO project and revitalize the than developed Rose database.

### **Cooperation with the Czech Republic**

In order to be able to carry out two independent growing cycles in one calendar year for vegetable applications, cooperation with the Czech Republic was established.

### **Discussions on the use of disease resistance characteristics in DUS tests**

A discussion took place on the use of disease resistance characteristics in the DUS tests. Mainly the asterisk disease characteristics that figure in the CPVO protocol and is also basis for DUS testing for National list purposes, was the subject of discussion.

### **First series of Calibration books available**

For internal use, Naktuinbouw has so-called calibration books. With a detailed description on the method to score characteristics. The existing explications in the UPOV Test Guidelines are further explained by color photographs. Upon request by the breeders in 2010, the first series of 27 of such calibration books were made available through the Naktuinbouw website.

### **Variety descriptions on the Naktuinbouw website**

Naktuinbouw now publishes all variety descriptions on its website.

### **90 national protocols on website**

If in DUS tests no CPVO protocol or UPOV Test Guidelines are available, national protocols are developed. Naktuinbouw has published a series of 90 national protocols on its website.

### **Special cases encountered:**

- In *Zantedeschia* we encountered a problem that two varieties were very close in the Netherlands, while in New Zealand they were scored in different colour groups. The different light conditions between these distant parts of the world are expected to cause this. For this species we will have to treat each others variety descriptions with care.
- Potato GMO applications in potato GM varieties were tested. It concerns varieties for starch grain production. The GM part does not pose problems in the DUS test, but as for trials with such material permits are needed, trials at the breeders premises are used.
- New form of resistance on *Bremia* in lettuce  
With the progressing breeding techniques it is possible to use other resistance sources than the classical ones. In the test this can create problems as tests are usually validated against the classical resistance forms only. In *Bremia* in lettuce now a resistance form was used that brings the resistance later in expression than the classic one. In order to have a reliable outcome the test had to be further developed for this.
- Conservation varieties. In an attempt to conserve the genetic diversity in the European Union, new legislation has been developed in the EU in order to make it possible to include landraces and amateur vegetable varieties in the national lists of the Member states and thus in the Common Catalogue through a simplified DUS procedure. In the Netherlands some 120 varieties were applied and, as also these varieties are part of common knowledge, it was decided to carry out a normal DUS trial to see if indeed it is possible to declare DUS on administrative data only. Results so far show that for the applicants of such material it is very difficult to supply sufficient reliable data in order to list varieties without trials at all.

Naktuinbouw  
April 2011.

[Annex VIII follows]

## ANNEX VIII

## POLAND

1) In one experimental station (Słupia Wielka) we introduced computer aided measurements in oil-seed rape DUS trials for four characteristics: length and width of cotyledon and length and width of petals. At the second station (Głubczyce) these measurements are still made by hand.

2) Number of applications:

a) For National List for last two years:

Group of crops	2009			2010		
	domestic	foreign	in total	domestic	foreign	in total
Agricultural	132	230	362	131	245	376
Vegetables	28	28	56	15	11	26
Fruits	7	1	8	12	-	12
In total	167	259	426	158	256	414

b) For Plant Variety Protection for last two years

Group of crops	2009			2010		
	domestic	foreign	in total	domestic	foreign	in total
Agricultural	22	2	24	35	2	37
Vegetables	1	6	7	6	-	6
Fruits	7	-	7	10	-	10
Ornamental	11	7	18	17	9	26
In total	41	15	56	68	11	79

3) Two of our experts participated in the Internship four-weeks training course organized by Naktuinbouw in Holland.

4) Poland has bilateral cooperation agreements in the field of DUS testing with the Czech Republic, Hungary and Slovakia and conducted DUS testing for Lithuania, Latvia, Estonia, Norway, Slovenia, Croatia and also on behalf of the CPVO. We also provided DUS reports upon the request for CPVO, Lithuania, Latvia, Estonia, Romania, Slovenia, Russia, Denmark, Austria, Turkey, Serbia, and Croatia.

5) We are entrusted CPVO institution for DUS testing for 92 taxa (agricultural, vegetable, ornamental and fruit).

[Annex IX follows]

UNITED KINGDOM

PBR and DUS Testing Activities in the United Kingdom 2010-11

In 2010/11, the United Kingdom PBR applications remained at a modest level, with the bulk of applications continuing to relate to smaller companies that market varieties largely within the United Kingdom or those that prefer to obtain United Kingdom Rights before submitting applications to the CPVO. Across all species, United Kingdom national list applications rose slightly and remained at about 10 times that for PBR. Around a third of applications were for winter oilseed rape of which approximately half were hybrid varieties. Cereal breeding activity remained robust and also accounted for around a third of all United Kingdom applications. Herbage and forage variety applications, although slightly reduced, still accounted for around 20% of the United Kingdom total, with sugar beet at 10% and the remaining 5% being made up of applications for potatoes and various pulses.

The Food and Environment Research Agency (Fera) was granted CPVO Entrustment on 16th February 2011. The entrustment by the CPVO Administrative Council was in accordance with Council Regulation (EC) No 2100/94 for DUS examination work as specified in the current annex 1 to the designation agreement. This comprised all the major crops for which the United Kingdom maintains DUS expertise at their three Technically Qualified Bodies: Cambridge (NIAB), Crossnacreevy (AFBI) and Edinburgh (SASA). This entrustment is subject to continuing conformity with the entrustment requirements for CPVO examination offices and is granted until June 22, 2013, when a renewal audit will be required.

A United Kingdom research and development project of particular interest to the TWC is the completion at AFBI-Crossnacreevy of a three-year examination of Genotype x Environment effects on the uniformity of ryegrass varieties initially examined under different environments. Uniformities were found to be similar to those of the control set that were examined and registered at AFBI-Crossnacreevy. The result confirmed that there were no implications for reference collection uniformity standards.

[End of Annex IX and of document]