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| International Union for the Protection of New Varieties of Plants |  |

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| Technical Working Party on Automation and Computer Programs  Thirty-Seventh Session Hangzhou, China, October 14 to 16, 2019 | TWC/37/12  Original: English  Date: October 16, 2019 |

report

Adopted by the Technical Working Party on Automation and Computer Programs

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Opening of the session

The Technical Working Party on Automation and Computer Programs (TWC) held its thirty-seventh session in Hangzhou, China, from October 14 to 16, 2019. The list of participants is reproduced in Annex I to this report.

In the absence of Mr. Christophe Chevalier (France), Chairperson of the TWC, the session was opened by Mr. Kees van Ettekoven (Netherlands), who welcomed the participants and thanked China for hosting the TWC session. The TWC session was chaired by Mr. van Ettekoven.

The TWC was welcomed by Mr. Hao Tang, Division Director, Division for DUS Tests, Development Center of Science and Technology, Ministry of Agriculture and Rural Affairs (MARA), China.

The TWC received a presentation by Ms. Xuhong Yang, Deputy Division Director, Division for DUS Tests, Development Center of Science and Technology, Ministry of Agriculture and Rural Affairs, China, on developments in plant variety protection in China. A copy of the presentation is provided in Annex II to this report.

Adoption of the agenda

The TWC adopted the agenda as reproduced in document TWC/37/1 Rev..

Short reports on developments in plant variety protection

*(a) Reports on developments in plant variety protection from members and observers*

The TWC noted the information on developments in plant variety protection from members and observers provided in document TWC/37/3 Prov. The TWC noted that reports submitted to the Office of the Union after October 3, 2019, would be included in the final version of document TWC/37/3.

*(b) Reports on developments within UPOV*

The TWC received a presentation from the Office of the Union on latest developments in UPOV, a copy of which is provided in document TWC/37/2.

## Statistical methods

### The Combined Over Years Uniformity criterion (COYU)

The TWC considered document TWC/37/7.

The TWC agreed to invite members who use “R” or “DUST” Software to review the new COYU package to identify possible improvement points. The TWC noted the expression of interest by experts from China, Finland, France and the United Kingdom to review the new COYU package.

The TWC considered the proposed draft revision for document TGP/8, Section 9 “The Combined Over Years Uniformity Criterion (COYU)”, as presented in the Annex to document TWC/37/7. The TWC agreed that editorial suggestions should be communicated to the drafter. The TWC agreed to invite the expert from the United Kingdom to prepare a revised version of the draft guidance, to be presented to the TWC, at its thirty‑eighth session.

## Assessing Uniformity by Off-Types

### Risks associated with assessment of uniformity by off-types on the basis of more than one growing cycle

The TWC considered document TWC/37/5.

The TWC received a presentation on “Assessing uniformity by off-types: Calculator for number of off‑types and risks”. A copy of the presentation is provided in Annex I to document TWC/37/5.

The TWC noted that software was developed in Excel to calculate the number of off‑types and risks associated with assessment of uniformity by off-types on the basis of more than one growing cycle, as provided in document TWC/37/5, Annex II.

The TWC welcomed the availability of software that enables determination of the maximum number of off-types, both for when the acceptance probability is applied in each cycle separately, or over the two-cycle test.

The TWC agreed to propose that a sentence be added to document TGP/8 to explain that software was available for calculating the number of off-types for the combination of growing cycles.

The TWC agreed to propose that the software be made available for download from the UPOV website.

## Experience with using two locations by one year for DUS decisions

The TWC considered document TWC/37/10 and received a presentation on “Experience with using two locations by one year for DUS decisions” by an expert from France. A copy of the presentation is provided in the Annex to document TWC/37/10.

The TWC noted that variety descriptions were generated with information from one test site only.

The TWC recalled that, where two growing cycles were conducted in the same year and at the same time, a suitable distance or a suitable difference in growing conditions between two locations would be needed to satisfy the requirement for independence.

## Image Analysis

### Development and innovation of DUS test tools

The TWC considered document TWC/37/9 and received a presentation on “Development and innovation of DUS test tools” by an expert from China. A copy of the presentation is provided in the Annex to document TWC/37/9.

The TWC recalled that documents UPOV/INF/16 “Exchangeable software” and/or UPOV/INF/22 “Software and equipment used by members of the Union” could be used for sharing information on the developments reported by China, as appropriate.

TGP documents

The TWC considered documents TWP/3/1 Rev. and TWC/37/11.

### Matters for adoption by the Council in 2019

The TWC noted the revisions previously agreed by the TC to documents TGP/7, TGP/8, TGP/10, TGP/14 and TGP/15 that would be proposed for adoption by the Council at its fifty-third ordinary session, to be held in Geneva on November 1, 2019, subject to approval by the CAJ, at its seventy-sixth session, to be held in Geneva on October 30, 2019.

### Possible future revisions of TGP documents

### TGP/7: Development of Test Guidelines

#### Characteristics which only apply to certain varieties

The TWC noted document TWP/3/9.

### TGP/8: Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability

#### The Combined-Over-Years Uniformity Criterion (COYU)

The TWC noted that discussions on the revision of guidance on the Combined-Over-Years Uniformity Criterion (COYU) would be held under agenda item “Statistical methods”.

#### Data Processing for the Assessment of Distinctness and for Producing Variety Descriptions

The TWC considered document TWP/3/10.

The TWC considered the summary of different approaches used by members of the Union to convert observations into notes for producing variety descriptions of measured characteristics, as set out in document TWP/3/10, Annex II.

The TWC noted that the different approaches described in the document were used for producing variety descriptions and did not mention assessment of distinctness. The TWC agreed to propose amending the title of the document to read “Data processing for the ~~assessment of distinctness and for producing~~ production of variety descriptions for measured quantitative characteristics”.

The TWC noted the request by the TC for the experts from France, Germany, Japan and the United Kingdom to provide information on the circumstances in which their methods would be suitable, including the method of propagation of the variety and other factors considered in deciding to use the method.

The TWC noted that the descriptions of the methods were not sufficient for application, and the situations when the methods would or would not be suitable.

The TWC agreed that the experts from France, Germany, Italy and Japan should be invited to provide the information requested by the TC to the expert from the United Kingdom.

The TWC considered the proposal for developing a decision tree on requirements and situations for using the different approaches described. The TWC agreed to invite the experts from France, Germany, Italy, Japan and the United Kingdom to consider providing the following information as a starting point for describing the requirements of each approach, as appropriate:

* Country
* Method
* Is a full set of example varieties required? [“yes”, “no” or “not applicable”]
* Is a partial set of example varieties required? [“yes”, “no” or “not applicable”]
* Varieties x Years degree of freedom > 15? [“yes”, “no” or “not applicable”]
* Are delineating varieties required? [“yes”, “no” or “not applicable”]
* Is crop expert judgment required? [“yes”, “no” or “not applicable”]
* Is the full range of expression in growing trial required? [“yes”, “no” or “not applicable”]
* Can the method be used with cyclical planting? [“yes”, “no” or “not applicable”]
* Is a continuous range of expression required? [“yes”, “no” or “not applicable”]

The TWC agreed the information provided could be displayed in the format of a table, as follows:



The TWC agreed that other criteria or requirements could be added by the experts providing information, as appropriate.

### TGP/14: Glossary of Terms Used in UPOV Documents

#### Color names for the RHS Colour Chart

The TWC noted the information provided in document TWP/3/11.

### TGP/15: Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)

#### New example: Characteristic-specific marker with incomplete information on state of expression

The TWC noted document TWP/3/12.

### New proposals for revisions of TGP documents

#### TGP/7: Development of Test Guidelines

##### Procedure for partial revision of UPOV Test Guidelines

The TWC noted that the TC had considered a proposal to revise the procedure for partial revisions of Test Guidelines.

##### Proprietary method of assessment for male sterility

The TWC noted that the TC, at its fifty-fourth session, had agreed that members should propose any alternative methods or markers for DNA marker tests in Test Guidelines.

##### Suitability of characteristics in previous versions of Test Guidelines

The TWC noted that the TC, at its fifty-fourth session, had recalled that it was the responsibility of the TWPs to assess whether characteristics met the requirements for a characteristic, as set out in document TGP/7, including those characteristics in previously adopted Test Guidelines.

##### Presentation of full scale of notes for quantitative characteristics in Test Guidelines

The TWC considered the proposal for the revision of document TGP/7 to present the full scale of notes for quantitative characteristics in Test Guidelines.

The TWC noted the usefulness of presenting the full scale of notes for electronic application systems and agreed with the TWO, TWV and TWF that all states of expression for quantitative characteristics should be presented in Test Guidelines.

#### TGP/12: Guidance on Certain Physiological Characteristics

##### Explanations on disease resistance characteristics

The TWC noted that the TC, at its fifty-fourth session, had agreed to await the TWV discussion on disease resistance characteristics in DUS examination before considering whether to develop further guidance.

### Program for the development of TGP documents

The TWC noted the program for the development of TGP documents, as set out in document TWP/3/1, Annex VI.

## Differences in notes for the assessment of distinctness

The TWC considered document TWP/3/13.

The TWC noted existing guidance in the General Introduction and documents TGP/8, TGP/9 and TGP/14 on differences in notes for the assessment of distinctness.

The TWC noted the clarification provided in document TWP/3/13 on how the approach for QN characteristics could be applicable for certain states of expression in some PQ characteristics.

## Software, Information and databases

### (a) UPOV information databases

The TWC considered documents TWP/3/4 and TWP/3/4 Add..

#### UPOV Code System

##### UPOV code developments

The TWC noted that 242 new UPOV codes had been created in 2018 and a total of 8,844 UPOV codes were included in the GENIE database, as set out in document TWP/3/4, paragraph 9.

##### UPOV code amendments considered by the TC at its fifty-fourth session

The TWC noted that the TC, at its fifty-fourth session, had agreed not to delete the UPOV Codes for sweet corn and popcorn and for certain subspecies of *Brassica oleracea*, therefore creating exceptions to the “Guide to the UPOV Code System”, as set out in document TWP/3/4, paragraphs 15 and 32.

The TWC noted that amendments to the “Guide to the UPOV Code System” would be considered by the TC, at its fifty‑fifth session, to be held in Geneva on October 28 and 29, 2019, as set out in document TWP/3/4, paragraph 16.

The TWC noted that the TC had agreed to amend the UPOV codes for subspecies in the *Mucuna,* *Epichloe* and *Neotyphodium* genera and to correct the UPOV codes for *Sesbania sesban*.

The TWC noted that the Office of the Union had issued Circular E‑18/208 to the designated persons of the members of the Union in the TC, the CAJ, TWPs and contributors to PLUTO, announcing the amendments to UPOV codes and requesting contributors to PLUTO to use the amended UPOV codes from February 22, 2019, as set out in document TWP/3/4, paragraph 21.

#### PLUTO database

##### Program for improvements to the PLUTO database

The TWC noted the summary of contributions to the PLUTO database from 2015 to 2018 and the current situation of members of the Union on data contribution, as presented in document TWP/3/4, Annex I.

##### Content of the PLUTO database

The TWC noted developments concerning possible expansion of the content of the PLUTO database, as set out in document TWP/3/4, paragraph 87.

The TWC noted that the proposals by the WG-DEN at its fifth session concerning possible expansion of the content of the PLUTO database would be considered by the CAJ, at its seventy-sixth session, to be held in Geneva on October 30, 2019, as set out in document TWP/3/4, paragraph 89.

### (d) UPOV PRISMA

The TWC considered document TWP/3/3 and noted the developments concerning UPOV PRISMA.

### (f) Web services provided by UPOV

The TWC considered document TWC/37/4 and noted the availability of web services to transmit application data between PVP offices and UPOV PRISMA and the future developments in relation to GENIE DB.

## Variety denominations

The TWC considered document TWP/3/6.

### Possible revision of document UPOV/INF/12 “Explanatory Notes on Variety Denominations under the UPOV Convention”

The TWC noted developments concerning a possible revision of document UPOV/INF/12 “Explanatory Notes on Variety Denominations under the UPOV Convention”, as set out in document TWP/3/6, paragraphs 6 to 8.

The TWC noted that the CAJ, at its seventy-fifth session, had agreed to request the TC to consider proposals received by the WG-DEN to revise the list of classes in document UPOV/INF/12/5, as set out in document TWP/3/6, paragraph 9:

The TWC noted the proposals to revise the list of classes 203 and 205 in document UPOV/INF/12/5, as set out in document TWP/3/6, paragraph 9, in anticipation of consideration of this matter by the TC.

### Revision of the ninth edition of the ICNCP

The TWC noted that the CAJ had agreed that the Office of the Union contribute to the revision of the ninth edition of the ICNCP on the basis of document UPOV/INF/12/5 and the work of the WG DEN, as set out in document TWP/3/6, paragraph 14.

### Possible development of a UPOV similarity search tool for variety denomination purposes

The TWC noted that the WG-DEN, at its fifth meeting, had agreed that the Office of the Union should restart its work to explore possibilities to improve the UPOV Denomination Similarity Search Tool in conjunction with the Community Plant Variety Office of the European Union (CPVO).

### Expansion of the content of the PLUTO database

The TWC noted developments concerning the possible expansion of the content of the PLUTO Database, as set out in document TWP/3/6, paragraph 20.

### Non-acceptable terms

The TWC noted that the WG-DEN, at its fifth meeting, had agreed to propose not to pursue further the matter in relation to the item “Non‑acceptable terms”.

### Date and program of the next meeting

The TWC noted that the WG-DEN, at its sixth meeting, to be held in Geneva, in the evening of October 29, 2019, would discuss the revision of document UPOV/INF/12/5 “Explanatory Notes on Variety Denominations under the UPOV Convention.”

Guidance for drafters of Test Guidelines

The TWC considered document TWP/3/8.

The TWC noted the issues on the web-based TG template addressed during 2018, as set out in document TWP/3/8, paragraph 11.

The TWC noted the issues currently being addressed on the web-based TG template, as set out in document TWP/3/8, paragraph 12.

The TWC noted that the Office of the Union would issue a circular to identify requirements of UPOV members for the development of individual authorities’ test guidelines using the web-based TG template.

The TWC received a demonstration by the Office of the Union and noted that training on the web-based TG template would be provided to all TWPs, at their sessions in 2019.

The TWC noted that the different elements displayed in the web-based TG template provided links to the respective “Guidance Notes” or “Additional Standard Wording” in document TGP/7. The TWC agreed to propose that the standard wording of other TGP documents be displayed in standard text of Test Guidelines.

## Molecular Techniques

The TWC considered document TWP/3/7.

### Developments at the seventeenth session of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular

The TWC noted the report on developments in the TWPs and BMT, as set out in document TWP/3/7, paragraphs 7 to 72.

The TWC noted the draft agenda for the BMT at its eighteenth session, as set out in document TWP/3/7, paragraph 73.

### Developments at the fifty-fourth session of the Technical Committee

#### Review of document UPOV/INF/17 “Guidelines for DNA-Profiling: Molecular Marker Selection and Database Construction (‘BMT Guidelines’)

The TWC noted that the European Union, France and the Netherlands would be invited to prepare a new draft of document UPOV/INF/17 for consideration at the eighteenth session of the BMT, as set out in document TWP/3/7, paragraph 75.

#### Cooperation between international organizations

The TWC noted that the TC had agreed that UPOV and OECD should make progress on the matters previously agreed by the TC, namely:

(a) to develop a joint document explaining the principal features of the systems of the OECD, UPOV and ISTA;

(b) to develop an inventory on the use of molecular marker techniques, by crop, with a view to developing a joint OECD/UPOV/ISTA document containing that information, in a similar format to UPOV document UPOV/INF/16 “Exchangeable Software”, subject to the approval of the Council and in coordination with OECD and ISTA; and

(c) the proposal for the BMT to develop lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques for consideration by the TC.

The TWC noted that ISTA would be invited to join the above initiatives, when in a position to do so.

The TWC noted that the Office of the Union would prepare a draft of a joint document explaining the principal features of the systems of the OECD, UPOV and ISTA, for consideration by the BMT, at its eighteenth session, on the basis of relevant texts from the World Seed Partnership and the frequently asked question on the use of molecular techniques in the examination of DUS, as set out in document TWP/3/7, paragraph 79.

The TWC endorsed the following elements for the inventory on the use of molecular marker techniques, by crop,:

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| Country or Intergovernmental Organization using molecular marker technique |
| Source [the name of the Authority] and Contact details [email address] |
| Type of molecular marker technique |
| Crop (s) for which the molecular marker technique is used  [botanical name(s) and UPOV code(s) to be provided] |
| Purpose of the use of the molecular technique [UPOV model “Characteristic-Specific Molecular Markers”, UPOV model “Combining Phenotypic and Molecular Distances in the Management of Variety  Collections”, Purity, Identity, Verification of hybridity] |
| Is the molecular marker technique used as part of Seed Certification in the last two years? [National certification, OECD certification] [relevant for OECD seed schemes] |
| In the last 2 years, how many times did the Authority use the molecular marker techniques? |
| The molecular marker technique is covered by [UPOV Test Guideline(s), UPOV TGP document(s), other document(s) (please specify)] |
| Is the molecular technique validated? [If yes, please specify a particular organization or authority]  [relevant for OECD seed schemes] |

The TWC noted that, on the basis of the comments received from the TWPs and BMT, proposed elements for the inventory on the use of molecular marker techniques, would be presented for consideration by the TC at its fifty-fifth session, as set out in document TWP/3/7, paragraph 82.

The TWC noted that, subject to agreement by the TC at its fifty-fifth session, a circular would be issued to request the member of the Union to complete the survey as a basis to develop the inventory on the use of molecular marker techniques, by crop, after coordination with the OECD Seed Schemes Bureau, as set out in document TWP/3/7, paragraph 83.

The TWC noted that the BMT, at its eighteenth session, would be invited to develop lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques for consideration by the TC at its fifty‑fifth session, as set out in document TWP/3/7, paragraph 84.

#### Revision of document TGP/15 “Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)”

##### Revision of the model “Combining phenotypic and molecular distances in the management of variety collections”

The TWC noted that the Model “Combining Phenotypic and Molecular Distances in the Management of Variety Collections” of document TGP/15, Section 2.2, would be revised at a later stage once an additional threshold level has been implemented in France, as set out in document TWP/3/7, paragraph 87.

##### Proposal for inclusion of a new model “genetic selection of similar varieties for the first growing cycle”

The TWC noted that the TC had agreed with the inclusion of a new model “Genetic selection of similar varieties for the first growing cycle: example French Bean” in document TGP/15, as presented in document TWP/3/7, Annex II

The TWC noted that a draft of document TGP/15/2 “Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)” incorporating the new model would be presented to the seventy-sixth session of the CAJ, to be held on October 30, 2019, and if agreed by the CAJ, a draft of document TGP/15/2 would be presented for adoption by the Council at its fifty-third ordinary session, to be held on November 1, 2019, on that basis.

#### Report of work on molecular techniques in relation to DUS examination

The TWC noted that the text from document UPOV/INF/18/1 will be introduced in document TGP/15 to clarify that it was the responsibility of the authority to decide on the reliability of the link between the gene and the expression of the characteristic, as set out in document TWP/3/7, paragraph 93.

The TWC noted that document TGP/15 will include an explanation that it is the responsibility of the respective TWP and the TC to assess whether the reliability of the link between the gene and the expression of the characteristic is satisfied in order to include a method in the Test Guidelines, as set out in document TWP/3/7, paragraph 94.

The TWC noted that matters concerning characteristic-specific markers with incomplete information on state of expression are considered in document TWP/3/12.

#### Session to facilitate cooperation in relation to the use of molecular techniques

The TWC noted the results of the coordination session at the seventeenth session of the BMT, as set out in document TWP/3/7, paragraphs 62 to 71.

The TWC noted that all TWPs would be invited to form discussion groups for the main crops at each TWP to allow participants to exchange information on their work on biochemical and molecular techniques and explore areas for cooperation, in order to build on the BMT outcomes and feed into the future work of the BMT, as set out in document TWP/3/7, paragraph 97.

The following information was provided by TWC participants:

Summary of crop and authorities currently using biochemical and molecular techniques

|  |  |
| --- | --- |
| Argentina | Soybean |
| Brazil | *Eucalyptus*, Soybean |
| China | Broccoli, Cauliflower, Chinese cabbage, Eggplant, Lettuce, Maize, Pepper, Rice, Rose, Sorghum, Strawberry, Walnut, Wheat, Fruit trees, Ornamentals, Soybean, Cotton, and other 29 crops |
| Denmark | Barley, Oats, Rye, Wheat, Forage grasses |
| European Union | Lettuce, Maize, Potato, Wheat, Vegetable, Barley, Sunflower |
| France | Maize, Oilseed rape |
| Italy | Soybean, Rice |
| Japan | Rice, Green tea, Strawberry, Japanese pear, French bean, Sweet cherry, Apple, Lettuce |
| Netherlands | French bean, *Phalaenopsis*, Potato, Rose, Tomato |
| Republic of Korea | Chinese cabbage, Cucumber, Lettuce, Melon, Pepper, Pumpkin, Radish, Rice, Tomato |
| Russian Federation | Maize, Potato, Soybean, Sunflower, Wheat |
| United Kingdom | Barley, Potato, Oilseed rape |

Summary of current use of biochemical and molecular techniques

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| --- |
| Use: |
| Management of variety collection and selection of similar varieties |
| Validation of male sterility and disease resistance |
| Validation of DUS/VCU samples |
| Variety identification |
| Research purposes |
| Breeding |
|  |
| Techniques: |
| ALFP (NL) |
| CAPS (JP) |
| MNP (CN) |
| OSR-SSR (FR) |
| PRG-SNPs (NL) |
| RAPID – STS (JP) |
| SSR (BR, CN, DK, GB, IT, JP, KR, NL, QZ) |
| SNPs (AR, CN, FR, DK, GB, NL, QZ) |

Summary of databases with molecular marker information, by crops

|  |  |
| --- | --- |
| Argentina | Soybean (under development) |
| China | Apple, Cotton, Maize (for research), Pepper, Rice, Rose, Sorghum, Soybean, Walnuts, Wheat, Fruit trees |
| Denmark | Barley, Wheat, Forage grasses |
| European Union | Potato |
| France | Maize |
| Italy | Soybean |
| Netherlands | French bean, *Phalaenopsis*, Potato |
| United Kingdom | For research |

#### Future program

The TWC noted that the TC had agreed the items for discussion on Wednesday, October 16, 2019, to facilitate discussion and cooperation between the TWC and BMT, as set out in document TWP/3/7, paragraph 101.

Cooperation in examination

The TWC considered document TWP/3/14.

The TWC noted the results of the survey of the current situation of members of the Union with regard to cooperation in examination, as set out in the Annex to document TWP/3/14.

The TWC noted that the UPOV Office would invite the Council representatives to identify contact the persons for international cooperation in DUS examination and that the information received would be made available on the UPOV website.

The TWC noted that the topic of international cooperation in DUS examination would be presented as an introduction to the agenda item “Cooperation in examination” during the normal program for the TWPs to explain the existing possibilities for cooperation between UPOV members.

The TWC formed discussion groups to discuss the technical concerns that prevent cooperation in DUS examination and how to overcome the technical concerns raised.

The TWC noted the following technical concerns raised by participants in the discussion groups:

Summary of current limits and obstacles for cooperation in DUS examination

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| --- |
| Different composition and size of collection of varieties |
| Different protocols for molecular markers |
| Different criteria for assessing distinctness |
| Different test guidelines |
| Language barriers |
| Phytosanitary requirements |
| Difficulties in administrative procedures |

Summary of possible areas for improvement of cooperation in DUS examination

|  |
| --- |
| Development of the general structure of databases |
| Guidelines for developing databases |
| Validated data of SNP profiles of varieties in different crops |
| Development of harmonization platform of SNPs set and software |
| Information sharing on machinery and equipment for DUS testing |
|  |
| Electronic means |
| Harmonized platform in XML |
| Crop dataset in the cloud |
| Joined construction and use of electronic means |
| Variety DNA passport for identification/ enforcement |

The TWC noted the following proposals from the participants in the discussion groups on how to overcome the technical concerns raised:

## Software, Information and databases

### (b) Variety description databases

The TWC considered document TWP/3/2.

The TWC noted that the TC, at its fifty-fourth session, had agreed with the TWF that the initial step before building any database should be to agree on the information to be shared and the format to exchange and store the information.

The TWC noted that the TC, at its fifty-fourth session, had agreed with the proposal by the BMT that, as a first step, discussions on databases should address the issues of how to overcome ownership matters, confidentiality, access to data and material, authorization for work to be performed and availability of results and information to partners.

The TWC considered document TWC/37/8 and received a presentation on “A statistical analysis Software - DUS EXCEL”. A copy of the presentation is provided in the Annex to document TWC/37/8.

The TWC considered the validation of the software presented. It recalled the previous exercise comparing results between the software of China and other software used by TWC participants. The TWC noted the offer by the United Kingdom to provide a common data set to China, France and Kenya for comparing results obtained for COYD and COYU procedures using different software.

The TWC noted the offer by China to make the software available for other UPOV members. The TWC noted that the user interface was available in Chinese and in English, while the user manual was available in Chinese language only. The TWC noted the offer by the United States of America to translate a short description of the system to assess the interest for translating the entire user manual.

### (c) Exchange and use of software and equipment

The TWC considered document TWP/3/5.

#### Document UPOV/INF/16 “Exchangeable Software”

The TWC noted that the Council, at its fifty-second ordinary session, held in Geneva, on November 2, 2018, had adopted document UPOV/INF/16/8 “Exchangeable Software.”

The TWC noted that the Office of the Union would issue a circular, inviting the designated persons of the members of the Union in the TC to provide or update information regarding the use of the software included in document UPOV/INF/16.

The TWC noted that the Office of the Union would make the information in documents UPOV/INF/16 and UPOV/INF/22 available in a searchable format on the UPOV website on the basis of the approach demonstrated at the fifty‑fourth session of the TC in 2019.

#### Document UPOV/INF/22 “Software and equipment used by members of the Union”

The TWC noted that the Council, at its fifty-second ordinary session, held in Geneva, on November 2, 2018, had adopted document UPOV/INF/22/5 “Software and equipment used by members of the Union”.

The TWC noted that the Office of the Union would issue a circular, inviting the designated persons of the members of the Union in the TC to provide or update information for document UPOV/INF/22.

### (e) Building a database with molecular marker information for the management of variety collections

The TWC considered document TWC/37/6 and received a presentation on “Plant DNA fingerprint database management system”. A copy of the presentation is provided in the Annex to document TWC/37/6.

## Date and place of the next session

At the invitation of the United States of America, the TWC agreed to hold its thirty-eighth session in Alexandria, Virginia, jointly with the BMT, during the week of September 21, 2020.

Future program

The TWC considered the organization of the TWC and BMT meetings in the same week.

The TWC noted the duplication of content presented at both the TWC and BMT meetings and agreed there should be a single opening and introductory parts for both meetings at the same time.

The TWC agreed that agenda items scheduled for discussion at its thirty-eighth session should be focused on relevant items for the group and all other items presented for information only.

The TWC agreed that agenda items should be grouped by topic in different days and participants informed in advance of the order of discussion.

The TWC agreed that the above proposals could enable the allocation of time during the meeting for a technical visit.

The TWC proposed to discuss the following items at its next session:

1. Opening of the Session
2. Adoption of the agenda
3. Short reports on developments in plant variety protection

(a) Reports from members and observers (written reports to be prepared by members and observers)

(b) Report on developments within UPOV (oral report by the Office of the Union)

1. Statistical methods (documents invited)

Document TGP/8

* + 1. Reorganization of document TGP/8 (document to be prepared by China)
    2. Genotype x Environment interaction (document to be prepared by Finland and Italy)
    3. The Combined Over Years Uniformity Criterion (COYU) (document to be prepared by the United Kingdom)

Document TGP/10

iv. Data processing for producing variety descriptions (document to be prepared by the United Kingdom)

1. Software, Information and databases (documents invited)

(a) UPOV information databases (document to be prepared by the Office of the Union)

(b) Variety description databases (document to be prepared by the Office of the Union and documents invited)

(c) Exchange and use of software and equipment (document to be prepared by the Office of the Union)

(d) UPOV PRISMA (document to be prepared by the Office of the Union)

(e) DUS Excel (document to be prepared by China)

(f) Validation of software (document to be prepared by the United Kingdom)

1. Molecular Techniques and bioinformatics (document to be prepared by the Office of the Union and documents invited)

Revision of document TGP/15 (document to be prepared by the Office of the Union)

1. Phenotyping and image analysis (documents invited)
2. Tools and methods for DUS examination (documents invited)
3. Date and place of the next session
4. Future program
5. Adoption of the Report on the session (if time permits)
6. Closing of the session

The TWC adopted this report at the end of the session.

[Annexes follow]

LIST OF PARTICIPANTS

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[Annex II follows]

*Please see Annex II in the PDF version*

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