UPOV

International Union for the Protection of New Varieties of Plants

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Thirty-Fifth Session
Buenos Aires, Argentina, November 14 to 17, 2017

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REPORT

adopted by the Technical Working Party on Automation and Computer Programs

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Opening of the session

1. The Technical Working Party on Automation and Computer Programs (TWC) held its thirty-fifth session in Buenos Aires, Argentina, from November 14 to 17, 2017. The list of participants is reproduced in Annex I to this report.

2. The session was opened by Mr. Adrian Roberts (United Kingdom), Chairman of the TWC, who welcomed the participants and thanked Argentina for hosting the TWC session. The TWC was welcomed by Mr. Raimundo Lavignolle, President, National Seeds Institute (INASE), Argentina. A copy of the presentation made by Mr. Lavignolle is reproduced in Annex II to this document. The TWC received a presentation by Mr. Alberto Ballesteros, Examiner for Cereal Cotton, Rice and Forage Crops, INASE, Argentina, a copy of which is reproduced in Annex III to this report.

Adoption of the agenda

3. The TWC adopted the agenda as presented in document TWC/35/1 Rev..

Short reports on developments in plant variety protection

Reports on developments in plant variety protection from members and observers

4. The TWC noted the information on developments in plant variety protection from members and observers provided in document TWC/35/3 Prov.. The TWC noted that reports submitted to the Office of the Union after November 1, 2017, would be included in the final version of document TWC/35/3.

5. The TWC noted the report and presentation made by an expert from the Netherlands on “Increasing participation of new members of the Union in the work of the TC and TWPs”, reproduced in document TWP/1/19.

6. The TWC considered how to increase participation of new members of the Union in the work of the TC and the TWPs and agreed to propose the following issues for further consideration:

- Cost of attendance to meetings, the timing during the year and venue location (field trials)
- Language difficulty (simultaneous interpretation in some cases),
- To use clear terminology in meetings (acronyms, technical terms)
- Relevance and quantity of topics to be discussed during TWP meetings
- To facilitate hosting of TWP meetings by new members
- Availability of information explaining the role and importance of TWPs (share information via YouTube; create a TWP Linkedin page)
- To improve targeting of invitations to meetings (reaching the right experts along with information on relevance of work of the TWPs).

Reports on developments within UPOV

7. The TWC received a presentation from the Office of the Union on the latest developments within UPOV, a copy of which is provided in document TWC/35/2.

Organization of the UPOV sessions

8. The TWC considered document TWP/1/24.

9. The TWC noted that the Council had decided:

(a) to organize a single set of sessions of the bodies that meet in Geneva from 2018, in the period of October/November;

(b) that the Enlarged Editorial Committee (TC-EDC) would meet twice a year, once in the period March/April and once in conjunction with the TC sessions later in the year;

(c) that Test Guidelines that could not be prepared in time for adoption by the TC at its session could be adopted by correspondence on the basis of the recommendations by the TC-EDC;

(d) to adopt the following contingency measures for 2018:

(i) for Test Guidelines proposed for adoption in 2018, to use a procedure for adoption by correspondence as follows:

- Draft Test Guidelines would be prepared as agreed by the TWPs and circulated with the recommendations of the TC-EDC;
- In the absence of any objections the Test Guidelines would be adopted;
- In the case of objections, the objections would be referred to the relevant TWP for consideration at their 2018 session, and the Test Guidelines considered for adoption by the TC at its fifty-fourth session, in 2018;
- TC-EDC to meet on March 26 and 27, 2018, and in conjunction with the TC at its fifty-fourth session, in 2018, if necessary.

(ii) for TGP documents, to invite the TC-EDC to consolidate comments made by the TWPs at their sessions in 2017 and, in the absence of consensus between the TWPs, formulate proposals for further consideration by the TWPs at their sessions in 2018;

(iii) all other matters to be considered at the fifty-fourth session of the TC in 2018 in the normal way.

10. The TWC noted that the TC had agreed to propose that the meetings of the BMT be held on an annual basis.

11. The TWC noted that the TC had agreed to propose that consideration be given to organizing the sessions of the TWC and BMT back-to-back in the same location to facilitate exchange of information.

12. The TWC noted that the TC had agreed that the preparatory workshops in 2018 should be organized on the Monday/Tuesday of the TWPs sessions to encourage participation by all TWP participants.

13. The TWC noted that from 2017, for certain documents, the TWPs would be invited to consider the same document on a particular topic, using a common document code.

14. The TWC agreed that the number of participants at BMT meetings and TWC sessions was different and agreed that this aspect should be taken into consideration when organizing back-to-back sessions.

15. The TWC discussed different possibilities for cooperation between the work of the BMT and the TWC such as on databases and bio-informatics. The TWC agreed that strengthening the cooperation between the work of the BMT and the TWC would require further consideration within UPOV.

16. The TWC agreed to invite members of the Union to make presentations on the use of different molecular marker techniques in DUS examination at its thirty-sixth session to explore possibilities for cooperation with the work of the BMT and noted the offer of the Netherlands to make such a presentation.

17. The TWC considered the scheduling of the preparatory workshops on the same day as the opening of the TWP sessions and agreed that holding a preparatory workshop at the start of the session was an opportunity for capacity-building for local staff. The TWC considered ways to further increase the participation of experts to the preparatory workshops and agreed that the following proposals could be further explored:

- to distribute the content of the preparatory workshop throughout the agenda of the TWPs as an introduction to the relevant topics;
- to revise the content of the preparatory workshop in line with the program of work for each TWP.

18. The TWC agreed that TWP documents concerning methods should provide a concise introduction to context in which the method was used. The TWC also agreed that experts present at the meeting should be invited to provide an introduction to the topic before discussing the document.

Assessing Uniformity by Off-Types on the Basis of More than One Growing Cycle or on the Basis of Sub-Samples

19. The TWC considered document TWP/1/17 Rev.

20. The TWC considered the draft guidance presented in Annexes I and II of document TWP/1/17 Rev. as amended by the TWPs, at their sessions in 2016, for inclusion in a future revision of document TGP/10.

21. The TWC agreed with the TWA that the new sentence introduced in the draft guidance, Annex I, should be amended to read as follows:

> "It is important to identify whether differences in number of off-types between growing cycles were due to ~~biological~~ environmental reasons or sampling variation."

22. The TWC considered whether a more general criteria should be used in Annex I for a variety to be rejected after a single growing cycle rather than the specific case of having exceeded the allowed number of off-types in two growing cycles. The TWC agreed that the predefined upper limit of the allowed number of off-types in two growing cycles was a useful reference for many crops and agreed to propose the draft guidance in approaches 1 and 2 to read as follows:

> "Furthermore, ~~on the basis of a clear lack of uniformity, a~~ if a variety clearly exceeds in the first growing cycle the allowed number of off-types in two growing cycles, the variety may be rejected after a single growing cycle."

23. The TWC noted that a proposal for revision of guidance in document TGP/8/2: Part II: Section 8: "The method of uniformity assessment on the basis of off-types", would be considered in document TWP/1/1 Rev. "TGP Documents".

24. The TWC considered document TWC/35/8 and received a presentation by an expert from the Netherlands on "Assessing Uniformity by Off-types on the Basis of More than One Growing Cycle: examples from NL", a copy of which is reproduced in the Annex to document TWC/35/8.

25. The TWC agreed that the different approaches used in the assessment of off-types on the basis of more than one growing cycle produced different results in some cases. The TWC agreed that smaller sample sizes and number of off-types allowed (e.g. vegetable crops) could highlight borderline cases where different results could be produced when using different approaches.

26. The TWC agreed that the different results obtained using the different approaches for the assessment of off-types on the basis of more than one growing cycle were due in part to the different risks of type I and type II errors associated with each approach. The TWC agreed to invite the experts from Germany, the United Kingdom and other members of the Union to submit papers on the analysis of risks associated with each approach to be considered at its thirty-sixth session.

Consideration of possible reorganization of TGP/8

Consideration of possible reorganization of TGP/8: a proposal from China

27. The TWC considered document TWC/35/11 and agreed to invite experts from China to provide further information on the background to the proposed revision of document TGP/8. The TWC agree to invite experts from Germany to offer to cooperate with the experts from China in developing the proposal and agreed that the topic should be further discussed at its thirty-sixth session.

TGP documents

28. The TWC considered documents TWP/1/1 Rev., TWP/1/9, TWP/1/11, TWP/1/12 and TWP/1/18.

29. The TWC noted the revisions of documents TGP/5, TGP/7 and TGP/14 agreed by the TC, as set out in document TWP/1/1 Rev., paragraphs 6 to 14 and Annexes I and II.

30. The TWC noted the proposals for future revisions of TGP documents to be discussed by the TWPs at their sessions in 2017, which would be dealt with under separate documents.

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

TGP/5: Section 1: Model Administrative Agreement for International Cooperation in the Testing of Varieties

Confidentiality of molecular information

32. The TWC considered document TWP/1/9.

33. The TWC considered the proposed guidance on confidentiality of molecular information for inclusion in document TGP/5, Section 1, as set out in document TWP/1/9, paragraph 4 (reproduced below).

> "4. It is proposed that Articles 4 and 6 of document TGP/5, Section 1 be revised to read as follows (proposed insertion of text indicated by highlighting and underlining):
>
> 'Article 4
>
> '(1) The Authorities shall take all necessary steps to safeguard the rights of the applicant.
>
> '(2) Except with the specific authorization of the Receiving Authority and the applicant, the Executing Authority shall refrain from passing on to a third person any material or molecular information of the varieties for which testing has been requested.
>
> […]
>
> 'Article 6
>
> 'Practical details arising out of this Agreement –regarding in particular the provisions relating to the considerations, application forms, technical questionnaires and requirements as to propagating material, testing methods, exchange of reference samples, exchange of molecular information, maintenance of reference collections and the presentation of the results– shall be specified in this Agreement or settled between the Authorities by correspondence.'"

34. The TWC agreed with the TWA, TWV, TWO and the TWF that clarification was needed to make sure that the term "material" includes "DNA material" and agreed to propose that Article 4(2) should read as follows:

> "(2) Except with the specific authorization of the Receiving Authority and the applicant, the Executing Authority shall refrain from passing on to a third person any material, including DNA, or molecular information of the varieties for which testing has been requested."

35. The TWC agreed with the TWF that certain information provided by the applicant might not be available due to trade secret agreement signed between the authority in charge of DUS and the applicant. In contrast, national legislation regarding official information may require passing other information to a third person.

TGP/7: Development of Test Guidelines

Duration of DUS tests

36. The TWC considered document TWP/1/11.

37. The TWC considered the proposed revision of document TGP/7 to clarify the duration of DUS testing, as set out in document TWP/1/11, paragraph 11:

"11. The following proposal has been developed on the basis of the comments of the TC:

"ASW 2(a):

'3. Method of Examination

'3.1 Number of Growing Cycles

'The ~~minimum~~ duration of tests should [normally]/[typically] be a single growing cycle.

'However, the testing of a variety may be terminated earlier if a negative conclusion on distinctness, uniformity or stability has already been reached.'

'Alternatively, the testing of a variety may be continued if a conclusion on distinctness, uniformity or stability has not been reached after the [normal]/[typical] duration of tests.

"ASW 2(b):

'3. Method of Examination

'3.1 Number of Growing Cycles

'The ~~minimum~~ duration of tests should [normally]/[typically] be two independent growing cycles.

'However, the testing of a variety may be terminated earlier if a negative conclusion on distinctness, uniformity or stability has already been reached.'

'Alternatively, the testing of a variety may be continued if a conclusion on distinctness, uniformity or stability has not been reached after the [normal]/[typical] duration of tests.' "

38. The TWC agreed with the TWA, TWV, TWO and the TWF that the term "normally" was preferred and should be used throughout the guidance in ASW 2.

39. The TWC noted the different views expressed by the TWA, TWV, TWO and TWF in relation to the text in Additional Standard Wording (ASW) 2 and Guidance Note (GN) 8 and agreed that it should be possible for the authority to terminate examination when the outcome of the test was determined.

Characteristics which only apply to certain varieties

40. The TWC considered document TWP/1/12.

41. The TWC agreed with the TWA, TWV, TWO and the TWF on the possibility to exclude varieties from observation on the basis of a preceding pseudo-qualitative or quantitative characteristic under particular circumstances, such as the impossibility to describe an organ that was not present in a variety or when variation existed only within a particular group of a crop.

42. The TWC agreed with the TWV, the TWO and the TWF that the approach of excluding varieties from observation on the basis of preceding PQ or QN characteristics should be used carefully and based on experience and discussions during the drafting of Test Guidelines, in order to be fully aware on the consequences.

TGP/14: Glossary of Terms Used in UPOV Documents

Illustrations for shape and ratio characteristics

43. The TWC considered document TWP/1/18.

44. The TWC agreed with the TWA, TWV and TWF that no additional examples were available at this time for improving the guidance on providing illustrations for shape and ratio characteristics in document TGP/14.

Number of growing cycles in DUS examination

45. The TWC considered document TWP/1/21.

46. The TWC noted the presentations made to the TWPs at their sessions in 2016, simulating the impact of using different numbers of growing cycles on DUS decisions using actual data, as set out in the Annexes to document TWP/1/21.

47. The TWC noted that the TC had agreed that the number of growing cycles for DUS examination should be the minimum necessary for a robust DUS decision and the establishment of a reliable variety description.

48. The TWC noted that the TC had agreed that it was not appropriate to generalize that ornamental varieties should be examined in a single growing trial while other types of crops should be examined in two growing cycles and had agreed that the typical number of growing cycles should be established on a crop-by-crop basis

49. The TWC considered document TWC/35/7 and received a presentation by an expert from the Netherlands on “Number of Growing Cycles in Potato”, containing the results of the simulation on the impact of using different numbers of growing cycles on DUS decisions using actual data for potato. A copy of the presentation is reproduced in the Annex to document TWC/35/7.

50. The TWC noted that the results demonstrated that from the 37 characteristics observed, 73% would have had the same score and 24% would have had differences of only one note between the first growing cycle and the note from the first and second growing cycles combined.

51. The TWC noted that the Netherlands was exploring the possibility of using molecular marker information to reduce the number of growing cycles for DUS examination of potato varieties.

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

52. The TWC considered document TWP/1/15.

53. The TWC noted that the TC had agreed to invite the experts from France to check the highlighted values in the table in document TWP/1/15, Annex II “Comparison of methods used for producing variety descriptions: results of the practical exercise”, paragraph 6, for possible data inconsistency.

54. The TWC considered document TWC/35/9 “Comparison of methods used for producing variety descriptions: results of the practical exercise” and the revised information provided by an expert from France in relation to the comparison of methods used for producing variety descriptions. The TWC agreed that the document provided a useful comparison of methods for the future guidance on converting observations into notes. The TWC agreed that the table of notes attributed to candidate varieties using the different methods as provided in document TWC/35/9 should replace that of document TWP/1/15, Annex II.

55. The TWC noted that the TC had agreed to invite participants in the practical exercise to provide a short description of their methods to transform measurements into notes and provide examples when these methods might be used, such as for particular characteristics, types of propagation or different situations, on the basis of the short descriptions provided by France and the United Kingdom, as set out in document TWP/1/15, Annexes III to V.

56. The TWC considered documents TWC/35/10 “Guidance for development of variety descriptions: the Italian experience”, TWC/35/12 “Short explanation on the Japanese methods for assessment table for

producing variety descriptions", TWC/35/14 "Reasons and situations when the approaches described in the United Kingdom practical exercise (TWC/30/32) would/would not be appropriate for transforming observations into notes on measured, quantitative characteristics", and TWC/35/15 "Short explanation on some United Kingdom methods for data processing for the assessment of distinctness and for producing variety descriptions for quantitative characteristics" and reviewed the explanations provided by the participants in the practical exercise to be considered as a possible basis for guidance for revision of document TGP/8.

57. The TWC noted the explanation by the expert from Italy that the method described in document TWC/35/10 was still under development and agreed that it should be included in the draft guidance at a future stage.

58. The TWC agreed to invite Germany to provide a short description of their method to transform measurements into notes and provide examples when these methods might be used, such as for particular characteristics, types of propagation or different situations.

59. The TWC agreed that the explanation provided by the expert from the United Kingdom in document TWC/35/14, paragraph 5 should be amended to read as follows:

"Equal-spaced states would be used if:
[…]
- ~~where~~ the range of values is continuous"

60. The TWC noted that explanations provided by the participants in the practical exercise presented information in different ways. The TWC agreed to request the expert from the United Kingdom to prepare a document for the thirty-sixth session of the TWC compiling all explanations received using the same format and clarifying the differences.

61. The TWC considered document TWC/35/5 "Characteristics, genotype by environment interaction (GEI) and DUS trials" which was a summary of the presentation in document TWC/34/17 "Genotype by environment interaction (GEI) - DUS Test and data transformation into notes", made by experts from Finland and Italy. The TWC agreed that document TWC/35/5 provided relevant information for future guidance on transformation of observations into notes and agreed to request the expert from the United Kingdom to take that information into consideration when preparing the document compiling the explanations of methods received and clarifying the differences.

62. The TWC considered the report on the work done by Germany on "Variability of assessment data over years in apple", on the basis of the presentation reproduced in document TWP/1/15, Annex VI. The TWC noted that the variety descriptions were produced on the basis of assessing the same trees in different years. The TWC agreed that the growing trial needed appropriate management in order for the replications over years to be considered as independent growing cycles and to produce consistent descriptions.

Molecular Techniques

63. The TWC considered document TWP/1/7.

Developments in the TC, the TWPs and the BMT in 2016

64. The TWC noted the report on developments in the TC, the TWPs and the BMT, as set out in document TWP/1/7, paragraphs 5 to 24.

OECD/UPOV/ISTA/AOSA Joint Workshop on Molecular Techniques

65. The TWC noted that a Joint OECD/UPOV/ISTA/AOSA Workshop on Biochemical and Molecular Methods had been held in Paris on June 8, 2016, and that the recommendations of the Joint OECD/UPOV/ISTA/AOSA Workshop, as reproduced below, had been approved by the Annual Meeting of the OECD Seed Schemes, held in Paris on June 9 and 10, 2016:

(a) "To develop a joint document explaining the principal features (e.g. DUS, variety identification, variety purity, etc.) of the systems of OECD, UPOV, AOSA and ISTA and, for mutual understanding, to repeat the joint workshop at relevant meetings of the OECD and ISTA;

(b) "To carry out a joint inventory by UPOV, OECD, AOSA and ISTA of the use of molecular marker techniques, by crop, with a view to developing a document containing that information. The OECD will contribute to the document by sharing the ongoing list of molecular techniques used by National Designated Authorities (NDAs) and continuously collected by the Secretariat;

(c) "To develop a list of terms and their definitions as used by OECD, UPOV, AOSA and ISTA and to make an attempt to harmonize these;

(d) "To consider organizing another similar workshop in three years' time; and

(e) "To consider replacing the term used in the OECD Seed Schemes for the status of DNA based techniques from "internationally validated" to another term such as "internationally harmonized."

Presentation of information on the situation in UPOV with regard to the use of molecular techniques

66. The TWC noted that the following question and answer (FAQ) concerning the information on the situation in UPOV with regard to the use of molecular techniques for a wider audience, including the public in general, had been adopted by the Council, at its fiftieth ordinary session held in Geneva on October 28, 2016:

"Is it possible to obtain protection of a variety on the basis of its DNA-profile?

"For a variety to be protected, it needs to be clearly distinguishable from all existing varieties on the basis of characteristics that are physically expressed, e.g. plant height, time of flowering, fruit color, disease resistance etc. The DNA-profile is not the basis for obtaining the protection of a variety, although this information may be used as supporting information.

"A more detailed explanation is provided in the FAQ 'Does UPOV allow molecular techniques (DNA profiles) in the examination of Distinctness, Uniformity and Stability ('DUS')?

"See also: 'What are the requirements for protecting a new plant variety?'"

67. The TWC noted that the TC, at its session in 2017, had agreed that possible future collaboration between UPOV, the Organization for Economic Co-operation and Development (OECD) and the International Seed Testing Association (ISTA) might include the harmonization of terms and methodologies used for different crops and the possible development of standards, after agreement by those organizations.

68. The TWC noted that two practical workshops on "DNA Techniques and Variety Identification" had been held in Roelofarendsveen, Netherlands, from May 8 to 10, 2017, and from September 20 to 22, 2017.

69. The TWC noted that the TC had agreed that UPOV and the OECD should consider making progress in collaboration on the matters above if ISTA was unable to participate in the near future.

70. The TWC noted that the TC had agreed to propose that the meetings of the BMT be held on an annual basis and that consideration be given to organizing the sessions of the TWC and BMT back-to-back in the same location to facilitate exchange of information.

71. The TWC received an oral presentation by an expert from Argentina. The TWC noted that Argentina was using molecular marker information for the management of variety collections and planned to integrate this information with the GAIA software.

72. The TWC noted that Argentina was considering the use of GAIA software to manage molecular marker information and agreed to invite Argentina to make a presentation at its thirty-sixth session on their experience in building a database with molecular marker information for the management of variety collections.

Statistical methods

Excluding varieties of common knowledge from the second growing cycle

73. The TWC considered documents TWP/1/22 and TWC/35/13 "Thresholds for Excluding Varieties of Common Knowledge from the Second Growing Cycle when COYD is used" and received a presentation by an expert from the United Kingdom, a copy of which is reproduced in the Annex to document TWC/35/13 Add.

74. The TWC noted the recent developments and the indications of COYD thresholds for excluding varieties of common knowledge from the second growing cycle on the basis of data sets of meadow fescue, red clover, timothy, perennial ryegrass, pea (semi-leafless) and pea (conventional).

75. The TWC noted that the method was most applicable to crops with large numbers of varieties of common knowledge and where current trial sizes are large. The TWC noted the plans of the United Kingdom to test the method on a large data set of oilseed rape.

76. The TWC noted that the code had been developed using "R" software which could be linked to the GAIA software to support determining the thresholds for excluding varieties from the second growing cycle when COYD was used.

Statistical methods and software for visually observed characteristics

77. The TWC considered document TWP/1/23

78. The TWC noted that the TC, at its fifty-third session, had agreed that the appropriate naming and drafting of guidance on the method developed by experts from Denmark and Poland should be considered once further experience had been acquired and software had been made available to facilitate its use in DUS examination.

79. The TWC noted the report by an expert from France that software to implement the method developed by experts from Denmark and Poland could only be developed once the development of the statistical method was completed.

80. The TWC agreed to invite the experts from France and the United Kingdom to further develop the method and invited contributions of examples applying the method in suitable characteristics for other crops to be presented at its thirty-sixth session.

The Combined-Over-Years Uniformity Criterion (COYU)

81. The TWC considered documents TWP/1/13 and TWC/35/6 "Method of calculation of COYU: practical exercise, probability levels, extrapolation and software" and received a presentation by the United Kingdom, a copy of which is provided in document TWC/35/6 Add.

82. The TWC considered the report on developments concerning the new method of calculation of COYU, provided by an expert from the United Kingdom and noted that the statistical development of the method had been completed.

83. The TWC noted the results of the practical exercise and higher probability levels required by the new method to most closely match decisions using the current method for calculation of COYU

- probability levels 0.003 to match 0.001 for current COYU
- probability levels 0.02 to match 0.01 for current COYU

84. The TWC noted the following areas identified for further improving the software using the new method of calculation of COYU and agreed to invite the expert from the United Kingdom to report on developments at its thirty-sixth session:

- Improve installation with DUST
- Improve error messages
- Ensure that problematic data sets can be dealt with appropriately
- Produce extrapolation flags according to approach agreed by TWC
- Ensure that the algorithm works well for unbalanced data (for cyclic planting).

<u>Image analysis</u>

85. The TWC considered document TWP/1/10 and noted the invitation of China for experts to join its project for the improvement of software for image analysis

86. The TWC agreed that it would be useful to have information on latest developments on the project for improving the software by China and agreed to invite China to make presentation at its thirty-sixty session. The TWC agreed that the translation of user interfaces using Roman alphabet could facilitate future cooperation on the project.

87. The TWC noted the difficulty reported by members to establish algorithms that could adequately manage different shapes and plant structures (e.g. wavy leaves, wrinkled surfaces).

88. The TWC noted the experiences reported on the use of image analysis by the following members:

- Czech Republic – analysis in oilseed rape and pea Matlab software;
- France –assessment of color in ornamental plants (RHS Colour Chart), estimation of foliar area for disease infection using softwares AIM and IMAGEJ;
- Finland – rye seed length using Image Tool software;
- Germany – some ornamentals and agricultural crops using in-house developed software;
- Italy – rice seed: length and width;
- Netherlands – flax length/width ratio, sugar beet cotyledons, pea, bean, shape of carrots and onions;
- United Kingdom – pea: pods, leaflets, stems; parsnip;

89. The TWC agreed that new advances on image analysis should be reported at its thirty-sixth session.

Guidance for drafters of Test Guidelines

90. The TWC considered document TWP/1/8 and received a demonstration of the web-based TG template by the Office of the Union.

91. The TWC noted the items resolved in Version 1.0 of the web-based TG template, as set out in document TWP/1/8, paragraph 18. The TWC noted the issues currently addressed on the web-based TG template for inclusion during the second semester of 2017, as set out in document TWP/1/8, paragraph 30. The TWC noted that a general revision of the software code was underway to eliminate remaining reported malfunctioning issues and to stabilize the system.

92. The TWC noted the issues to be considered for inclusion in Version 2 of the web-based TG Template, as set out in document TWP/1/8, paragraph 21.

93. The TWC noted that training on the use of the web-based TG template would be offered to the TWPs at their sessions in 2017, during the preparatory workshops of the sessions and during discussions on agenda item “guidance for drafters of Test Guidelines”.

94. The TWC noted that feedback and questions could be provided directly via the web-bases TG template, as set out in document TWP/1/8, paragraph 33.

Software, Information and databases

Exchange and use of software and equipment

95. The TWC considered document TWP/1/5.

96. The TWC noted that the Council, at its fiftieth ordinary session, held in Geneva, on October 28, 2016, had adopted document UPOV/INF/16/6 “Exchangeable Software”, with the deletion of the SIVAVE software.

97. The TWC noted that the Council had adopted document UPOV/INF/16/7 at its fifty-first ordinary session held on October 26, 2017, on the basis on the proposals of the TC, at its fifty-third session, as agreed by the CAJ at its seventy-fourth session.

98. The TWC noted that the TC had agreed that the information presented in document UPOV/INF/16 should be made available in a searchable form on the UPOV website, and had noted that the Office of the Union would investigate a tool for that purpose.

99. The TWC noted that the Council, at its fiftieth ordinary session, held in Geneva, on October 28, 2016, had adopted document UPOV/INF/22/3 “Software and equipment used by members of the Union”.

100. The TWC noted the information received from Estonia, the Russian Federation and the United Kingdom in response to circular E-16/290 as approved by the TC at its fifty-third session, was included in document TWP/1/5, Annex II.

101. The TWC noted that the TC, at its fifty-third session, had agreed to propose the addition of a disclaimer to document UPOV/INF/22 explaining that the document was intended to provide information on the use of software and equipment by members of the Union and to clarify that that neither UPOV nor the contributing Authority were responsible for the performance of the software or equipment.

102. The TWC noted that the TC had considered whether the information in document UPOV/INF/22 should be presented in an alternative form (e.g. on-line format) rather than an INF document and had agreed that only the existing document UPOV/INF/22 format should be maintained.

103. The TWC noted that the Council had adopted document UPOV/INF/22/4 at its fifty-first ordinary session held on October 26, 2017, on the basis on the proposals of the TC, at its fifty-third session, as agreed by the CAJ at its seventy-fourth session.

104. The TWC received a presentation by an expert from Argentina on “Argentine experience on GAIA software”, a copy of which would be provided as document TWC/35/19. The TWC noted that Argentina was currently working on GAIA thresholds to select similar varieties in soybean, wheat, grapevine and sunflower. The TWC noted that Argentina planned to include molecular markers information for the management of variety collections with the aim of reducing the size of trials for the assessment of distinctness in soybean.

Electronic application systems

105. The TWC considered document TWP/1/3 and received a presentation by the Office of the Union on “Electronic application form”, a copy of which would be provided as an Addendum to document TWP/1/3.

106. The TWC noted that the electronic application form was to be re-named “PRISMA”. The TWC noted that an interface had been created between the web-based TG Template and PRISMA in order for PRISMA to use the information on characteristics in the Technical Questionnaire of Test Guidelines. The TWC noted the importance of informing breeders about PRISMA and invited members to provide information through UPOV sources (e.g. UPOV PRISMA web page, LinkedIn showcase page).

Implementation of a Document Management System for Variety Files

107. The TWC considered document TWC/35/16.

108. The TWC received an oral presentation by an expert from Germany and noted the new functions added to the system, such as separate post inboxes for users and groups and definition of favorite files. The TWC noted that the system provided electronic management of different types of documents, including applications for plant variety protection, internal communications and procurement files.

Software for statistical analysis

109. The TWC considered document TWP/1/16 and noted the developments concerning software for statistical analysis in DUS examination, as set out in document TWP/1/16, paragraphs 3 to 7.

A single tool for DUS computation process

110. The TWC considered document TWC/35/17 and received a presentation by an expert from France on “A single tool for DUS computation process”, a copy of which is reproduced in the Annex to document TWC/35/17.

111. The TWC noted the structure of the interface with the statistical parts of the COYD and COYU processes, storage of statistical data and reports generated by the GAIA software.

112. The TWC agreed to invite France to report on progress in the development of a single tool for DUS computation process at the thirty-sixth session of the TWC.

Management of variety collections

113. The TWC considered document TWP/1/14 and noted the developments reported to the TC at its fifty-third session in 2017, on management of variety collections.

Management of databases

114. The TWC considered document TWC/35/4 and received a presentation by the Office of the Union on "Information Retrieval from UPOV Databases using national systems", a copy of which would be made available as an addendum to document TWC/35/4.

115. The TWC noted that the use of robots to retrieve information from the GENIE database generated dense traffic, causing the UPOV server to crash. The TWC noted that UPOV offered web services (machine–to-machine communication) to exchange data with external systems based on defined input and output formats (contract).

116. The TWC suggested that the Office of the Union provide documentation on the UPOV website on the web services offered. .

UPOV information databases

117. The TWC considered document TWP/1/4.

GENIE database

118. The TWC noted that a specification document explaining the data structure and functions of the GENIE database was being developed by the Office of the Union in order that IT related maintenance could be provided in the future.

UPOV code system

119. The TWC noted that:

(a) 173 new UPOV codes had been created in 2016 and that a total of 8,149 UPOV codes were included in the GENIE database.

(b) the Office of the Union had received a request from the OECD to create new UPOV codes for 191 forest-tree species moving in international trade under the OECD certification schemes.

(c) the TC, at its fifty-third session, had agreed that it would not be appropriate to revise the Guide to the UPOV Code System in relation to the principal botanical name for inter-generic and interspecific hybrids, as set out in document TWP/1/4, paragraph 18.

(d) the TC had noted that, in order to avoid any misinterpretation, the CPVO would make it clear that the information provided to the Office of the Union would be in alphabetical order.

PLUTO database

120. The TWC noted the summary of contributions to the PLUTO database from 2013 to 2016 and the current situation of members of the Union on data contribution, as presented in document TWP/1/4, Annex I.

121. The TWC noted that the WG-DEN, at its third meeting, held in Geneva on April 7, 2017, had agreed that agenda item 5 "Expansion of the content of the PLUTO database" would be considered at a later meeting on the basis of the document presented at its second meeting.

Variety description databases

122. The TWC considered document TWP/1/2.

123. The TWC noted the information on presentations on databases made at the BMT and TWV at their sessions in 2016.

124. The TWC noted that the TC had agreed that UPOV might be able to facilitate cooperation in the establishment of common databases containing molecular information by the provision of training and sharing of information.

125. The TWC noted that the TC had agreed on the value of inviting the contribution of breeders and academic institutions to UPOV's work on the constitution and maintenance of databases.

126. The TWC noted that Information collected on existing databases containing morphological and/or molecular data could be included in the GENIE database, subject to the availability of resources for the modification of the GENIE database.

127. The TWC received a presentation by the Office of the Union on "Standards for databases containing molecular information", a copy of which would be provided as document TWC/35/20. The TWC noted the offer for interested members to participate in the test campaigns to develop the ST-26 standard for the presentation of nucleotide and amino acid sequence listings using XML.

Procedure for partial revision of UPOV Test Guidelines

128. The TWC considered document TWP/1/20.

129. The TWC noted the procedures for notification of new characteristics or states expression in document TGP/5, Section 10: "Notification of additional characteristics and states of expression".

130. The TWC noted that the TC had encouraged Authorities to notify the use of new characteristics or states expression using the procedure established in document TGP/5, Section 10. The TWC noted for some UPOV members, characteristics would only be added after being incorporated in UPOV Test Guidelines.

Variety denominations

131. The TWC considered document TWP/1/6.

132. The TWC noted the 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/1/6, paragraphs 5 to 12.

133. The TWC noted the developments concerning a UPOV similarity search tool for variety denomination purposes, as set out in document TWP/1/6, paragraphs 13 to 20.

134. The TWC noted the developments concerning the possible expansion of the content of the PLUTO Database, as set out in document TWP/1/6, paragraphs 21 to 26.

135. The TWC noted the developments concerning non-acceptable terms, as set out in document TWP/1/6, paragraphs 27 to 32.

136. The TWC noted the agenda of the fourth meeting of the Working Group on Variety Denominations (WG-DEN), as set out in document TWP/1/6, and noted that the meeting had been held in Geneva, on October 27, 2017.

Date and place of the next session

137. At the invitation of Germany, the TWC agreed to hold its thirty-sixth session in Hanover, Germany, from July 2 to 6, 2018, with a preparatory workshop on the morning of July 2, 2018.

Future program

138. The TWC discussed the assessment of distinctness on the basis of two or more environments in the same year and agreed there was little guidance on the topic. The TWC recalled that document TG/1/3 “General introduction to the examination of DUS and the development of harmonized descriptions of new varieties of plants”, Section 5.3.3.1.1 states that:

> "One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic on at least two independent occasions. This can be achieved in both annual and perennial varieties by observations made on plantings in two different seasons or, in the case of other perennial varieties, by observations made in two different seasons after a single planting. Guidance on the possible use of other approaches, such as two different environments in the same year, is explored in document TGP/9, “Examining Distinctness.”

139. Document TGP/8 “Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability”, Section 1.2.2.6 states that "Where two growing cycles are conducted in the same year and at the same time, a suitable distance or a suitable difference in growing conditions between two locations may satisfy the requirement for independence."

140. The TWC agreed to invite members of the Union to make presentations at its thirty-sixth session on assessing distinctness on the basis of two environments in the same year and noted the offers by France and the Netherlands to make such presentations. The TWC agreed that presentations might include the factors when considering such an approach, how to choose trial sites as well practical aspects such as management, software and statistical concerns and management of variety collections.

141. The TWC discussed the provision of web services and agreed to invite presentations on the different web services offered by UPOV and experiences on the provision of similar services provided by members of the Union.

142. 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 (document to be prepared by the Office of the Union)
4. Variety denominations (document to be prepared by the Office of the Union)
5. TGP documents (document to be prepared by the Office of the Union)
6. Consideration of possible reorganization of document TGP/8 (document to be prepared by China)
7. Assessing Uniformity by Off-Types on the Basis of More than One Growing Cycle or on the Basis of Sub-Samples (document to be prepared by the Office of the Union)
   - Risks associated with assessment of uniformity by off-types on the basis of more than one growing cycle (document to be prepared by Germany and the United Kingdom)
8. Molecular Techniques (document to be prepared by the Office of the Union, the Netherlands and documents invited)
   - (a) Selection of similar varieties for maize, rice and wheat using a DNA database (document to be prepared by China)
   - (b) Statistical methods and software tools for molecular techniques in DUS examination (documents to be prepared by France, Germany and the United Kingdom and documents invited)
9. Number of growing cycles in DUS examination (document to be prepared by the Office of the Union)
10. Data Processing for the Assessment of Distinctness and for Producing Variety Descriptions (document to be prepared by the Office of the Union and documents invited)
    - Draft guidance on data processing for the assessment of distinctness and for producing variety descriptions using different methods (document to be prepared by the United Kingdom)

11. Software, Information and databases

    (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 and documents invited)

    (d) Electronic application systems (document to be prepared by the Office of the Union and documents invited)

    (e) A single tool for DUS computation process (document to be prepared by France)

    (f) Management of databases (documents invited)

    (g) Building a database with molecular marker information for the management of variety collections (document to be prepared by Argentina)

    (h) Document management system for variety files (document to be prepared by Germany)

    (i) Web services provided by UPOV and members of the Union (document to be prepared by the Office of the Union and France and documents invited)

12. Statistical methods

    (a) Statistical methods and software for visually observed characteristics (document to be prepared by France and the United Kingdom and documents invited)

    (b) The Combined-Over-Years Uniformity Criterion (COYU) (document to be prepared by the United Kingdom)

13. Image analysis (documents invited)

14. Experience with using two locations by one year for DUS decisions (documents to be prepared by France and the Netherlands)

15. Guidance for drafters of Test Guidelines (document to be prepared by the Office of the Union)

16. Date and place of the next session

17. Future program

18. Adoption of the Report on the session (if time permits)

19. Closing of the session

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

[Annexes follow]

ANNEX I

LIST OF PARTICIPANTS

I. MEMBERS

ARGENTINA

Raimundo LAVIGNOLLE (Mr.), Presidente del Directorio, Ministerio de Agroindustria, Venezuela 162. 11º, C1095AAD Buenos Aires
(tel.: +54 11 3220 5431 e-mail: rlavignolle@inase.gov.ar)

Hernando Adrián PECCI (Mr.), Director, Varieties Direction, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Venezuela 162, 3° P, 1095 Buenos Aires
(tel.: +54 11 3220 5424 fax: +54 11 3220 5425 e-mail: hpecci@inase.gov.ar)

Alberto BALLESTEROS (Mr.), Examiner for Cereal, Cotton, Rice and Forage Crops, Registro de Variedades, Ministerio de Agroindustria, Venezuela 162, 3 piso, of. 347, 1095 Buenos Aires
(tel.: +54 11 3220 5426 fax: +54 11 3220 5425 e-mail: aballesteros@inase.gov.ar)

Ignacio TALADRID (Mr.), Examiner for Corn, Sorghum and Sunflower, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Venezuela 162., C1095AAD Buenos Aires
(tel.: +54 11 3220 5426 e-mail: italadrid@inase.gov.ar)

María Fernanda DALMAU (Ms.), Profesional en Análisis de Variedades de Soybean, Dirección de Registro de variedades, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Venezuela 162., C1095AAD Buenos Aires
(tel.: +54 11 3220 5426 e-mail: mfdalmau@inase.gov.ar)

María Lilia LOSADA (Ms.), Examiner, Ornamental, Forest, Fruit Species, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Venezuela 162., C1095AAD Buenos Aires
(tel.: +54 11 3220 5426 e-mail: mlosada@inase.gov.ar)

Mariano Alejandro MANGIERI (Mr.), Soybean Examiner, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Venezuela 162., C1095AAD Buenos Aires
(tel.: +54 11 3220 5426 fax: +54 11 3220 5425 e-mail: mmangieri@inase.gov.ar)

Matías CUSENIER (Mr.), Analista de Variedades vegetales, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Venezuela 162., C1095AAD Buenos Aires
(tel.: +54 11 3220 5426 e-mail: mcusenier@inase.gov.ar)

Ana Laura VICARIO (Ms.), Head of Phytopathology and Molecular Markers Lab., Quality Department, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Av. Paseo Colón 922, piso 4º., C1063ACW., C1095AAD Buenos Aires
(tel.: +54 11 4349 2037 fax: +54 11 4349 2496 e-mail: alvicario@inase.gov.ar)

Cecilia BURGOS (Ms.), Analyst, Quality Direction, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Av. Paseo Colón 922, piso 4º., C1063ACW Buenos Aires
(e-mail: cburgos@inase.gov.ar)

Julieta CARRIÑO (Ms.), Analyst, Quality Direction, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Av. Paseo Colón 922, piso 4º., C1063ACW Buenos Aires

María Alicia LORAY (Ms.), Técnico investigador, Quality Direction, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Av. Paseo Colón 922, piso 4º., C1063ACW Buenos Aires
(e-mail: mloray@inase.gov.ar)

María Julia GARCÍA VAMPA (Ms.), Analyst, Quality Direction, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Av. Paseo Colón 922, piso 4º., C1063ACW Buenos Aires
(e-mail: mvampa@inase.gov.ar)

Verónica María CAUTERUCCI (Ms.), Analyst, Quality Direction, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Av. Paseo Colón 922, piso 4º., C1063ACW Buenos Aires
(e-mail: vcauterucci@inase.gov.ar)

Ernesto Mario LOPONTO (Mr.), Coordinador de informática, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Av. Paseo Colón 922, piso 4º., C1063ACW Buenos Aires
(e-mail: eloponto@inase.gov.ar)

Mariano Andrés RODRÍGUEZ (Mr.), Software Development, IT Coordination Office, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Av. Paseo Colón 922, piso 4º., C1063ACW Buenos Aires
(e-mail: mrodriguez@inase.gov.ar)

Matías Ariel DUARTE (Mr.), Software Development, IT Coordination Office, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Av. Paseo Colón 922, piso 4º., C1063ACW Buenos Aires
(e-mail: mduarte@inase.gov.ar)

Silvana BALBO (Ms.), Head of Communication Coordination, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Venezuela 162., C1095AAD Buenos Aires
(e-mail: sbalbo@inase.gov.ar)

Cintia Mailen DI LALLA (Ms.), Administrative, Communication Coordination, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Venezuela 162., C1095AAD Buenos Aires
(e-mail: cdilalla@inase.gov.ar)

Sofía FRIGHETTO (Ms.), Administrative, Communication Coordination, Instituto Nacional de Semillas (INASE), Ministerio de Agroindustria, Venezuela 162., C1095AAD Buenos Aires

CZECH REPUBLIC

Martin TLÁSKAL (Mr.), Biometrician specialist, Hroznová 2, 656 06 Brno
(tel.: +420 543 548 385 e-mail: martin.tlaskal@ukzuz.cz)

FINLAND

Sami MARKKANEN (Mr.), Senior Officer, Control Department, Finnish Food Safety Authority (EVIRA), Tampereentie 51, P.O. Box 111, FI-32201 Loimaa
(tel.: +358 40 8294543 fax: +358 29 530 5318 e-mail: sami.markkanen@evira.fi)

FRANCE

Christophe CHEVALIER (Mr.), Manager, IT Department, Groupe d'étude et de contrôle des variétés et des semences (GEVES), rue Georges Morel, BP 90024, 49071 Beaucouzé
(tel. : +33 2 41 22 86 36 fax : +33 2 41 22 86 02 e-mail : christophe.chevalier@geves.fr)

GERMANY

Uwe MEYER (Mr.), Head of IT section, Bundessortenamt, Osterfelddamm 80, D-30627 Hannover
(tel.: +49 511 9566 5689 fax: +49 511 9566 9689
email: uwe.meyer@bundessortenamt.de)

Thomas DROBEK (Mr.), Referat 111,Bundessortenamt, Osterfelddamm 80, D-30627 Hannover
(tel.: +49 511 9566 5688 fax: +49 511 9566 9600
e-mail: thomas.drobek@bundessortenamt.de)

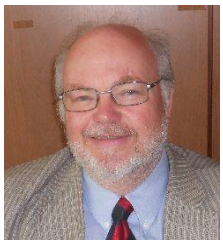
ITALY

Maurizio GIOLO (Mr.), Senior Scientist, CREA-DC, Research Centre for Plant Protection and Certification, Via Marconi, 2 36045 Lonigo (VI) – ITALY
(tel.: +39 0444 1808700 fax: +39 0444 1808722 e-mail: maurizio.giolo@crea.gov.it)

JAPAN

Hiroshi UCHIZAWA (Mr.), Senior Examiner, Plant Variety Protection Office, Intellectual Property Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8950
(tel.: +81 3 6738 6466 fax: +81 3 3502 6572 e-mail: hiroshi_uchizawa450@nm.maff.go.jp)

NETHERLANDS



Kees VAN ETTEKOVEN (Mr.), Senior PVP Policy Advisor, Naktuinbouw NL, Sotaweg 22, 2371 GD Roelofarendsveen
(tel.: +31 71 332 6128 fax: +31 611 360675 e-mail: c.v.ettekoven@naktuinbouw.nl)

Lysbeth HOF (Ms.), DUS Specialist, arable crops, Naktuinbouw NL, Sotaweg 22, 2371 GD Roelofarendsveen
(tel.: +31 6 29 55 06 26 fax: +31 71 3326363 e-mail: l.hof@naktuinbouw.nl)

UNITED KINGDOM

Adrian M. I. ROBERTS (Mr.), , External Development Manager, Biomathematics & Statistics Scotland (BioSS), JCMB, King's Buildings, Peter Guthrie Tait Road, Edinburgh EH9 3FD, UK
(tel.: +44 131 650 4893 fax: +44 131 650 4900 e-mail: a.roberts@bioss.ac.uk)

Sally WATSON (Ms.), Consultant Statistician, Statistical Services Branch, Agri-Food & Biosciences Institute, 18a, Newforge Lane, Belfast BT9 5PX
(tel.: +44 28902 55 292 fax: +44 28902 55 008 e-mail: sally.watson@afbini.gov.uk)

II. OFFICER

Adrian M.I. ROBERTS (Mr.), Chair

III. OFFICE OF UPOV

Leontino REZENDE TAVEIRA (Mr.), Technical/Regional Officer (Latin America, Caribbean), International Union for the Protection of New Varieties of Plants (UPOV), Geneva 1211, Switzerland
(tel.: +41 22 338 9565 fax: +41 22 733 0336 e-mail: leontino.taveira@upov.int)

Hend MADHOUR (Ms.), Data Modeler, International Union for the Protection of New Varieties of Plants (UPOV), Chemin des Colombettes 34,
1211 Geneva 20, Switzerland
tel.: +41 22 338 8352 fax: +41 22 733 0336 e-mail: hend.madhour@upov.int)

Chao DENG (Mr.), Intern, International Union for the Protection of New Varieties of Plants (UPOV), Chemin des Colombettes 34, 1211 Geneva 20, Switzerland
(tel.: +41 22 338 9980 fax: +41 22 733 0336 e-mail: chao.deng@upov.int)

[Annex II follows]

ANNEX II

OPENING REMARK BY MR. RAIMUNDO LAVIGNOLLE, *PRESIDENTE DEL DIRECTORIO*, NATIONAL SEED INSTITUTE, ARGENTINA

1 – Introduction

2 – National Legislation on Plant Variety Protection

3 - DUS in Argentina

4 – Situation of PVP in Argentina

5 – Future

1 – Introduction

1935/36

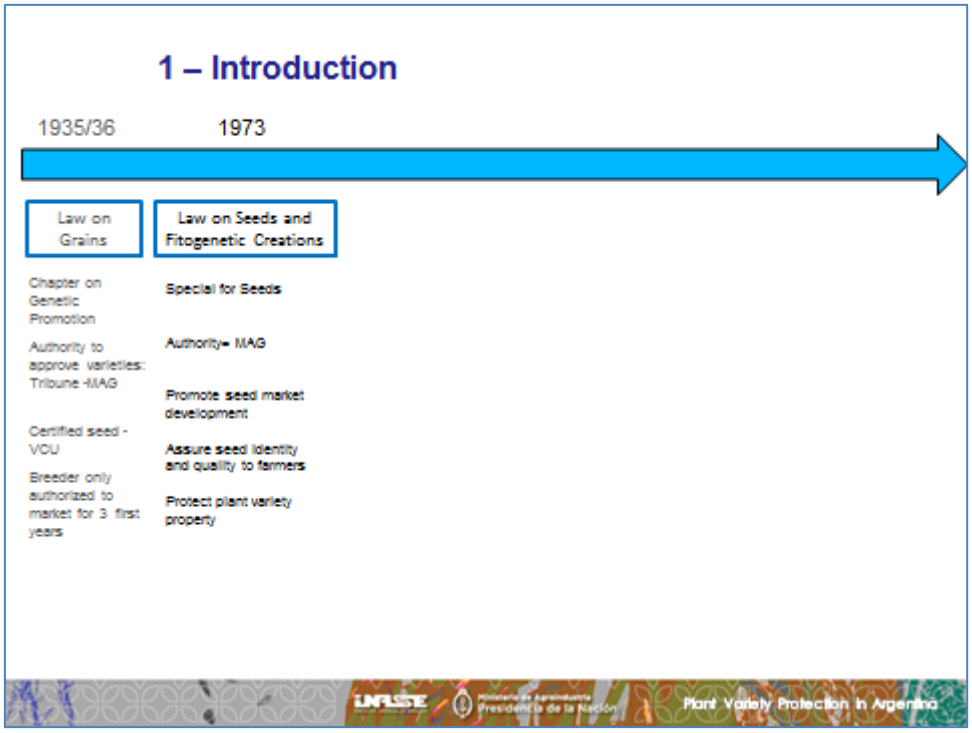
Law on Grains

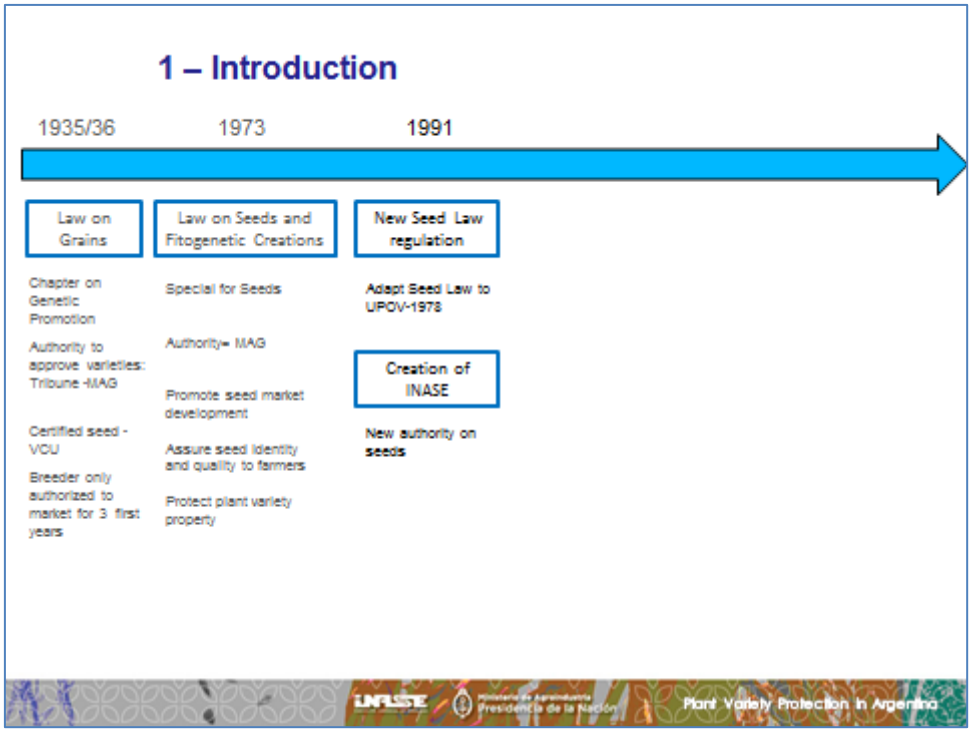
Chapter on Genetic Promotion

Authority to approve varieties: Tribune -MAG

Certified seed - VCU

Breeder only authorized to market for 3 first years


1 – Introduction
1935/36
1973
Law on Grains
Law on Seeds and Fitogenetic Creations
Chapter on Genetic Promotion
Authority to approve varieties: Tribune -MAG
Certified seed - VCU
Breeder only authorized to market for 3 first years
Special for Seeds
Authority= MAG
Promote seed market development
Assure seed identity and quality to farmers
Protect plant variety property
Plant Variety Protection in Argentina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1935/36
1973
1991
Law on Grains
Law on Seeds and Fitogenetic Creations
New Seed Law regulation
Chapter on Genetic Promotion
Authority to approve varieties: Tribune -MAG
Certified seed - VCU
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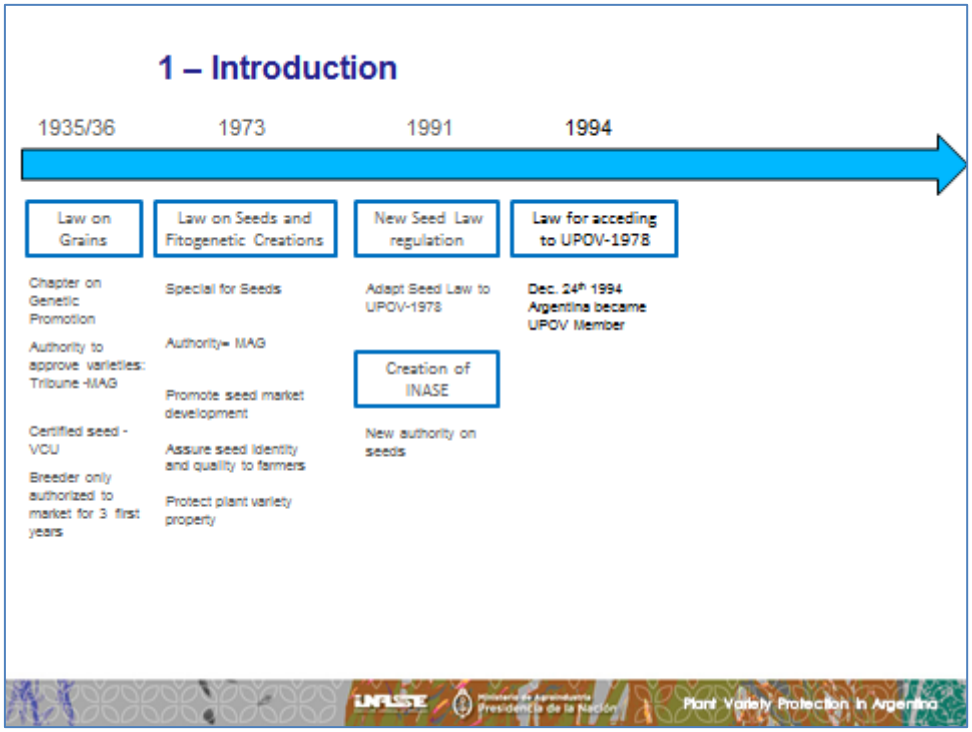
Promote seed market development
Assure seed identity and quality to farmers
Protect plant variety property
Adapt Seed Law to UPOV-1978
Creation of INASE
New authority on seeds
Plant Variety Protection in Argentina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1935/36
1973
1991
1994
Law on Grains
Law on Seeds and Fitogenetic Creations
New Seed Law regulation
Law for acceding to UPOV-1978
Chapter on Genetic Promotion
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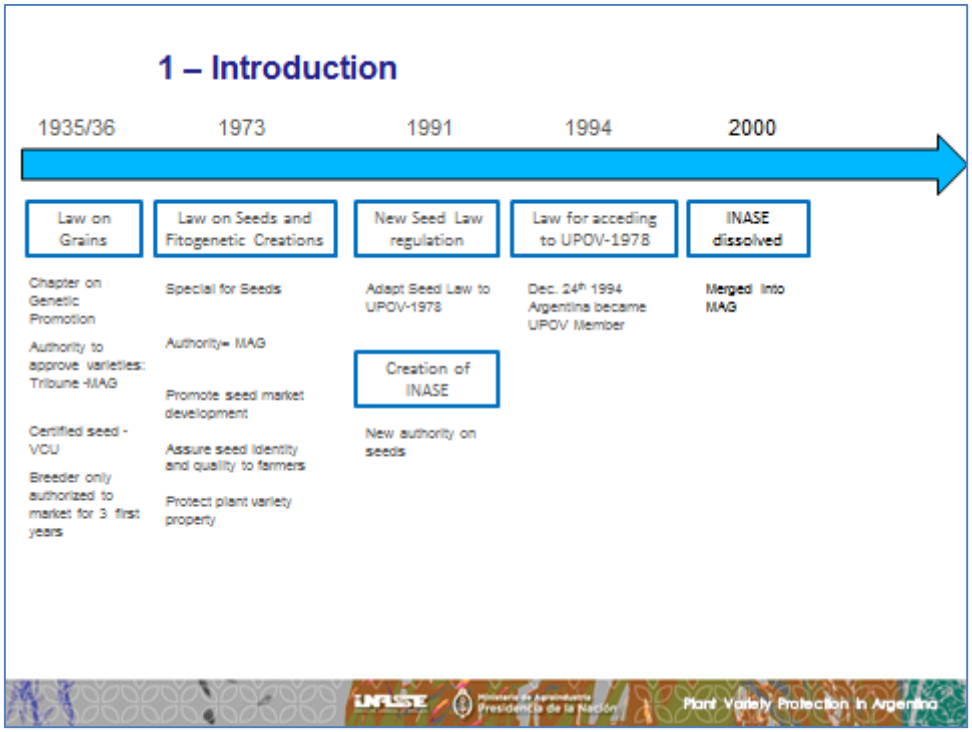
Assure seed identity and quality to farmers
Protect plant variety property
Adapt Seed Law to UPOV-1978
Creation of INASE
New authority on seeds
Dec. 24th 1994 Argentina became UPOV Member
Plant Variety Protection in Argentina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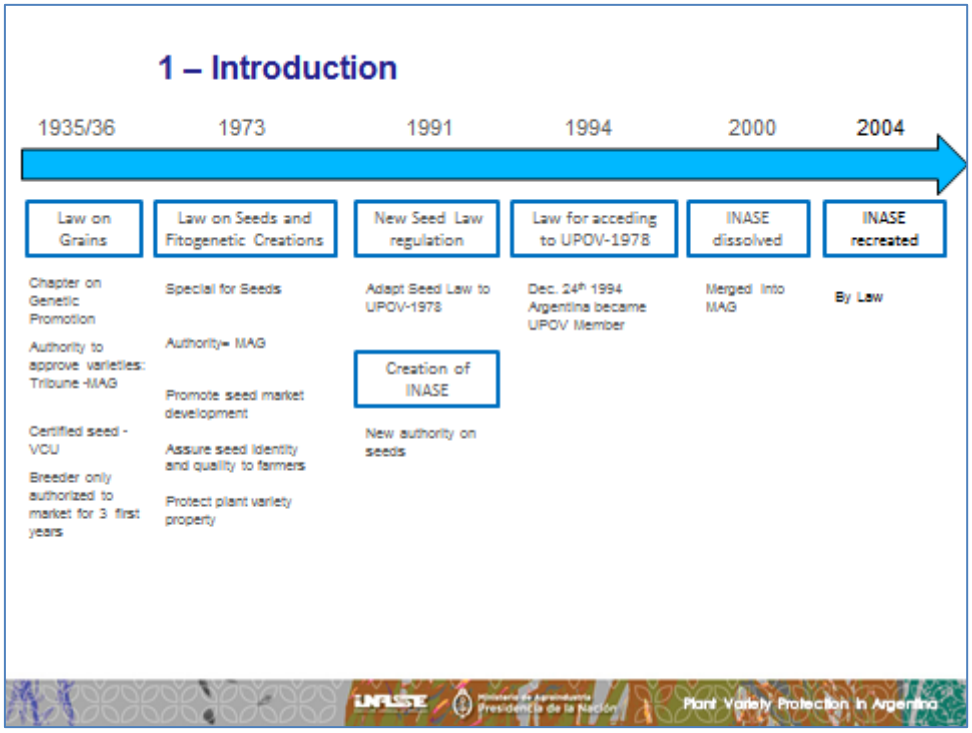
1973
1991
1994
2000
Law on Grains
Law on Seeds and Fitogenetic Creations
New Seed Law regulation
Law for acceding to UPOV-1978
INASE dissolved
Chapter on Genetic Promotion
Authority to approve varieties: Tribune -MAG
Certified seed - VCU
Breeder only authorized to market for 3 first years
Special for Seeds
Authority= MAG
Promote seed market development
Assure seed identity and quality to farmers
Protect plant variety property
Adapt Seed Law to UPOV-1978
Creation of INASE
New authority on seeds
Dec. 24th 1994 Argentina became UPOV Member
Merged into MAG
Plant Variety Protection in Argentina


1 – Introduction
1935/36
1973
1991
1994
2000
2004
Law on Grains
Law on Seeds and Fitogenetic Creations
New Seed Law regulation
Law for acceding to UPOV-1978
INASE dissolved
INASE recreated
Chapter on Genetic Promotion
Authority to approve varieties: Tribune -MAG
Certified seed - VCU
Breeder only authorized to market for 3 first years
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Authority= MAG
Promote seed market development
Assure seed identity and quality to farmers
Protect plant variety property
Adapt Seed Law to UPOV-1978
Creation of INASE
New authority on seeds
Dec. 24th 1994 Argentina became UPOV Member
Merged into MAG
By Law
Plant Variety Protection in Argentina


1 – Introduction
2 – National Legislation on Plant Variety Protection
3 - DUS in Argentina
4 – Situation of PVP in Argentina
5 – Future
Plant Variety Protection in Argentina

1 – Introduction

2 – National Legislation on Plant Variety Protection

3 – Situation of PVP in Argentina

4 – Future

2 – National Legislation on Plant Variety Protection

Law on Seeds and Fitogenetic Creations N° 20.247/73

Regulatory Decree 2183/91

Law for the approval of the UPOV Convention 1978 N°24376/94

Law for the recreation of INASE N° 25845/2004

2 – National Legislation on Plant Variety Protection

Purpose of the Law on Seeds and Fitogenetic Creations N° 20.247/73

-to promote an efficient activity for the production and commercialization of seeds,

- to assure the identity and quality of the seed the farmer purchase

- to protect the property of the fitogenetic creations

2 – National Legislation on Plant Variety Protection

Purpose of the Law on Seeds and Fitogenetic Creations N° 20.247/73

Policy power

Art 45 – Civil Servants acting on the enforcement of this law can inspect, take samples, make any analysis or test on any seed being stocked, transported, sold, offered or exposed for selling at any time in any place. They will have access to any local where there is seed and can request or inspect any documentation related to that seed. They can stop, stop the selling of the movement of any seed lot under the assumption of infringement of the law for a period no longer than 30 days. For this purposes the Ministry of Agriculture (now INASE) can request cooperation fron other official organisms as well as any public force in any case where they consider necessary.

2 – National Legislation on Plant Variety Protection

Law for the recreation of INASE N° 25845/2004

- The authority of the Law on Seeds and Fitogenetic Creations N°20.247.
- Exercise the policy power coming from the implementation of the Law above.
- Issue international certificates for seed quality, for any kind of propagating material for sowing, planting or cultivation purposes according to international agreements signed by Argentina.
- Protect and register the intellectual property for seeds and fitogenetic creations.
- Propose and enact any norm related to the identity and quality of the seed and enforce it.

2 – National Legislation on Plant Variety Protection

INASE CENTRAL	205
Regional offices	56
TOTAL	261

1 – Introduction

2 – National Legislation on Plant Variety Protection

3 – Organization of DUS in Argentina

4 – Situation of PVP in Argentina

5 – Future

Organization of DUS examination in Argentina Argentina

1- Information from the applicant

2 – Applicant's field trials

3 - Visits

4 – INASE DUS trials: soybean

5 – Cooperation in DUS

6 - Future

3 – Organization of DUS in Argentina

4 – INASE DUS trials: soybean

150 + applications per year

Compare candidates from different breeders

Check variety descriptions

Check uniformity

3 – Organization of DUS in Argentina

4 – INASE DUS trials: soybean

All candidates in 3 locations

1 - Castelar: all varieties

2 - Pergamino: groups III to V

3 – Rafaela: groups V to IX

Trials 2 and 3 established and maintained by the Argentinean Soybean Chain Association (ACSOJA) following INASE trial design

3 – Organization of DUS in Argentina

5 – Cooperation in DUS

ARGENTINA buys DUS reports from any UPOV member for foreign varieties of all plant genera and species

USEFUL

Varieties already examined abroad

Species where there is no local breeding and expertise

Better use of local resources

3 – Organization of DUS in Argentina

6 - Future

Aproach

Combination of morphological and molecular data for the management of reference collection in soybean

2012/13
2013/14
2014/15
growing trials for callibration purposes

Project with breeder: to identify SNIPs for DUS variety identification

1 – Introduction

2 – National Legislation on Plant Variety Protection

3 – Organization of DUS in Argentina

4 – Situation of PVP in Argentina

5 – Future

4 – Situation of PVP in Argentina

Fruit plant certification

Citrus 2015/16:
Certified: 1.484.747 (89,4%)
Demand: 1.660.877

HLB

Wine:
Certified: 5.000
Demand. 15 000.000

4 – Situation of PVP in Argentina

RNCyFS:

2503 companies

Qualification - Inspections

Training - Accreditation

Auditing

SEED TRADE CONTROL

FIRMAS INSPECCIONADAS:	802
ACTAS DE CONSTATACION:	2236
BOLSAS CONSTATADAS:	4.016.374
ACTAS DE INFRACCION:	22
BOLSAS INTERVENIDAS:	1306
IMP/EXPORTACIÓN:	100% regulated and authorized de INASE

OVGMs

Seed Users Register
Origin of the seed

4 – Situation of PVP in Argentina

-CERTIFICATION

National

1.300 M u$s

20.000.000 bags

100% hybrids (maize, sorghum and sunflower

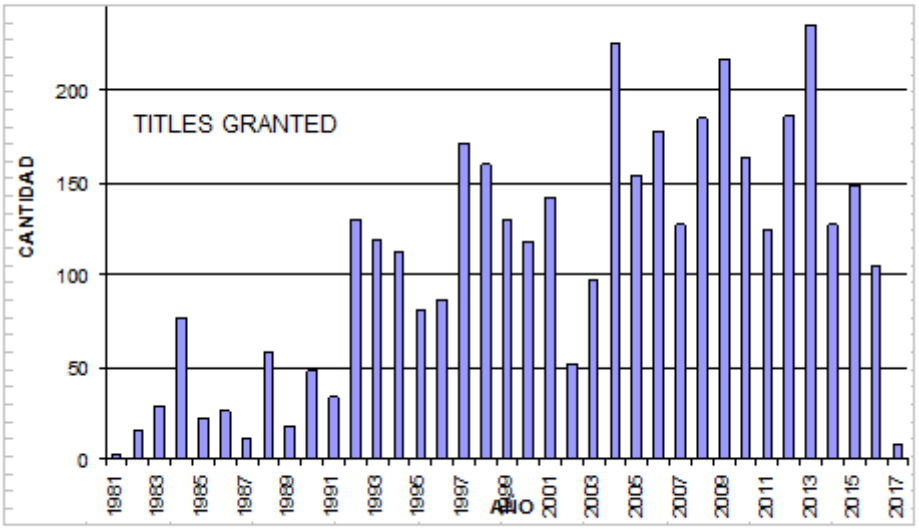
15-20 % self pollinated

50% forage specieS

International

250-300 M u$s

4 – Situation of PVP in Argentina



4 – Situation of PVP in Argentina

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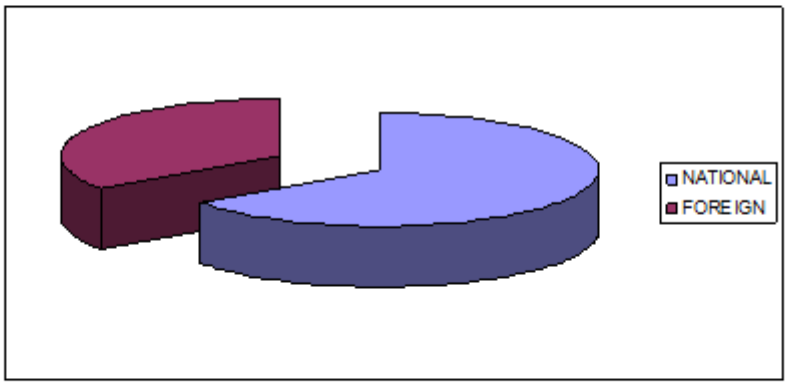
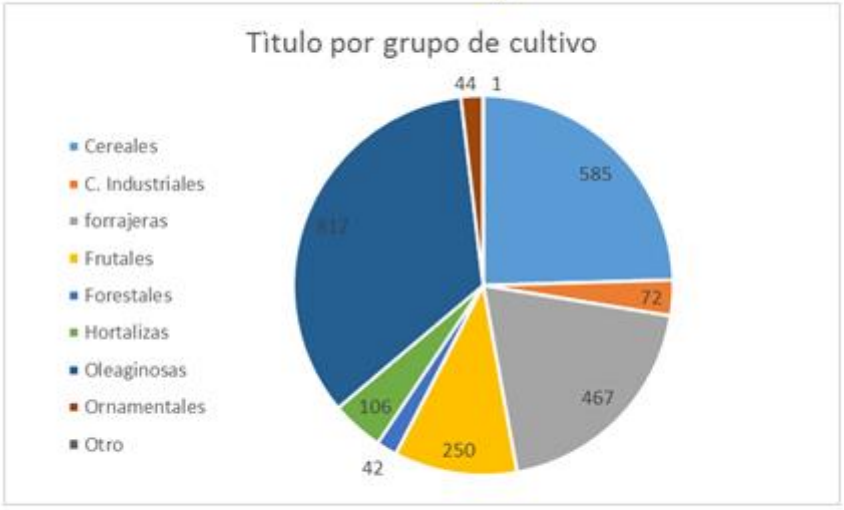
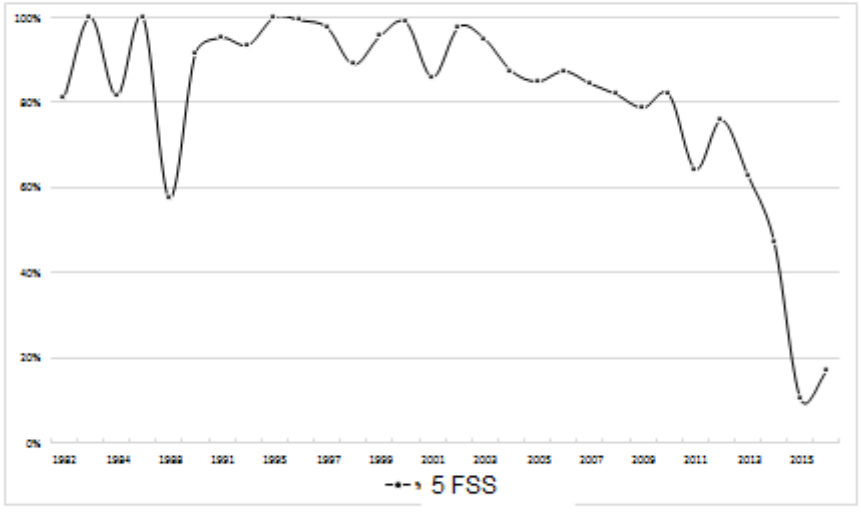


4 – Situation of PVP in Argentina

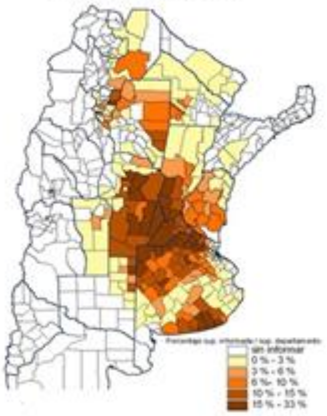


4 – Situation of PVP in Argentina

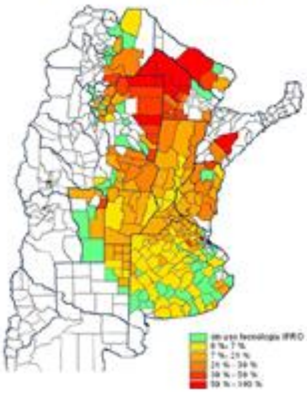


4 – Situation of PVP in Argentina

% surface declared



% of IPRO technology



4 – Situation of PVP in Argentina

Ranking of varieties by surface of cultivation

Pos	Variedad	Semilla sembrada (kg)	Superficie sembrada (has)	%	Año	Solicitante	País Origen	Acum.
1	NIDERA A 5009 RG	[illegible]	[illegible]	[illegible]	[illegible]	NIDERA S.A.	ARG	[illegible]
2	DON MARIO 4612 RSF	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
3	DON MARIO [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
4	DON MARIO [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
5	DON MARIO [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
6	DON MARIO [illegible] RSF	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NIDERA S.A.	ARG	[illegible]
8	DON MARIO [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	USA	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
11	DON MARIO [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
12	DON MARIO [illegible] IPRO	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
13	NIDERA A [illegible] RG	[illegible]	[illegible]	[illegible]	[illegible]	NIDERA S.A.	ARG	[illegible]
14	NIDERA A [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NIDERA S.A.	ARG	[illegible]
15	[illegible] IPRO	[illegible]	[illegible]	[illegible]	[illegible]	NIDERA S.A.	ARG	[illegible]
16	DON MARIO [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
17	[illegible] IPRO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	BRA	[illegible]
18	DON MARIO [illegible] RSF	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
19	DON MARIO [illegible] RSF	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	ARG	[illegible]
20	DON MARIO [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASOCIADOS DON MARIO S.A.	USA	[illegible]
	Otros [illegible]	[illegible]	[illegible]	[illegible]				100%
	Total	[illegible]	[illegible]					

1 – Introduction

2 – National Legislation on Plant Variety Protection

3 – Situation of PVP in Argentina

4 – Future

4 – Future

Plant Variety Protection

Develop DNA techniques for PBR and Seed Trade Control:
forest trees, peach and soybean (short-medium term),
wheat, forage (medium-long term)

GAIA

REGISTER USERS OF SEEDS: wheat, cotton, rice, peanut

4 – Future

Plant Variety Protection

MODIFICATION OF LAW 20247 Seeds and Fitogenetic Creations

-INASE to be entrusted to get access to any crop anywhere to check the origin of the seed and functionaries to enter anywhere necessary for this purposes

-- The price paid for the seed will cover all IP Rights contained in the seed

-- When selling the seed the price of the payment required for FSS has to be established

- - Varieties containing IP protected technology can be used for further breeding and research

-- seed propagated varieties farmers with annual billing higher than 200.000 U$S will be required to pay for FSS as follows:

-3 multiplications: pay all FSS, afterwards, will pay the amount that exceeds the initial purchase of certified seed.

-FAMILIAR FARMERS: excepted of this provision

- FSS provisions of the law cannot be modified by contracts

-- Change in the composition of the Directorate of INASE

Thanks

Agric. Eng. Raimundo Lavignolle
President
National Seed Institute - INASE

[Annex III follows]

ANNEX III

PRESENTATION BY MR. ALBERTO BALLESTEROS, EXAMINER,
NATIONAL SEED INSTITUTE, ARGENTINA

National Seed Institute

-PVP OFFICE

-CERTIFICATION AND COMMERCE OFFICE

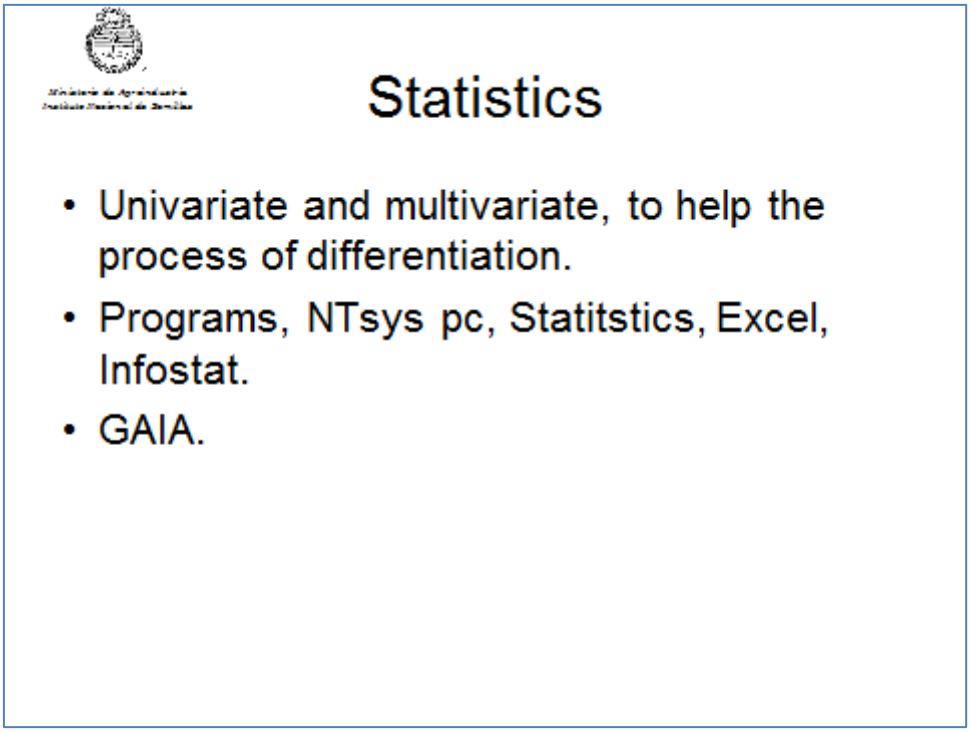
PVP OFFICE

- Computer programs
- -*Dif*, enable to produce diferences between new varieties and registered
- -*Gestión* helps to manage the entire file system. where, when, who is the breeder, variety denomination, etc.
- -*National Catalogue* indicates the start and end date of the property right. And from when the new cultivar can be commercialized. And is connected with the commerce and certification office.
- - *Denomination Dif* allows to identify the most similar denomination by phonetics and number of vowels and consonants.
- *AnaDataRET:* It allows to show everything related to the National Trials of Wheat cultivars: Yield, diseases behavior, different environments adaptation, etc.
- GAIA.

Commerce and Certification Office

- *Import and export*
- *Registration*, all those who are in the seed buisness must be registered
- *Certification* controls the quantity of certified seed that is sold from the productions lots to the bags. Connected with the catalogue.

- Some programs were developed in the nineties, others recently.
- Some programs are made with database file (DBF), others have other more modern platforms.
- There is a process of permanent updating, that's why INASE counts with a Programming and Computer office,
- We have a program for almost every need.



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