UPOV
International Union for the Protection of New Varieties of Plants

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Technical Working Party for Fruit Crops **TWF/49/12**

Forty-Ninth Session
Santiago de Chile, Chile, November 19 to 23, 2018

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REPORT

adopted by the Technical Working Party for Fruit Crops

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Opening of the session

1. The Technical Working Party for Fruit Crops (TWF) held its forty-ninth session in Santiago de Chile, Chile, from November 19 to 23, 2018. The list of participants is reproduced in Annex I to this report.

2. The session was opened by Mr. Jean Maison (European Union), Chairman of the TWF, who welcomed the participants and thanked Chile for hosting the TWF session.

3. The TWF was welcomed by Mr. Guillermo Federico Aparicio Muñoz, Head, Seed Division, *Servicio Agrícola y Ganadero* (SAG), Ministry of Agriculture.

4. The TWF received a presentation by Mr. Guillermo Federico Aparicio Muñoz, on plant variety protection in Chile. A copy of the presentation is provided in Annex II to this report.

Adoption of the agenda

5. The TWF adopted the agenda as reproduced in document TWF/49/1 REV..

Short reports on developments in plant variety protection

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

6. The TWF noted the information on developments in plant variety protection from members and observers provided in document TWF/49/3 Prov. The TWF noted that reports submitted to the Office of the Union after November 9, 2018, would be included in the final version of document TWF/49/3.

(b) Reports on developments within UPOV

7. The TWF received a presentation from the Office of the Union on latest developments within UPOV, a copy of which is provided in document TWF/49/2.

TGP documents

8. The TWF considered document TWP/2/1.

Matters for adoption by the Council in 2018

9. The TWF noted the revisions of TGP documents previously agreed by the TC which had been adopted by the Council at its fifty-second ordinary session, held in Geneva on November 2, 2018, on the following matters:

(i) Drafter's Kit for Test Guidelines (document TGP/7);
(ii) Presentation of different types of example varieties (document TGP/7)

Matters for adoption by the Council in 2019

10. The TWF noted the revisions of TGP documents previously agreed by the TC on the following matters, which would be adopted by the Council in 2019:

(i) Procedure for the adoption of draft Test Guidelines (document TGP/7);
(ii) Examining DUS in Bulk Samples (document TGP/8);
(iii) Data Processing for the Assessment of Distinctness and for Producing Variety Descriptions (document TGP/8);
(iv) Assessing Uniformity by Off-Types on Basis of More than One Growing Cycle or on the Basis of Sub Samples (document TGP/10);
(v) Illustrations for shape and ratio characteristics (document TGP/14)

11. In relation to procedure for the adoption of Test Guidelines by correspondence, the TWF noted that the TC had considered the proposal for the revision of document TGP/7 "Development of Test Guidelines" to reflect the introduction of a procedure for adoption of Test Guidelines by correspondence, as set out in document TC/54/16, paragraph 14, and received presentation by the UPOV Office, a copy of which had been provided as an addendum to document TC/54/16. The TC agreed that guidance in document TGP/7 should be revised to read as follows:

"2.2.7 STEP 7 Consideration of Draft Test Guidelines by the TC-EDC

"2.2.7.1 The TC-EDC has been established by the Technical Committee to examine drafts of all Test Guidelines, produced by the TWPs, before these are put forward for adoption by the Technical Committee. The role of the TC-EDC is to ensure consistency of the Test Guidelines with the requirements of document TGP/7 and to check the alignment of texts across all the official UPOV languages. It does not conduct a substantive technical review of the Test Guidelines. The members of the TC-EDC are selected by the TC, both to provide broad experience of the UPOV system and also to represent the UPOV languages – English, French, German and Spanish. The Chairperson of the TC-EDC is provided by the UPOV Secretariat.

"2.2.7.2 The TC-EDC reviews the draft Test Guidelines, taking into account any specific instructions from the Technical Committee, and makes a recommendation on whether the Test Guidelines are suitable for adoption (Step 8). It may make a proposal to the Technical Committee for adoption subject to amendments of an editorial nature, which it specifies.

"NEW Unless otherwise agreed by the TC, the TC-EDC meets twice each year, once in the period March/April and once in conjunction with the TC session (October/November). The TC-EDC will consider Test Guidelines submitted by the Technical Working Parties at least 14 weeks prior to the TC-EDC meeting. Test Guidelines submitted less than 14 weeks prior to the TC-EDC meeting will be considered at its subsequent meeting.

"NEW The potential outcomes for Test Guidelines considered by the TC-EDC are as follows:

(a) no changes required to the Test Guidelines, or strictly editorial changes for which recommendations are agreed by the TC-EDC; or
(b) editorial clarifications required; or
(c) technical issues to be resolved.

"NEW In cases where no changes are required to the Test Guidelines, or strictly editorial changes for which recommendations are agreed by the TC-EDC, the Test Guidelines will be put forward for adoption by the Technical Committee.

"NEW The following procedure applies for Test Guidelines when editorial clarifications are required:

- request for clarifications is transmitted to the Leading Expert;
- clarifications to be provided within four weeks;
- if the clarifications are agreed by the TC-EDC, the Test Guidelines will be recommended for adoption at the TC-EDC meeting;
- the Test Guidelines are considered for adoption by the TC.

"NEW The following procedure applies for Test Guidelines with technical issues to be resolved:

- technical issues to be transmitted to the Leading Expert

- the technical issues are to be addressed at the respective Technical Working Party by means of a TWP document prepared by the Leading Expert at least four weeks before TWP session (new draft Test Guidelines should not be prepared)
- resolution of the issues to be provided to the TC-EDC at least seven weeks before the TC-EDC meeting;
- if agreed by the TC-EDC, the Test Guidelines would be recommended for adoption at the TC-EDC meeting;
- Test Guidelines are considered for adoption by the TC.

"2.2.8 STEP 8 Adoption of Draft Test Guidelines by the Technical Committee

"2.2.8.1 The Technical Committee will, on the basis of the recommendations of the TC-EDC, decide whether to adopt the Test Guidelines, or refer them back to the TWP concerned.

"NEW The Technical Committee may adopt Test Guidelines at its session or by correspondence. Test Guidelines may be adopted by correspondence according to the following procedure:

- The draft Test Guidelines are circulated to the TC for adoption by correspondence with the recommendations by the TC-EDC;
- The draft Test Guidelines are considered as adopted if no comments are received within six weeks;
- If any comments are received, the draft Test Guidelines are referred to the relevant TWP to address those comments.

"2.2.8.2 Where the Technical Committee adopts the Test Guidelines, the Office will make all amendments agreed by the Technical Committee, which will be recorded in a report of the relevant Technical Committee meeting. The Office will then publish the adopted Test Guidelines.

12. The TWF noted that TC had agreed that a suitable timeline for the publication of adopted Test Guidelines should be added to the guidance.

13. The TWF noted that TC had agreed that the procedure for the adoption of Test Guidelines by correspondence should be incorporated in the content of the preparatory workshops for the TWPs.

Matters to be considered by the Technical Committee

TGP/5: Section 1: "Model administrative agreement for international cooperation in the testing of varieties"

14. The TWF noted that the proposed revision of document TGP/5 Section 1 for the inclusion of guidance on confidentiality of molecular information had been adopted by the Council at its fifty-second ordinary session, held in Geneva on November 2, 2018.

Future revisions of TGP documents

15. The TWF noted that the following matters concerning a possible revision of TGP documents had been considered by the TC, at its fifty-fourth session, and noted that the conclusions of the TC would be reported to the TWPs at their sessions in 2019:

(i) Characteristics which only apply to certain varieties (document TGP/7);
(ii) The Combined-Over-Years Uniformity Criterion (COYU) (document TGP/8);
(iii) Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS) (document TGP/15);
(iv) UPOV color groups (document TGP/14)

Possible future revisions of TGP documents

TGP/7: Development of Test Guidelines

Proprietary method of assessment for male sterility

16. The TWF noted that the TC had noted the importance of Test Guidelines for international harmonization and 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

17. The TWF noted that the TC had considered a situation where existing Test Guidelines characteristics did not meet the requirements set out in document TGP/7. The TC noted that the characteristics should meet the requirements for a characteristic set out in the General Introduction, which included provisions for characteristics observed in bulk samples, and agreed that it was the responsibility of the TWPs to assess whether these should be kept as DUS characteristics.

TGP/12: Guidance on Certain Physiological Characteristics

18. The TWF noted that the TC had noted that the use of disease resistance characteristics would be discussed at the TWV, at its next session, and had agreed to wait for the outcome of those discussions before developing further guidance.

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

19. The TWF noted that the TC at its fifty-fourth session in Geneva on October 29 and 30, 2018, considered documents TC/54/23 and TGP/15/2 Draft 1 and had agreed the following.

Revision of the model "Combining phenotypic and molecular distances in the management of variety collections"

20. The TWF noted that the The TC had noted the report of the BMT, at its seventeenth session, that the establishment of an additional threshold for genetic distance below GAIA distance 2 had not been implemented in France at that time. The TC had recalled that the nature of document TGP/15 was to present examples of the use of molecular markers in DUS examination among UPOV members.

21. The TWF noted that the TC had agreed with the BMT that the Model "Combining Phenotypic and Molecular Distances in the Management of Variety Collections" of document TGP/15, Section 2.2, should be revised at a later stage once an additional threshold level had been implemented in France.

Proposal for inclusion of a new model "genetic selection of similar varieties for the first growing cycle"

22. The TWF noted that the The TC had noted that the BMT and TWV had agreed to propose a new model "Genetic selection of similar varieties for the first growing cycle: example French Bean" for inclusion in document TGP/15 on the basis of a simplified version of the draft text presented in document TGP/15/2 Draft1, as set out in document TC/54/23, paragraphs 24 and 26.

23. The TWF 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 on the basis of the proposal by the Netherlands, as amended by the TC-EDC, as set out in Annex III to document TC/54/31.

Program for the development of TGP documents

24. The TWF noted the program for the development of TGP documents, as set out in Annex IV to document TWP/2/1 and as updated in Annex IV of document TC/54/5 Rev..

TGP/7: Development of Test Guidelines

Duration of DUS in the fruit sector

25. The TWF considered document TWP/2/9 and noted that the TC, at its fifty-fourth session in Geneva on October 29 and 30, 2018, had agreed that the following sentence should be included as standard wording in Test Guidelines:

"The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test."

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

Method for more than one single test (year)

26. The TWF considered document TWP/2/10 and noted that the TC, at its fifty-fourth session, had considered the proposal for the revision of guidance in document TGP/8/2: Part II: Section 8: Subsection 8.1.7: "Method for more than one single test (year)", on the basis of the draft set out in document TC/54/19, Annex II, and in conjunction with the comments by the TWPs, at their sessions in 2018.

27. The TWF noted that the TC had noted that guidance on the same matter had been developed for document TGP/10 and agreed that the current guidance in document TGP/8/2: Part II: Section 8: Subsection 8.1.7 should be replaced by a cross-reference to the guidance new on "Assessing uniformity by off-types on the basis of more than one growing cycle or on the basis of sub-samples" to be included in document TGP/10 "Examining Uniformity."

TGP/14: Glossary of Terms Used in UPOV Documents

Illustrations for shape and ratio characteristics

28. The TWF considered document TWP/2/11 and noted the conclusions of the TC, at its fifty-fourth session.

29. The TC had noted that grids could be used to clarify the states of expression and the differences between states of expression and to describe the range of expression for shape characteristics.

30. The TC had noted the discussions on whether to identify situations when grids should and should not be used to explain states of expression in shape characteristics and had agreed that the TWPs should decide on a case-by-case for each Test Guidelines according to the guidance in TGP/14 "Glossary of Terms Used in UPOV Documents". The TC had recalled that, if grids were not used, it was necessary for Test Guidelines to explain the differences between shapes by another clear and objective way.

31. The TC had noted the discussions on whether to provide guidance on how grids can clarify how differences in notes can be used for the assessment of distinctness, in accordance with the guidance in the General Introduction and document TGP/9.

32. The TC had noted that the GAIA software was an example on how differences in notes could be used for the assessment of distinctness. The TC had agreed to request the UPOV Office to prepare a document for discussion at the TWPs providing explanations on QN and PQ characteristics from document TG/1/3 "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of new Varieties of Plants". The TC had agreed that such discussions should be dissociated from the discussions on the use of grids to illustrate shape and ratio characteristics.

UPOV color groups

33. The TWF considered document TWP/2/12, and noted that the TC, at its fifty-fourth session, had considered the proposals for the revision of the list of UPOV Color Groups and consequential changes to document TGP/14, as set out in document TC/54/22, Annexes I and II. The TC had agreed that the guidance on UPOV color names should not be used for variety denomination purposes and had agreed that the proposed guidance in document TC/54/22, Annex II, should be revised to remove the mention to variety denominations.

34. The TWF noted that the TC had agreed that the proposals should be considered by the TWPs and reported to the TC, at its fifty-fifth session.

35. The TWF noted that TC had considered whether to keep the previous list of UPOV Color groups within document TGP/14 in order to avoid confusion and had agreed to recommend keeping both versions of the list in the document.

36. The TWF had noted that TC had agreed to propose the revision of document TGP/14 to include guidance on the factors to be considered for creating color groups for grouping of varieties and organizing the growing trial, as follows:

"Factors to be considered for creating color groups

"When using the color of a plant part for grouping of varieties, a very clear and large difference between the colors is required. However, the color groups are also used in the Technical Questionnaire for applicants who have no RHS Colour Chart. Therefore the groups need to be small enough so that applicants are able to give an adequate state of expression for the characteristic.

"The following factors have to be considered when creating color groups for grouping:

(a) range of variation of the color of the plant part within the species
(b) difference between colors for varieties to be considered clearly distinguishable
(c) possible influence of the environment on the color of the plant part.

"Depending on the species and the plant part observed the color groups for grouping can be different. Examples for color groups in grouping characteristics of different Test Guidelines are listed in the following table.

Test Guidelines	Campanula (TG/305/1)	Hosta (TG/299/1)	Cordyline (TG/317/1)	Osteospermum (TG/175/5)
Characteristic	Corolla: main color of inner side	Leaf blade: color covering the largest surface area	Leaf: secondary color	Ray floret: main color of middle part
Color groups for grouping	white	white	white	white
	pink	light yellow	yellow	yellow
	red purple	medium yellow	green	orange
	purple	dark yellow	red	pink
	blue	light green	purple	red
		medium green	brown	purple
		dark green	blackish	violet
		blue green		

"It should be emphasized that not all groups are necessarily clearly distinct from each other when information is used that does not come from the same source (same location, same observer) and cannot always be used to exclude varieties from the trial. E.g. in Cordyline for the characteristic 'Leaf: secondary color' it might not be possible to clearly distinguish between 'brown' and 'blackish' when looking at photos on the internet or in a plant catalogue."

37. The TWF noted that TC had agreed that the following text in Annex II of document TC/54/22 should be deleted:

RHS Color Group (heading on each sheet)	29	Red Group	Used by the CPVO for checking colors in proposals for variety denominations.

Guidance for drafters of Test Guidelines

38. The TWF considered document TWP/2/8.

39. The TWF noted the proposals presented by the TWPs, at their sessions in 2017, for further improvements to the web-based TG template, as set out in paragraphs 7 to 12 of document TWP/2/8.

40. The TWF noted the issues on the web-based TG template addressed during 2017, as set out in paragraphs 13 to 22 of document TWP/2/8.

41. The TWF noted the issues currently being addressed on the web-based TG template, as set out in paragraph 23 of document TWP/2/8.

42. The TWF noted that training on the web-based TG template would be provided to all TWPs, at their sessions in 2018.

Experiences with new types and species

43. The TWF noted the report by an expert from China on *Ziziphus jujuba*, (common names: Jujube, Red date, Chinese date, Korean date, or Indian date (a species of *Ziziphus* in the buckthorn family (*Rhamnaceae*), and on Goji (*Lycium* L.).

Management of variety collections

44. The TWF noted that no presentations had been received by the Office and therefore agreed to postpone discussions on this agenda item to its fiftieth session to be held in 2019.

DUS examination of mutant varieties of apple

45. The TWF considered document TWF/49/8 and noted the developments reported by an expert from the European Union since the forty-eighth session of the TWF in 2017.

46. The TWF discussed the situation where a variety is bred in a certain environment, DUS tested in another environment and not distinct in the DUS test. The breeder may bring indications that their variety may be distinct in the environment where it has been bred. The group noted that this problem is less likely to take place in countries having a system of DUS testing at breeders premises since the DUS test would take place under the conditions desired by the breeder. It also noted that because of the interaction GxE, a variety may not necessarily be dictinct from another variety in all environments. The TWF noted that investigations are taking place in this respect in the European Union. The TWF invited the expert from the European Union to report on the progresses made on that subject matter and the work done at its next session.

47. The TWF agreed that, in the case of DUS examination of mutant varieties of apple, the exchange of information among DUS offices was important in order to ensure that authorities were aware of all existing potentially similar varieties.

48. The TWF agreed that the expert from the European Union should continue to coordinate the project to exchange information among authorities involved in DUS testing of apple to share information, as it provided an important source of information on the most similar varieties. It further encouraged all members involved in DUS testing of apple to contribute to this exchange of information.

Matters relevant in DUS examination for the fruit sector

49. The TWF considered document TWF/49/11 and noted the information provided by an expert from the European Union.

50. The TWF noted the differences in the observation of some characteristics by different examiners in the assesment of similar fruits. It recalled the importance of the quality of the Test Guidelines for international harmonization and harmonized variety descriptions and in particular the relevance of good explanations in order to limit the differences in the observation by different examiners.

51. The TWF agreed on the importance to have a common way to make measurements and allocate notes, and, in that regard, encouraged the organization of practical exercises among DUS examiners. It further suggested to organize practical exercises at the fringes of the preparatory workshop during the TWPs to compare ways to observe/ measure and potentially develop proposals for improving Test Guidelines.

52. The TWF welcomed the idea raised by the representatives of Canada and Chile on producing tutorials (e.g. short videos) to explain how to make measurement/ observation in a simple and clear manner. It invited experts from Canada and Chile to report at its next session on possible standardized approaches, which could also be used for other crops.

53. The TWF also received a presentation by an expert from the European Union on the CPVO project on a ring test for strawberry. A copy of the presentation would be reproduced in an addendum of document TWF/49/11.

54. The TWF noted the differences between the observation of the same characteristics on the same varieties by different examiners in different countries. However, the TWF noted the different conditions in the growing cycle which might have created variation between trials.

55. The TWF invited the expert from the European Union to report on the new developments in the ring test for Strawberry at its next session.

Impact of revisions of states of expression of existing characteristics in the revision of Test Guidelines

56. The TWF considered document TWF/49/9 and noted that no presentations had been received by the Office. The TWF noted the comment made by the representative of France on the additional work required for DUS centers and examiners following a change in the states of expression of existing characteristics in the revision of Test Guidelines. The TWF agreed that this should be discussed during the revisions of Test Guidelines, taking into consideration all potential advantages in terms of harmonization and reliability of DUS examination and possible impact for users.

57. The TWF agreed not to continue discussion on this agenda item.

Review of the proposal for guidance for the development of grids for shape illustration in Test Guidelines

58. The TWF considered document TWF/49/10 and noted that no presentations had been received by the Office. The TWF noted the conclusion of the TC on this topic (see paragraphs 29 to 31 of this document) and therefore agreed to not continue discussions on this agenda item at its session to be held in 2019.

Matters to be resolved concerning Test Guidelines put forward for adoption to the Technical Committee

**Black Walnut*

59. The TWF considered document TWF/49/7, presented by Ms. Nuria Urquía Fernández (Spain) and agreed the following:

Cover page	- to add "*Juglans* ×*intermedia* Jacques" as synonym to "*Juglans nigra* x *Juglans regia*" - to check whether "*J.* x *paradox*" as hybrid binomial for "*Juglans hindsii* x *J. regia"* *TWF: agreed*
2.3	to read "5 trees (one-year-old grafts). The rootstock to be used is the progeny Ng209xRa or any other variety specified by the authority" *TWF: agreed*
3.3.3	to be moved to 3.1 *TWF: agreed*
4.2.3	to be deleted *TWF: agreed*
Char. 4	- state 1 to read "absent or rudimentary" - state 2 to read "fully developed" *TWF: agreed*
Char. 5	to delete example variety "Eurowalnut B03" *TWF: agreed*
Char. 11	to read "Catkin: presence ~~of fully developed catkins~~" *Leading Expert: to read "Catkin: presence at D_m stage"* *TWF: to read "Catkin: presence of fully developed catkins"*
Char. 13	to check wording and use same approach as in Walnut (lateral/ventral view) *Leading Expert: yes, it should read "ventral view" as in the Test Guidelines for Walnut*
Char. 15	to read "Nut: shape of apex ~~perpendicular to sature~~" (see char. 14 and 8.2) *Leading Expert: agreed*
Ad. 2	to delete last sentence (covered by growth stage 2) *Leading Expert: agreed*
Ad. 3	to read "... High 17 < number of leaflets ≤ 21 Very high 21 >number of leaflets" *Leading Expert: agreed*

Ad. 6	to read "Female flower is considered conspicuous if flowers are present at stage D_f (see 8.3). Female flower is considered non conspicuous when the flowers appear only ~~are observed~~ when the leaves are fully developed." *Leading Expert: agreed*
Ad. 11	to read "Observations on the presence of fully developed catkins should be made between stages B_m and D_m (see 8.3)." *Leading Expert: to keep it as it is* *TC-EDC/Oct18: What means fully developed, interaction between fully developed and growth stages/ phenological stages?* *Leading Expert: Fully developed is when polinic sacs are full. Sentence to read "Observations on the presence of fully developed catkins should be never before Dm (see 8.3)."* *TWF: to read "Observations on the presence of fully developed catkins should be* made between stages B_m and D_m (see 8.3). *Fully developed catkins means that the polinic sacs are full."*
Ad. 12	- to check whether to be observed at stage C_m (B_m too eraly?) - to check whether Chars 11 and 12 can be observed at the same time *Leading Expert: It is not that it has to be observed at stage Bm or Cm, it is in the interval from Bm to Cm. Ad 11: The expert explains that catkins sometimes can be seen badly developed at Bm, but some other times it is neccesary to wait until Cm or even Dm to observe them (when this happens, they usually fall very early). So then, the proposal for Ad. 12 is: "The shape of catkins should be observed between Bm and Cm stages."* *TWF: to read "The shape of fully developed catkins should be observed between B_m and C_m stages." and Char. 12 to read "Catkins: shape of fully developed catkins"*
Ad. 13	relative width scale is upside down (invert "narrow" and "broad") *TWF: agreed*
Ad. 15	to add "Observation should be made facing the suture." *TWF: agreed*
Ads. 16, 17, 18	to read "Time of … is reached when …" *TWF: agreed*
Ad. 19	to be deleted *TWF: agreed*
Ad. 20	to read "Time of … is reached when …" *TWF: agreed*
8.3	clarification needed on growth stages (age of trees for observation, does not correspond to growth stages) (to check whether they are needed, information covered in 3.1.3?) *Leading Expert:* *Point 3.1.3 only refers to the fruit and the expert considers that it is necessary to indicate when to begin to look at a characteristic to be representative. The age of flowering is very variable between varieties so, the expert consider it is good to indicate it.* *But as it is difficult to homogenize the intervals, if needed, Point 8.3 could be removed.* *In the English version of the guidelines should say only "Phenological stages".* *Point 8.3.3.in the English "and" should be said "or".* *TC-EDC/Oct18: to check whether growth stages (1), (2), (3) to be moved to Chapter 8.1 (no growth stages, time of observation) and to clarify when observations are made* *Leading Expert:* *- to include in point 8.1 (c) "always in full flowering of the second year, both masculine and feminin", this way it could be reduced to 1 and 2.* *- 8.1 (d) should also include that the minimum number of fruits to be onserved is 25 per tree, per year.* *TWF:* *- 8.1 (c) to read: "Observations on flowers should be made during full flowering period, both on male and female flowers"* *- 8.3 (1)(2)(3) to be deleted* *- Chapter 8.3 to be named "phenological stages"* *- to indicate phenological stages in the table of characteristics (replacing growth stages) and delete reference to phenological stages from individual explanations in 8.2*

60. The TWF further agreed that, due the complexity of the changes particularly in relation to Chapter 8.3 and the phenological stages, a new full draft of the Test Guidelines for Black Walnut be prepared for the consideration by the TC-EDC at its meeting in March 2019.

Discussion on draft Test Guidelines

*Almond (*Prunus amygdalus *Batsch) (Partial revision)*

61. The subgroup discussed document TWF/49/4, presented by Ms. Nuria Urquía Fernández (Spain), and agreed the following:

Char. 43	to correct spelling of example variety “Nec Plus Ultra” in state 4

*Apple (fruit varieties) (Revision) (*Malus domestica *Borkh.)*

62. The subgroup discussed document TG/14/10(proj.1), presented by Mr. Erik Schulte (Germany), and received a presentation by the leading expert on the discriminating power of existing characteristics. The subgroup agreed the following:

Table of Chars.	to review example varieties and to include intermediate states where example varieties are available
Char. 1	to check whether to include measurements
Char. 3	- to read “Only varieties with Tree type: ramified: Tree: habit” - to add new state “upright to spreading” after state 1 - to update illustration with new state
Char. 4	to be deleted
Chars. 8, 9	to check correlation between these two characteristics
Char. 8	to delete MG
Char. 9	- to check whether to be deleted - if kept, to have states from “absent to very weak (1) to very strong (9)”
Char. 11	to have states “upwards (1), outwards (2), downwards (3)”
Char. 14	to have states “low” to “high”
Char. 15	to have notes 1, 3, 5
Char. 16	to have states from “weak” to “strong”
Char. 17	to add (*)
Char. 18	to add (d)
Char. 19	to be deleted
Chars. 20, 21	to add illustrations
Char. 23	to have states “thin (1), medium (2), thick (3)”
Chars. 24, 31	to check wording of “extend” (extension, area?)
Char. 25	to read “Stipule: length” with states from “very short (1) to very long (5)”
Char. 26	to delete “predominant”
Char. 27	to move “with petals pressed into horizontal position” as explanation to Chapter 8.2
Char. 28	to have states “below (1), same level (2), above (3)”
Char. 30	to delete state “irregular”
Char. 31	to be indicated as MG/VG
Char. 32, 33, 34, 35	to be indicated as MG/MS/VG
Char. 35	to have states from “very low (1) to very high (9)”
Char. 36	to review shapes
Char. 37	to add example varieties
Char. 39	to have states “absent or weak (1), medium (2), strong (3)”
Char. 40	- to check whether to be deleted or whether to replace with “Fruit: type of eye” with states “closed (1), partially open (2), fully open (2) or whether to include it as new char. before Char. 40
Chars. 41, 42	to be deleted

Char. 43	to check whether to be deleted
Chars. 44, 45, 46, 47	to be indicated as MS/VG
Chr. 48	- to check whether to split in two or three characteristics (e.g. “Fruit: pattern of over color” with states “variegated, stained, solid” and “Fruit: stripes” with states “absent or very few to very many”) - to add explanation
Char. 49	to add illustration
Char. 50, 51, 52	to check whether to reduce scale to have states “absent or small (1), medium (2), large (3)”
Chars. 53, 54, 55	to add explanation
Chars. 56, 58	to be deleted
Chars. 59, 60	to provide further explanation
Char. 62	to be deleted
Char. 63	to add explanation
Chars. 65, 66	- to add example varieties - to add explanation
Char. 67	- state 2 to read “yellowish white” instead of “cream” - to check whether to add more colors for pinkish and reddish to be included - to check whether to add explanation - to check whether to be split in two or more characteristics - also see correlation with Char. 68 - to be added to 5.3 as grouping characteristic
Char. 68	to check whether to replace “amount” with “distribution”
Char. 69	- to add explanation on how and when to be observed - to correct spelling of “oxidation”
Char. 70	to be deleted
Char. 72	- to check whether to be deleted (see correlation with Char. 73)¨ - to provide additional information
Ad. 29	- to improve illustration - to read “Observations should be made just after petal drop.”
Ad. 35	to be improved

*Apricot (*Prunus armeniaca *L.) (Revision)*

63. The subgroup discussed document TG/70/5(proj.2), presented by Mr. Chris Barnaby (New Zealand), on behalf of the Leading Expert, Mr. Hennie Venter (South Africa), and agreed the following:

Cover page	to delete synonym for botanical name
1.	to delete second paragraph (information provided in SW in Chapter 4.2)
3.3.2	to check whether applicable
Table of Chars.	- to check example varieties and synonyms and have only one name in for the same variety in the table of characteristics (see also Chapter 8.3) - to check whether to present full scale in characteristics if example varieties for intermediate states are available
Char. 3	- to check wording of characteristic (density of branching, number of branches?; see also wording of Ad. 3) - to check whether to split in two characteristics (degree and density) - to check whether to read “Tree: branching”
Char. 5	to check whether to add example variety for state 1 (“Ander Pert”?)
Char. 11	- to check example variety for state 9 (“Ninja” is state 7 “dark”) - to check whether to have 5 instead of 9 notes

Char. 15	to check whether both states “bicrenate” and “bidentate” are needed; difference unclear
Char. 16	- to check whether to have 5 instead of 9 notes - to check whether to add example variety “Mikado” for state 1 “very weak”
Char. 18	to be indicated as MG/VG
Char. 19	to check whether to add example varieties “Monaco Bella” and “Monique” for state 7
Char. 26	to check whether to add example variety “Rubilis” for state 1
Char. 28	to check whether “outwards” is needed (if not, would QL be appropriate?)
Char. 29	- to check whether to be indicated as VG only and add explanation that overall size is assessed - if MG should be added, to add explanation on how measurements are made
Char. 30	to be indicated as VG only
Chars. 32, 33, 34	to check whether to be indicated as MG/MS/VG
Char. 37	state 3 to read “strongly depressed”
Char. 40	to add new state 4 of expression “retuse” with example variety “Flash Cot”
Char. 41	to add illustration
Char. 45	to check whether also to be observed with pubescence present
Ads. 5, 6, 27, 46, 51	to delete photographs (no illustrations for color)
Ad. 15	to add explanation that observations should be made on the apical part of the leaf
Ad. 24	to be deleted (see (c))
Ad. 59	to check whether to delete the last sentence
8.3	to be updated (see also comment on table of characteristics)
TQ5	to complete full scale of state of expression

*Argania (*Argania spinosa *(L.) Skeels)*

64. The subgroup discussed document TG/ARGAN(proj.3), presented by Ms. Ibtihaj Belmehdi (Morocco), and agreed the following:

Table of Chars.	- to add example varieties - to check methods of observation (MS or MG?) - to add illustrations
Char. 3	- to add illustration - to useful characteristic (can it be observed clearly on younger trees?)
Char. 6	to be deleted
Char. 7	to add (*)
Char. 8	to add illustration
Char. 9	- to read “Tree: density of foliage” - to be moved after char. 3
Char. 11	to read “Leaf blade: intensity of green color of upper side” with states “light, medium, dark”
Char. 12	- to have states “elliptic, oblong, obovate” - to add (*)
Char. 19	to read “Inflorescence distribution” state 1 to read “in leaf axils only” state 2 to read “on shoot internode only” state 3 to read “in leaf axils and on internode shoots”
Char. 20	to be deleted
Char. 21	to read “Petal: color” state 3 to read “dark yellow”
Char. 23	to have states “circular (1), elliptic (2), ovate (3), fusiform (4)”

Char. 32	to add explanation
Char. 33	to be deleted
Char. 34	- to read “Stone: thickness of shell” - to be moved after Char. 31
Char. 37	to have notes 3, 5, 7 and states “narrow, medium, broad”
Char. 41	to read “dark yellow”
Char. 42	to be deleted
Char. 44	to add explanation

**Blueberry (Revision)*

65. The subgroup discussed document TG/137/5(proj.4), presented by Mr. Nik Hulse (Australia), and agreed the following:

Table of Chars.	to add indication (H) or (L) as follows: DrisBlueFifteen (H), Geerdens (H), Hele (H), EB 12-19 (L), Farthing (L), Ridley (L), Velluto Blue (H), Victoria (L), Ridley 1607 and 1403 (L), Freda (H) - to delete example varieties without any (H) or (L) indication (e.g.Chickadee) - “Flicker” to be replaced with “FL 96-43 (L)”
4.2	to add new ASW as 4.2.2
4.2.2	first sentence to read “For the assessment of uniformity of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied.”
Char. 1	- to have the following states and example vaerieties “weak (1) - Dolce Blue (L), medium (2) – DrisBlueSeven (L), strong (3) – Bluecrop (H), very Strong (4) – Vernon (L)”
Chars. 5, 6 and 7	to be indicated as MG/VG
Char. 9	to be deleted
Char. 12	to be deleted
Char. 14	to add example varieties “Cipria (L)”, “Hortblue Poppins (H)”, “Palmetto (L)” for state 1
Char. 23	to delete example variety “Sweetcrisp (L)”
Char. 26	to be deleted
Char. 27	to read “Fruit: type of sepals”
Char. 32	to add example varieties “Elliott (H), Hortblue Poppins (H)” for state 1
Char. 38	to read “Time of beginning of flowering on current season’s shoot”
Char. 40	to read “Time of beginning of fruit ripening on current season’s shoot”
Char. 42	to be moved after Char. 17 to add example varieties “Bluetta (H)” for state 1, “Blueray (H)” for state 2, “Berkeley (H)” for state 3 and “FL 96-43 (L)”, “Tifblue (L)” for state 4
8.1	to correct order of labels ((e) missing)
8.1 (c)	to read “Observations on the inflorescence and flower should be made at the beginning of fruit fall”
Ad. 16	to replace drawings with photographs or illustrations
Ads. 19, 22	to add full stop at end of sentence
Ad. 19	to add illustration in cross section and where to be observed
9.	to add “Rejman, A., 1994: Pomologia. PWRiL, Warszawa, PL.”
TQ 7.3.1	to delete options to select of low/mid/high chilling and only keep first sentence

Coconut (Cocos nucifera *L.) (Partial revision)*

66. The subgroup discussed document TWF/49/5, presented by Ms. Stefania Araujo (Brazil), and agreed with the proposed changes.

*Grapevine (*Vitis *L.) (Revision)*

67. The subgroup discussed document TG/50/10(proj.1), presented by Mr. Massimo Gardiman (Italy), on behalf of the Leading Expert, Mr. Luca Aggio (Italy) and agreed the following:

3.1.3	to read “In particular, it is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles, except for rootstock varieties.”
6.5	to be completed as currently adopted version
Table of Chars.	- to add codes as in previously adopted version - to check and review example varieties and use correct names instead of commercial names)
Char. 6	to replace “copper” and “wine red” with appropriate color (see TGP/14)
Chars. 10, 11, 12, 13	to be indicated as PQ
Char. 14	to read “Shoot: density of erect hairs on internodes”
Char. 15	to be deleted
Char. 21	state “absent” to have note 9
Char. 23	to check whether to add “Rondinella” as example variety for state 7
Char. 27	to add example variety for state 9
Char. 33	to check whether to be deleted
Char. 35	to check whether to split in two characteristics for length and width or to have ratio width/length characteristic
Char. 39	to review wording of states of expression according to TGP/14 and update illustration accordingly
Char. 40	- to check whether to delete states 1, 3, 4 and update example varieties - to check whether to add characteristic on distribution of color
Char. 41	to be deleted
Char. 42	to check whether to delete or to reword and add explanation
Char. 44	to check whether to reword and add explanation
Char. 45	to add more classes of flavor
Char. 46	to check whether to split in two characteristics (number of seeds)

Kiwifruit (Actinidia *Lindl.) (Partial revision)*

68. The subgroup discussed document TWF/49/6, presented by Mr. Chris Barnaby (New Zealand), and agreed the following:

Chars. 18, 49	to delete MS
Char. 29	to read “Petiole: density of pubescence” and have the following states and example varieties “absent or sparse (1) - Sparkler, Hayward, Hort 16A, medium (2) - Russell, Meris, dense (3) - Meteor, Minkigold”
Ad. 25	to read “The observation on the lower side of the leaf is an overall visual impression. The observation includes hairs and leaf surface.”

**Macadamia (*Macadamia integrifolia *Maiden et Betche,* Macadamia tetraphylla *L.A.S. Johnson) (Revision)*

69. The subgroup discussed document TG/111/4(proj.4), presented by Mr. Nik Hulse (Australia), and agreed the following:

1.	to read “Betche” (see cover page)
3.4	to spell plants with a small p
5.3	to add Char. 18
Char. 1	to add example variety “EMB-1” for state 1
Char. 9	to add example variety “849” for state 3
Char.13	to be indicated as PQ
Char. 15	to add example varieties “816” for state 1, “A16” for state 2, “333, A4” for state 3
Char. 16	- to delete example variety “MRG-20” and add “EMB-1” to state 3 - to add example variety “Daddow” to state 4
Char. 17	to add example varieties “A203” for state 1, “A38” for state 2, “Own Venture” for state 3
Char. 18	- to add example variety “MRG-20” for state 1 - to delete “MRG-20” and add example variety “EMB-1” for state 3 - to delete “EMB-1” from state 5
Char. 19	- state 1 to read “green” with example varieties “EMB-1, KRG-15, MRG-20, 816, A16, 849” - to delete state 2 and 3 - to add example variety “KMB-5” for state “brown”
Char. 20	to read “Leaf blade: intensity of color on upper side”
Char. 21	to add example varieties “Own Choice” for state 3, “H2” for state 5, “A4” for state 7
Char. 22	- to add explanation - to add example variety “A16” for state 3
Char. 23	to be deleted
Char. 25	to replace (b) with (a)
Char. 28	to add example varieties “H2” for state 1, “333” for state 2, “246” for state 3
Char. 29	to delete example variety “KMB-3” from state 3
Char. 30	to move example variety “KRG-15” from state 1 to state 2
Char. 31	to add example varieties “A16” for state 3 and “333” for state 7
Char. 32	to add example variety “KRG-15” to state 2
Char. 36	to add example varieties “660” for state 3, “738” for state 5, “A4” for state 7
Char. 37	to add example varieties “Own Venture” for state 3, “A4” for state 5, “660” for state 7
TQ 5	to complete full scale of state of expression

Survey on approaches for obtaining plant material from breeders and on deciding on varieties whose existence is a matter of common knowledge

70. The TWF considered document TWP/2/13 and noted the results of the survey on the approaches used by members of the Union for obtaining plant material from breeders and on deciding on varieties whose existence is a matter of common knowledge.

71. The TWF noted that TC had noted that different approaches were used by UPOV members in establishing whether varieties were a matter of common knowledge and had recalled that document TGP/4 “Constitution and maintenance of variety collections” provided guidance on this matter.

72. The TWF agreed that obtaining plant material was a key requirement for DUS Examination. The TWF agreed that it would be interesting to discuss further current challenges faced by DUS authorities in the fruit sector, to obtain plant material from different sources. It further agreed to continue the discussion under a specific agenda item for its next session, in order to identify the current difficulties to obtain plant material and the impact it could have on performing reliable DUS examinations. The TWF agreed that it would be a good way to explore possible improvement in cooperation between DUS Testing centers in exchanging information,

data and/or plant material. The TWF invited the representatives of Canada, China, European Union, Italy and Spain to make a presentation at its next session on their situation in their respective country in relation to access to plant material for DUS examination.

Molecular Techniques

(a) Developments in UPOV

73. The TWF considered document TWP/2/7 Rev. and noted the report on developments in the TWPs and BMT, as set out in paragraphs 6 to 37 of document TWP/2/7 Rev..

74. The TWF noted that the Office of the Union planned to invite members of the Union to provide sample database models currently in use as a basis to develop further guidance for document UPOV/INF/17 Section 6 “Databases”, including to assess whether the ST-26 standard would be suitable for UPOV purposes or whether a different model would need to be proposed.

75. The TWF considered document TGP/15/2 Draft 1 and the approach “Genetic selection of similar varieties for the first growing cycle: example French bean” presented in document TWP/2/7 Annex.

76. The TWF agreed with the BMT that the approach should be proposed for inclusion in document TGP/15 on the basis of a simplified version of draft text presented in document TGP/15/2 Draft 1.

77. The TWF noted the developments in relation to international collaboration and encouraged further cooperation in relation to the use of molecular techniques at the international level.

78. The TWF noted the developments in relation to molecular techniques as presented at the TC, at its fifty fourth session (see document TC 54/31 “Report”, paragraphs 260 to 291).

(b) Presentation on the use of molecular techniques in DUS examination

79. The TWF noted that no presentations had been received by the Office.

Variety denominations

80. The TWF considered document TWP/2/6.

81. The TWF 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 paragraphs 6 to 10 of document TWP/2/6.

82. The TWF noted the developments concerning a UPOV similarity search tool for variety denomination purposes, as set out in paragraph 12 of document TWP/2/6.

83. The TWF noted developments concerning the possible expansion of the content of the PLUTO Database, as set out in paragraph 14 of document TWP/2/6.

84. The TWF noted developments concerning non acceptable terms, as set out in paragraph 16 of document TWP/2/6.

85. The TWF noted that the fifth meeting of the WG-DEN had been held in Geneva, on October 30, 2018.

86. The TWF noted the draft agenda of the fifth meeting of the WG-DEN, as set out in paragraph 18 of document TWP/2/6.

87. The TWF noted that new developments in relation to variety denominations would be reported at its next session.

Information and databases

(a) UPOV information databases

88. The TWF considered document TWP/2/4 Rev..

GENIE database

89. The TWF noted that 440 new UPOV codes had been created in 2017 and a total of 8,589 UPOV codes were included in the GENIE database.

90. The TWF noted that European Commission Directorate General SANTE (DG SANTE) had proposed the establishment of an administrative arrangement between the Office of the Union and the European Commission to cover collaboration in scientific names of plant species present in each other's databases and, in particular, regarding the attribution of UPOV codes to plant species in the Forest Reproductive Material Information System (FOREMATIS).

91. The TWF noted the invitation to submit comments on Annex V, part A "UPOV codes amendments to be checked", part B "New UPOV codes or new information", and part C "Crop type(s) of UPOV codes used in the PLUTO database for the first time" to the Office of the Union by March 31, 2019.

PLUTO database

92. The TWF noted the summary of contributions to the PLUTO database from 2014 to 2017 and the current situation of members of the Union on data contribution, as presented in the Annex IV to document TWP/2/4 Rev..

93. The TWF noted the conclusions of the TC at its fifty-fourth session in relation to amendments to UPOV Code (see see document TC 54/31 "Report", paragraphs 296 to 302).

(b) Variety description databases

94. The TWF considered document TWP/2/2 and noted the developments reported in this document.

(c) Exchange and use of software and equipment

95. The TWF considered document TWP/2/5 .

Document UPOV/INF/16 "Exchangeable Software"

96. The TWF noted that the Council, at its fifty-first ordinary session, held in Geneva, on October 26, 2017, had adopted document UPOV/INF/16/7 "Exchangeable Software.

97. The TWF noted that the Office of the Union had issued circular E-18/042, 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.

Document UPOV/INF/22 "Software and Equipment Used by Members of the Union"

98. The TWF noted the Council, at its fifty-first ordinary session, held in Geneva, on October 26, 2017, had adopted document UPOV/INF/22/4 "Software and equipment used by members of the Union".

99. The TWF noted the Office of the Union had issued circular E-18/042, inviting the designated persons of the members of the Union in the TC to provide or update information for document UPOV/INF/22.

(d) Electronic application systems

100. The TWF considered document TWP/2/3 and received a presentation by the Office of the Union on UPOV PRISMA, a copy of which would be provided as an Addendum to document TWP/2/3. The TWF noted the developments concerning UPOV PRISMA.

Recommendations on draft Test Guidelines

(a) Test Guidelines to be put forward for adoption by the Technical Committee

101. The TWF agreed that the following draft Test Guidelines should be submitted to the TC for adoption on the basis of the following documents and the comments in this report:

Subject	Relevant document(s)
Almond (*Prunus amygdalus* Batsch) (Partial revision: Characteristic 43)	TG/56/4, TWF/49/4
*Blueberry (*V. angustifolium* x *V. myrsinites* x *V. corymbosum, V. angustifolium* Aiton, Hybrids between *V. corymbosum* and *V. angustifolium*, *V. corymbosum x V. angustifolium* x *V. virgatum*, *V. corymbosum* L., *V. formosum* Andrews, *V. myrtilloides* Michx., *V. myrtillus* L., *V. simulatum* Small, *V. virgatum* Aiton) (Revision)	TG/137/5(proj.4)
Coconut (*Cocos nucifera* L.) (Partial revision: example varieties of Chars. 5 and 11; Ad. 11)	TG/314/1, TWF/49/5
Kiwifruit (*Actinidia* Lindl.) (Partial revision: Characteristics 18, 25 and 49; addition of new char. after Char. 28 “Petiole: pubescence”)	TG/98/7, TWF/49/6
*Macadamia *(Macadamia integrifolia* Maiden et Betche, *Macadamia tetraphylla* L. Johns.) (Revision)	TG/111/4(proj.4)

(b) Test Guidelines to be discussed at the fiftieth session

102. The TWF agreed to discuss the following draft Test Guidelines at its fiftieth session:

Apple (fruit varieties) (Revision) (*Malus domestica* Borkh.)
*Apricot (*Prunus armeniaca* L.) (Revision)
Argania (*Argania spinosa* (L.) Skeels)
Avocado (*Persea americana* Mill.) (Partial revision: addition of new stem characteristic)
Avocado Rootstocks (*Persea americana* Mill.; *Persea schiedeana* Nees) (Partial revision: Chapter 2)
Date Palm (*Phoenix dactylifera*)
Grapevine (*Vitis* L.) (Revision)
Guava (*Psidium guajava* L.) (Revision)
Goji (*Lycium* L.)
Mulberry (*Morus* L.)
Oranges (*Citrus* L. - Group 2) (Partial revision: Characteristics 26, 56, 64, 81, 83)
*Physic Nut (*Jatropha curcas* L.)
Pistachio (*Pistacia* L.)
Pummelo (Grapefruit and) (*Citrus* L. - Group 4) (Partial revision: Characteristics 30, 50, 63, 65, 66, 81)
Strawberry (*Fragaria* L.) (Revision)
Sweet Cherry (*Prunus avium* L.) (Revision)

103. The leading experts, interested experts and timetables for the development of the Test Guidelines are set out in Annex VIII to this report.

(c) Possible Test Guidelines to be discussed in 2020

104. A list of Test Guidelines the TWF agreed to possibly discuss at its session in 2020 is presented in Annex VIII to this report.

Date and place of the next session

105. At a co-invitation of Hungary and the European Union, the TWF agreed to hold its fiftieth session in Budapest, Hungary, from June 24 to 28, 2019.

Future program

106. The TWF 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) Reports on developments within UPOV (oral report by the Office of the Union)
4. Molecular Techniques (document to be prepared by the Office of the Union)
5. TGP documents (documents to be prepared by the Office of the Union)
6. Variety denominations (document to be prepared by the Office of the Union)
7. Information and databases
   (a) UPOV information databases (documents to be prepared by the Office of the Union)
   (b) Variety description databases (documents to be prepared by the Office of the Union)
   (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)
8. Experiences with new types and species (oral reports invited)
9. Access to plant material for the purpose of management of variety collections and DUS examination (presentations to be prepared by Canada, China, European Union, Italy and Spain)
10. DUS examination of mutant varieties of apple (document to be prepared by the European Union)
11. Matters relevant in DUS examination for the fruit sector (presentations invited from members and observers)
12. Guidance for drafters of Test Guidelines
13. Matters to be resolved concerning Test Guidelines put forward for adoption by the Technical Committee
14. Discussion on draft Test Guidelines (Subgroups)
15. Recommendations on draft Test Guidelines
16. Date and place of the next session
17. Future program

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

19. Closing of the session

Visit

107. On November 21, 2018, the TWF received presentations from Mr. Manuel Toro Ugalde, Head of Department, Protection of New Varieties of Plants, *Servicio Agrícola y Ganadero* (SAG), Ministry of Agriculture, Mr. Mario Schindler, Executive Director, Chilean Seed Association (ANPROS), Mr. Sergio Maureira Baeza, Secretary-General, Fruit export Association (ASOEX), and Mr. Rodrigo Cruzat González, Head of the "*Consorcio de Biofrutales S.A*". A copy of their presentations is reproduced in Annex III, IV, V, VI, respectively, to this document.

108. During the afternoon of November 21, 2018, the TWF visited the experimental research center of "Universidad de Chile". The TWF was welcomed by Mr. Rodrigo Cruzat González and visited the breeding program for nectarine, peach, plum and almond. The TWF also visited the research station of "*Universidad Católica de Chile*". The TWF was welcomed by Ms. Marlene Ayala, Researcher and Professor of *Pontificia Universidad Católica de Chile*, Technical Director of the Cherry Breeding Program of "*Consorcio Tecnológico de la Fruta*", and received a presentation on the activities of ASOEX and their breeding program, a copy of which is provided in Annex VII to this document. The TWF also heard from Ms. Marlene Ayala, that obtaining plant material from other breeders as a basis for her breeding program was an issue. The TWF received a guided tour of the sweet cherry orchards of different selection stages of breeding programs by Ms. Maria Fernanda Alvarez, R&D coordinator.

109. The TWF adopted this report at the end of the session.

[Annexes follow]

ANNEX I

LIST OF PARTICIPANTS

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[via WebEx]

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e-mail: mariaantonietta.palombi@crea.gov.it)

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(tel.: +254 721 481 334 e-mail: ewachira@kephis.org)

MOROCCO

Ibtihaj BELMEHDI (Ms.), Plant Certification and DUS Examination, Expert in charge of the Control and Certification of Fruit Species, Division of Seed and Plant Control, National Office of Sanitary Food Safety (ONSSA), Avenue Sidi Al Hafiane Cherkaoui, Al Irfane, Rabat Instituts, Rabat
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Christopher J. BARNABY (Mr.), Assistant Commissioner / Manager for Plant Variety Rights, Plant Variety Rights Office, Intellectual Property Office of New Zealand, Ministry of Business Innovation and Employment, Private Bag 4714, Christchurch 8140
(tel.: +64 3 9626206 e-mail: Chris.Barnaby@pvr.govt.nz)

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(tel.: +82 43 850 3300 fax: +82 43 848 0451 e-mail: owkwon@korea.kr)

Chi Won CHAE (Mr.), Agricultural Researcher, Korea Seed and Variety Service (KSVS), Jeju Province Office, 7415, Jungsangandong-ro, Namwon-eup, Seogwipo-si, Jeju-do
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III. OFFICERS

Jean MAISON (Mr.), Chair

IV. OFFICE OF UPOV

Ben RIVOIRE (Mr.), Technical/Regional Officer (Africa, Arab Countries), International Union for the Protection of New Varieties of Plants (UPOV), Chemin des Colombettes 34, 1211 Geneva 20, Switzerland
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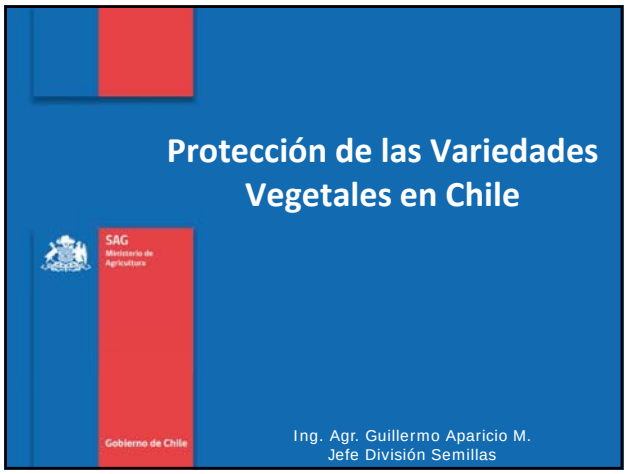
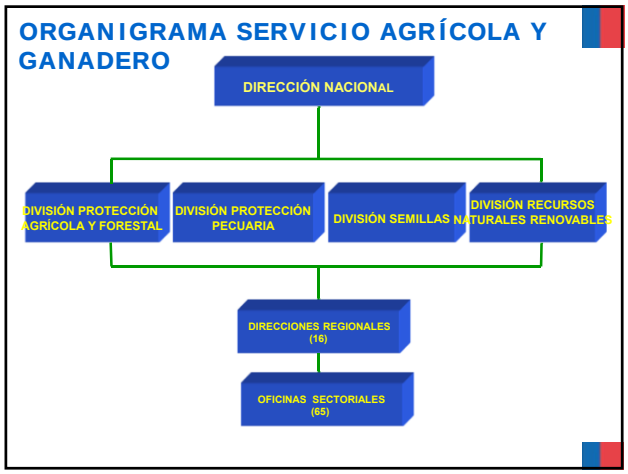
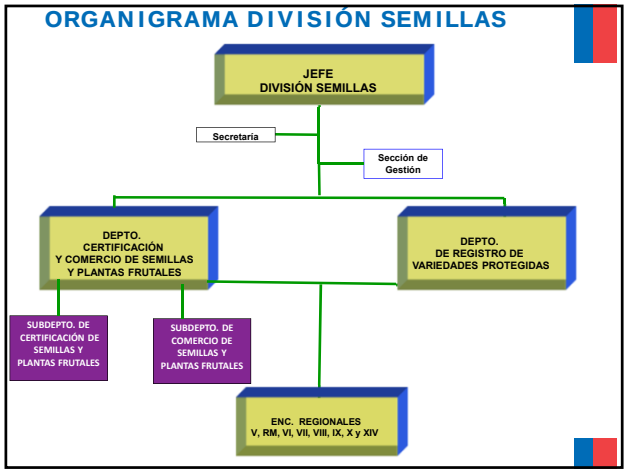
[Annex II follows]

ANNEX II

PRESENTATION BY MR. GUILLERMO FEDERICO APARICIO MUÑOZ, HEAD, SEED DIVISION, SERVICIO AGRÍCOLA Y GANADERO (SAG), MINISTRY OF AGRICULTURE, ON PLANT VARIETY PROTECTION IN CHILE







ALGUNOS DATOS ECONÓMICOS

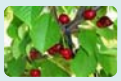
- Chile tiene una economía abierta y dependiente del comercio internacional, que representa el 56% del PIB del país (OMC, 2016). Nuestro país ha firmado tratados de libre comercio (TLC) con diversas economías: UE, Estados Unidos, China y Corea del Sur, e integra la Alianza del Pacífico desde 2012 (con México, Colombia y Perú).
- En 2016 Chile exportó $62,1 Miles de millones, llegando a ser el 41º exportador más grande en el mundo.
- El cobre representa el 50% de las exportaciones chilenas.

ALGUNOS DATOS ECONÓMICOS

- La **superficie frutícola nacional** alcanza a 294.000 hectáreas, entre las regiones de Atacama y Los Lagos.
- El sector produce cerca de 5 millones de toneladas de fruta, de las cuales se exportan 2,6 millones como **fruta fresca**, generando más de USD 4.000 millones anualmente.
- Chile es el **primer exportador frutícola** del hemisferio sur y líder exportador mundial de uva de mesa y arándanos.

PROTECCIÓN DE LAS OBTENCIONES VEGETALES EN CHILE

Situación Legal en Chile



Decreto Ley N°1.764 de 1977
(Crea el Registro de Propiedad de Variedades o Cultivares)

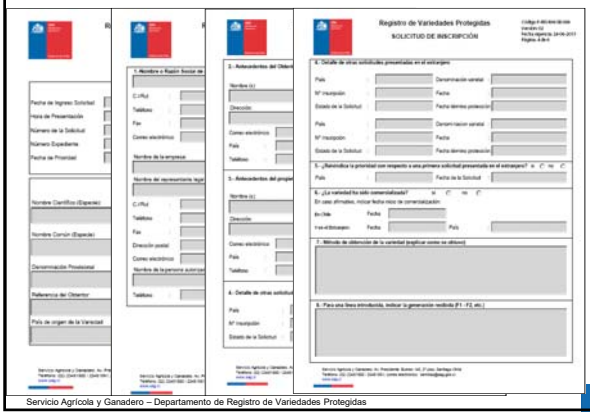
Ley 19.342 de 1.994
"Regula Derechos de Obtentores de Nuevas Variedades Vegetales"

Decreto N° 373 de 1.996
Reglamento de Ley N° 19.342

Adhesión de Chile al Acta de 1978 de UPOV: 05 de enero de 1.996

Departamento de Registro de Variedades Protegidas

Solicitud de Inscripción



Servicio Agrícola y Ganadero – Departamento de Registro de Variedades Protegidas

Comité Calificador de Variedades

- Sr. Guillermo Aparicio, Jefe División Semillas
- Sr. Ricardo Pertuzé, Docente U. de Chile
- Sr. Felipe Sanchez, Experto en producción de semillas
- Sr. Miguel Legarraga, Productor y Asesor
- Sra. Marina Gambardella, Docente PUC
- Sr. Fernando Ortega, Investigador de INIA

Departamento Registro de Variedades Protegidas

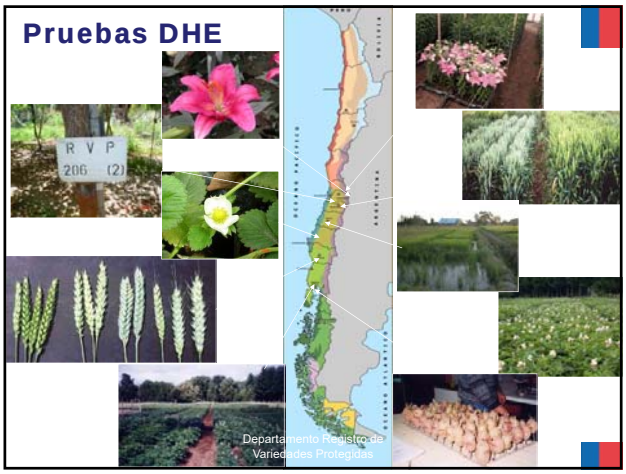
Estudio de las Variedades

Las variedades postulantes al RVP son sometidas a pruebas y ensayos de Distinción, Homogeneidad y Estabilidad (DHE).

En el caso de las semillas agrícolas, las comprobaciones se realizan en las Estaciones de Prueba del Servicio.

Departamento Registro de Variedades Protegidas

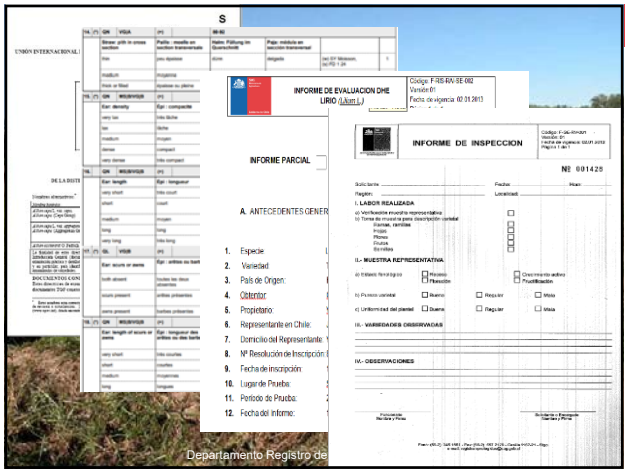
Pruebas DHE



Departamento Registro de Variedades Protegidas

DHE
Estaciones de Prueba del Servicio
Predios de los solicitantes

Servicio Agrícola y Ganadero – Departamento de Registro de Variedades Protegidas



Departamento Registro de

Caso especies frutales

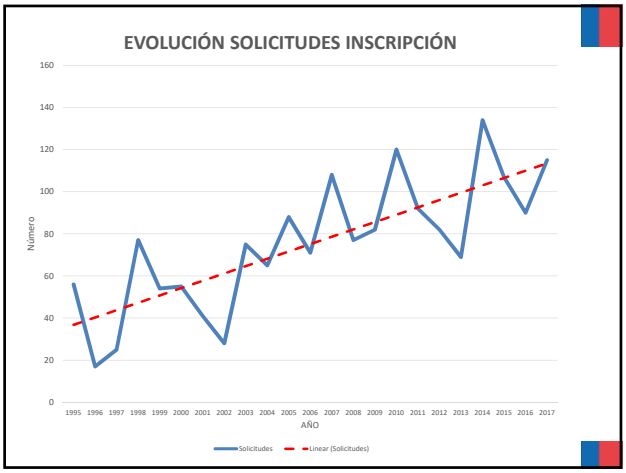
- Cooperación con los obtentores
- Gran número de variedades en las colecciones
- Concentradas en pocas especies

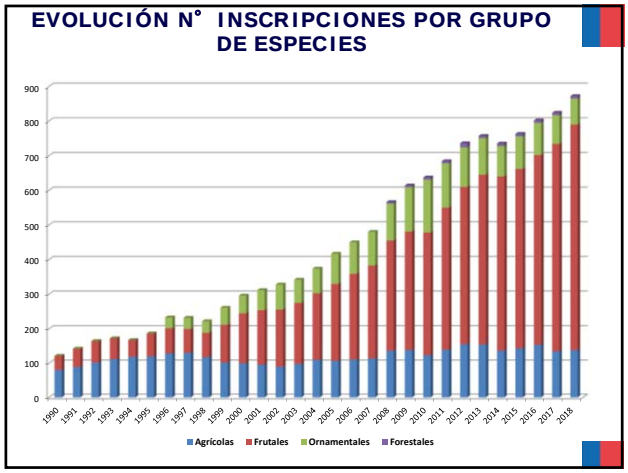
Departamento Registro de Variedades Protegidas

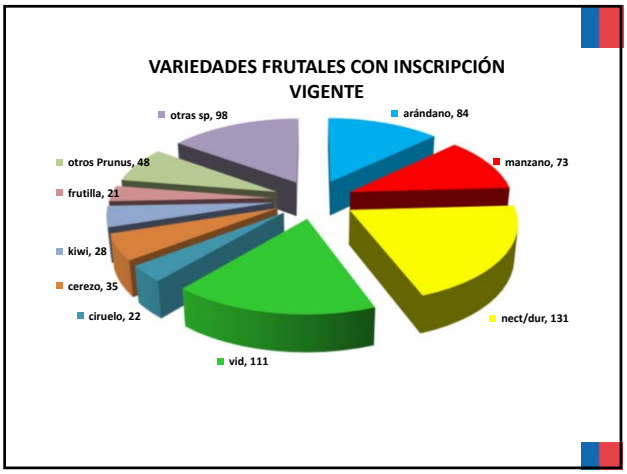
Departamento Registro de Variedades Protegidas

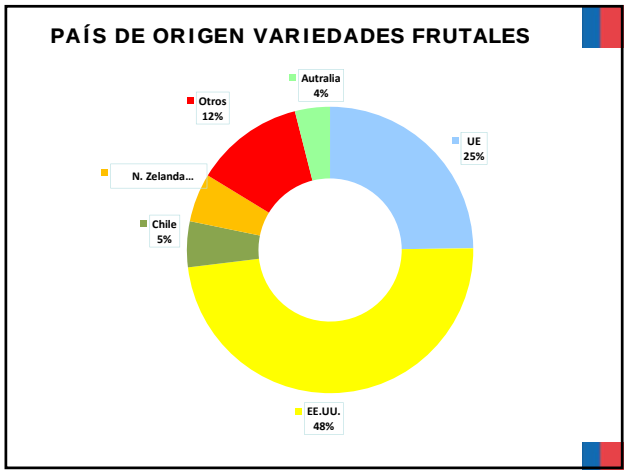

RVP
754
Departamento Registro de Variedades Protegidas


Estadísticas del Registro de Variedades Protegidas
Departamento Registro de Variedades Protegidas


EVOLUCIÓN SOLICITUDES INSCRIPCIÓN
Número
AÑO
Solicitudes
Linear (Solicitudes)

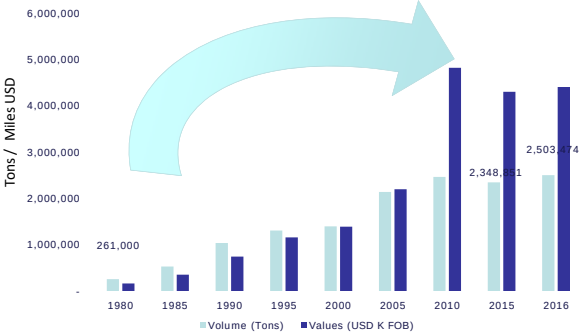

EVOLUCIÓN N° INSCRIPCIONES POR GRUPO DE ESPECIES
Agrícolas
Frutales
Ornamentales
Forestales


VARIEDADES FRUTALES CON INSCRIPCIÓN VIGENTE
otras sp, 98
arándano, 84
otros Prunus, 48
manzano, 73
frutilla, 21
kiwi, 28
cerezo, 35
ciruelo, 22
nect/dur, 131
vid, 111


PAÍS DE ORIGEN VARIEDADES FRUTALES
Autralia 4%
Otros 12%
UE 25%
N. Zelanda...
Chile 5%
EE.UU. 48%

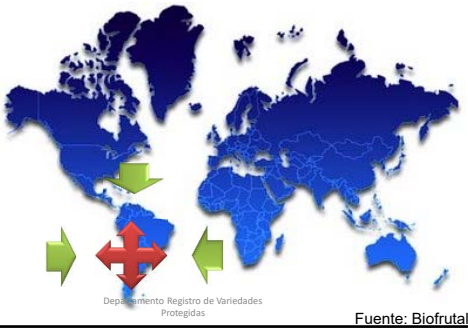
¿Cuál ha sido el impacto en la agricultura en Chile?

LA EXPORTACIÓN DE FRUTAS CRECIÓ MÁS DE 25 VECES EN LOS ÚLTIMOS 36 AÑOS.



Fuente: ASOEX (2017) y Banco Central (2017)

La competitividad de la industria frutícola tiene como uno de sus pilares el acceso a variedades de alto valor



Departamento Registro de Variedades Protegidas

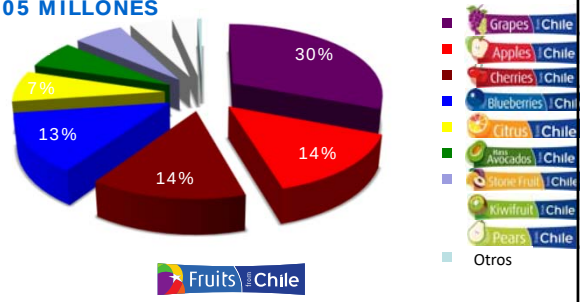
Fuente: Biofrutales

HITOS NOTABLES DE LA FRUTA DE CHILE

- Cada día **82 millones de consumidores** en el mundo **comen fruta de Chile***
- 1 SHAFFE — Chile es actualmente el **principal exportador de frutas frescas del hemisferio sur.****
- 1 Grapes / Blueberries / Stone Fruit / Cherries from Chile — Chile es el principal exportador de **uvas de mesa, arándanos ciruelas y cerezas en el mundo.****
- FOODS FROM Chile — Chile es percibido como un **proveedor confiable y de "clase mundial"** en términos que cumple con las exigencias y regulaciones del mercado internacional.***

*Fuente: *ASOEX y ProChile (2014), ** GTIS 2015, *** Promar (2011)*

PRINCIPALES ESPECIES DE "FRUTAS DE CHILE" EXPORTADAS AL MUNDO TEMPORADA 2015-2016 (VALORES USD FOB): USD 4,405 MILLONES



Fuente: Banco Central 2017

Registro de Protegidas

[Annex III follows]

ANNEX III

PRESENTATION BY MR. MANUEL TORO UGALDE, HEAD OF DEPARTMENT,
PROTECTION OF NEW VARIETIES OF PLANTS, SERVICIO AGRÍCOLA Y GANADERO (SAG)

Protección de las Variedades Vegetales en Chile

SAG
Ministerio de Agricultura

Gobierno de Chile

Ing. Agr. Manuel Toro Ugalde
Jefe Departamento Registro de Variedades Protegidas

Situación Legal en Chile

Decreto Ley N°1.764 de 1977
(Crea el Registro de Propiedad de Variedades o Cultivares)

Ley 19.342 de 1.994
"Regula Derechos de Obtentores de Nuevas Variedades Vegetales"

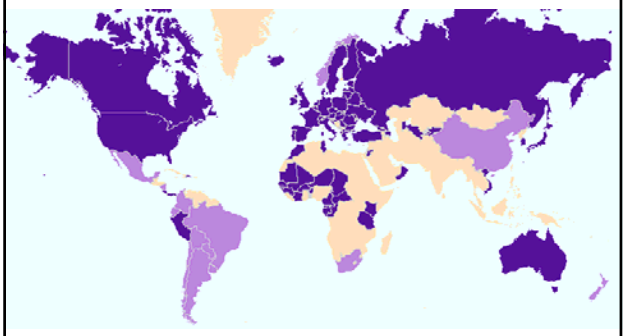
Decreto N° 373 de 1.996
Reglamento de Ley N° 19.342

Adhesión de Chile al Acta de 1978 de UPOV: 05 de enero de 1.996

Miembros de la UPOV

75 MIEMBROS / 94 ESTADOS

Acta de 1991: 57 miembros – Otras Actas: 18 miembros



Las fronteras que figuran en este mapa no implican la expresión de opinión alguna por parte de la UPOV sobre la condición jurídica de ningún país o territorio.

Fuente: www.upov.int

UPOV ¿Qué es UPOV?

Organización intergubernamental cuya misión es proporcionar y fomentar un **sistema eficaz para la protección de las variedades vegetales**, con miras al desarrollo de nuevas variedades vegetales para beneficio de la sociedad.

Objetivo de la Protección

Promover e incentivar la creación de variedades nacionales y la llegada al país de variedades extranjeras de alto valor.

¿Qué se protege?

Artículo 3° .- El derecho del obtentor de una variedad vegetal nueva consiste en someter a la autorización exclusiva de éste:

a) La producción del material de multiplicación de dicha variedad.

b) La venta, la oferta o exposición a la venta de ese material.

c) La comercialización, la importación o exportación del mismo.

d) El empleo repetido de la nueva variedad para la producción comercial de otra variedad.

e) La utilización de las plantas ornamentales o de partes de dichas plantas que, normalmente, son comercializadas para fines distintos al de propagación, con vista a la producción de plantas ornamentales o de flores cortadas.

Período de Protección

Árboles y vides
18 años

Otras especies
15 años

Departamento Registro de Variedades Protegidas

Requisitos para solicitar inscripción

La variedad debe ser

- Nueva
- Distinta
- Homogénea
- Estable
- Denominación Varietal

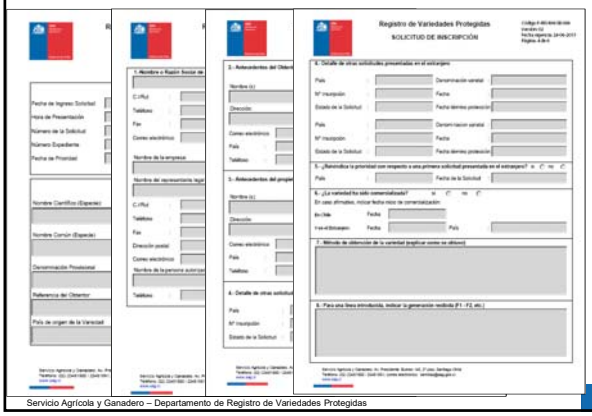
Departamento de Registro de Variedades Protegidas

Procedimiento RVP

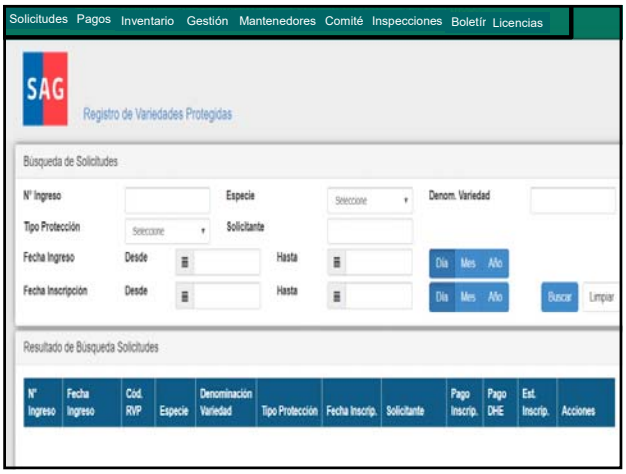
- Representante en Chile
- Solicitud de Inscripción
  - Descripción de la variedad
  - Método de obtención
  - Muestra representativa
  - Poder y Cesión (en caso que quien solicite no sea el obtentor)
  - Certificado de Registro de la variedad (si esta inscrita en el extranjero)
  - Costos de inscripción

Departamento Registro de Variedades Protegidas

Solicitud de Inscripción



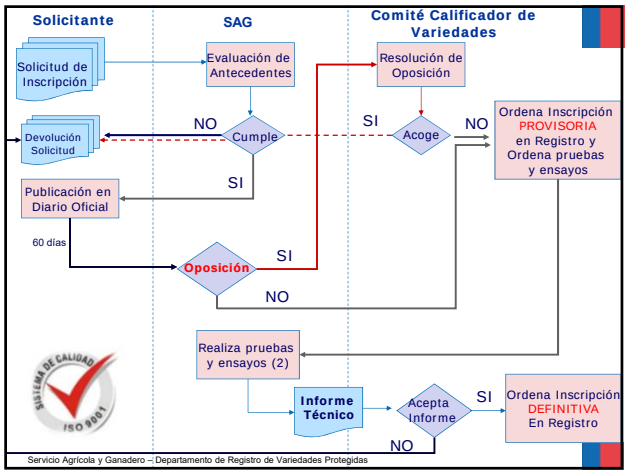
Servicio Agrícola y Ganadero – Departamento de Registro de Variedades Protegidas



UPOV PRISMA

Online PBR Application Tool

- Online application tool to submit application data to participating PVP Offices in required format
- Easy access to PVP application forms, which can be displayed in a range of languages
- Much of the information provided in the Technical Questionnaire will be automatically translated
- Relevant data can be re-used in subsequent applications
- Different user roles can be specified (e.g. drafter, signatory, translator, agent)
- Controlled access, secure and confidential


Solicitante
SAG
Comité Calificador de Variedades
Solicitud de Inscripción
Evaluación de Antecedentes
Resolución de Oposición
Devolución Solicitud
NO
Cumple
SI
Acoge
NO
Ordena Inscripción PROVISORIA en Registro y Ordena pruebas y ensayos
SI
Publicación en Diario Oficial
60 días
Oposición
SI
NO
Realiza pruebas y ensayos (2)
Informe Técnico
Acepta Informe
SI
Ordena Inscripción DEFINITIVA En Registro
NO
Servicio Agrícola y Ganadero – Departamento de Registro de Variedades Protegidas

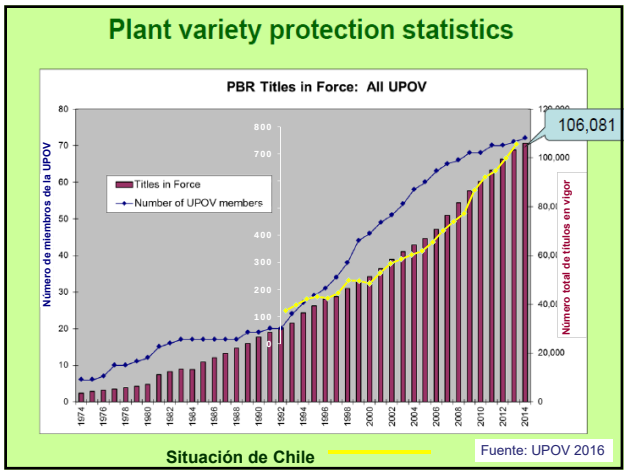

DHE
Estaciones de Prueba
Ensayos del solicitante
Servicio Agrícola y Ganadero – Departamento de Registro de Variedades Protegidas

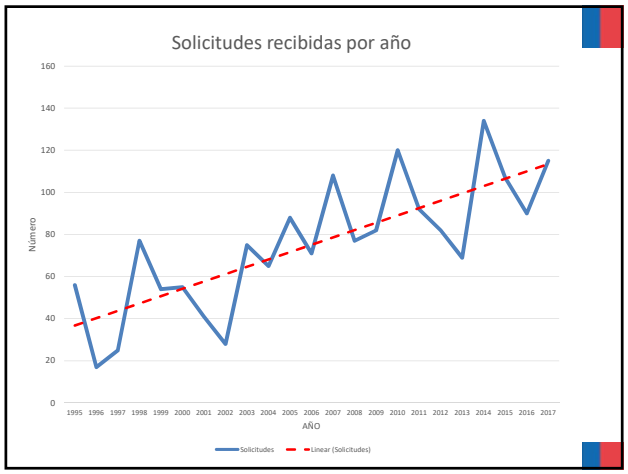

Caso especies frutales
• Cooperación con los obtentores
• Gran número de variedades en las colecciones
• Concentradas en pocas especies
Departamento Registro de Variedades Protegidas

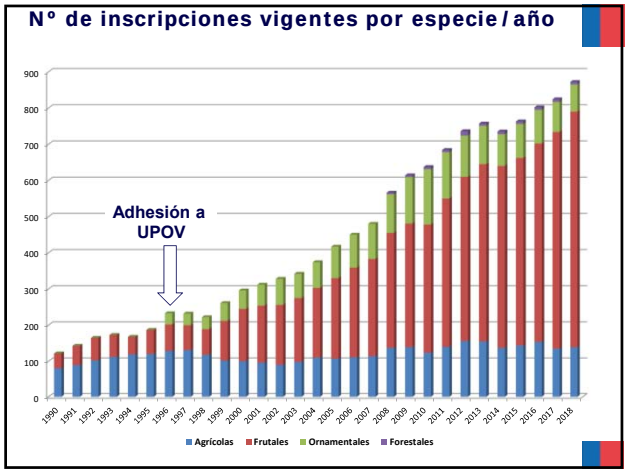

Departamento Registro de Variedades Protegidas

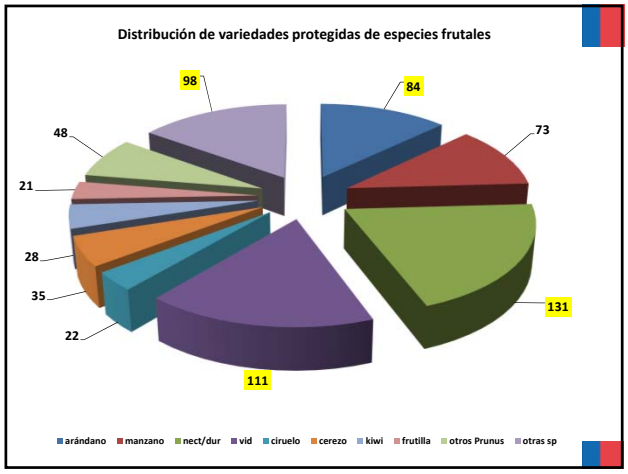

RVP 754
Departamento Registro de Variedades Protegidas

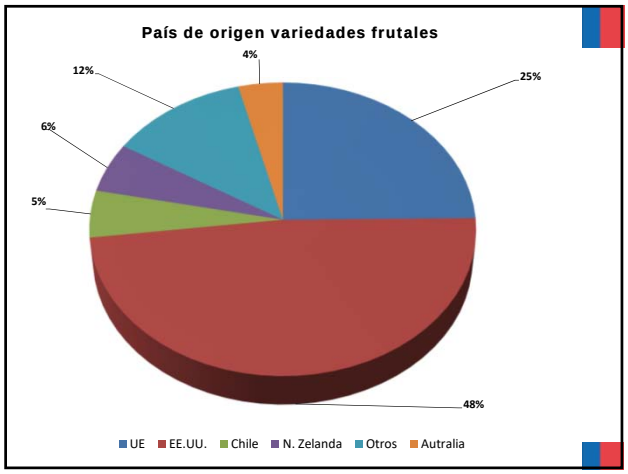

Estadísticas del Registro de Variedades Protegidas
Departamento Registro de Variedades Protegidas











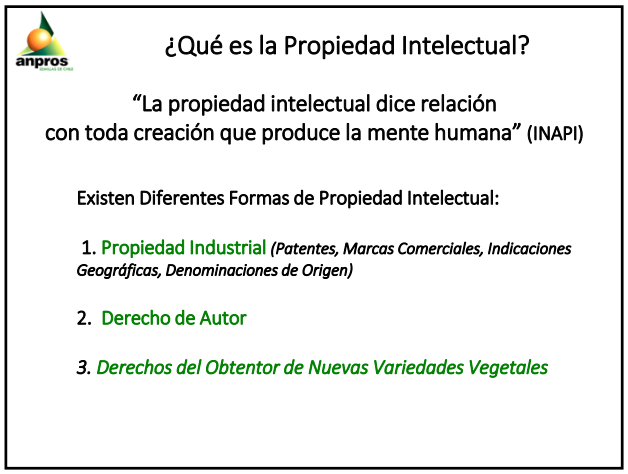
Programas Desarrollados por los Consorcios

CONSORCIO	ESPECIES
BioFrutales S.A.	Uva de mesa
	Durazneros
	Cerezos Arándanos
Consorcio Tecnológico de la Fruta	Frutales de Carozos
	Cerezos
	Uva de mesa
	Frambuesa
Centro de Estudios Avanzados en Fruticultura	Portainjertos
Consorcio del Vino	Selección clonal en vides de vino
Consorcio de la Papa	Papa

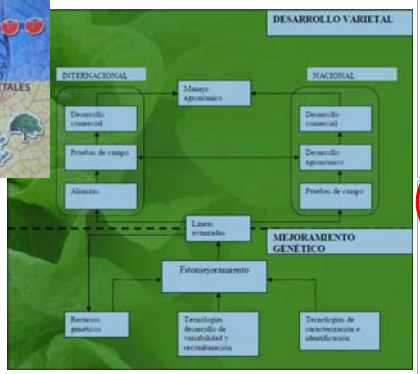
[Annex IV follows]

ANNEX IV

PRESENTATION BY MR. MARIO SCHINDLER, EXECUTIVE DIRECTOR,
CHILEAN SEED ASSOCIATION (ANPROS)



El Fitomejoramiento es largo y caro



7-15 Años

Los Derechos del Obtentor de Nuevas Variedades Vegetales

- Establecidos en el marco de la **OMC**
- Los países son soberanos para proteger las nuevas obtenciones vegetales por tres mecanismos: Patentes, **un sistema Sui generis *alternativo, distinto a las patentes*** *o una combinación de ambos.*
- El sistema alternativo a las patentes corresponde al **Convenio de UPOV**
- La mayoría de los países del mundo protegen sus obtenciones vegetales por medio del Convenio de UPOV y no por patentes. **Chile es uno de ellos.**

8

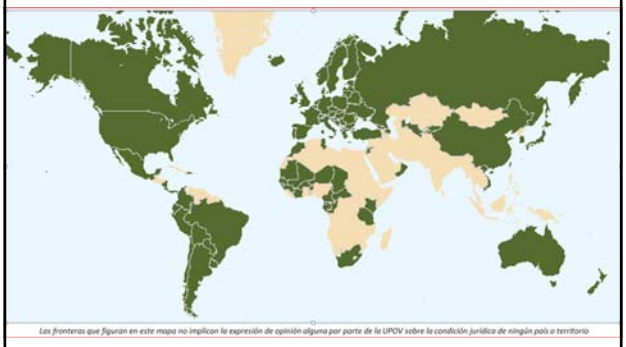
UPOV

- **Misión:** "Proporcionar y Fomentar un Sistema Eficaz para la Protección de las Variedades Vegetales Para **Beneficio de la Sociedad**"
- Nace el año **1961**, con sede en Ginebra, Suiza.
- Los miembros de UPOV son los **Estados**. Chile es representado en UPOV por la División de Semillas del **SAG.**
- UPOV ha generado en sus 57 años de existencia documentos para orientar a los países en la elaboración de sus Leyes ***(Actas de UPOV, 1961-1978-1991)***

http://www.upov.int

Miembros de UPOV: 75

57 Países (76%) UPOV 91 / 18 Países (24%) UPOV 78)



→El patentamiento de variedades vegetales está excluido expresamente en Chile por la Ley de Propiedad Industrial (Ley 19.039).

11

Diferencias Significativas Derechos del Obtentor (UPOV) Vs. Patentes:

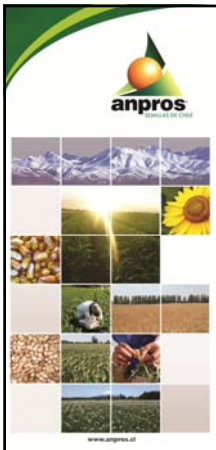
Excepciones al Derecho del Obtentor

Evolución en Chile Respecto a la Propiedad Intelectual Vegetal: Principales Hitos

- Ley de Semillas 1.764 (1977): tenía Registro de Propiedad de Variedades o Cultivares
  (41 años de antigüedad)
- Ley 19.342 (1994): *"Regula Derechos de Obtentores de Nuevas Variedades Vegetales"; Deroga Artículos PIV Ley 1.764*
  (24 años de antigüedad)
- Chile Adhiere a UPOV el 05 de Enero de 1996 (Acta 1978)
  (22 años de antigüedad)
- El Congreso Aprueba el Convenio de UPOV 91 en Mayo del 2011
  (7 años de antigüedad)

Ámbito Legislativo

"Desde Agricultura esperan ingresar en este segundo semestre entre ocho y nueve proyectos de ley. Entre ellos, destacan las indicaciones al Código de Aguas, el nuevo sistema de concesiones para embalses, el Servicio Nacional Forestal (nuevo Conaf), el Estatuto del Temporero, abigeato plus, la Ley de Prevención de Incendios, la Ley de Obtentores y la Ley Apicola."



Situación Actual:

1. Existe un Proyecto de Ley en trámite, en receso desde el 2014
2. MINAGRI se encuentra trabajando en elaborar un texto alternativo de proyecto que recoja elementos del trabajo realizado por la administración anterior en que se elaboró un borrador de proyecto titulado:

"Reconoce y regula los derechos de los obtentores de nuevas variedades, y promueve la valoración y conservación de las variedades agrícolas tradicionales"

Definición de Variedad Tradicional:

"Variedad Tradicional: Población dinámica, genéticamente diversa, de una planta cultivada que posee características que la distinguen de otras y no es producto de un proceso formal de mejoramiento. Ha sido cultivada por varias generaciones, adaptada localmente, pudiendo estar asociada con valores culturales y/o sistemas tradicionales de cultivo. Puede tener uno o varios nombres vernaculares, dependiendo de la zona geográfica en que se cultive"

(Grupo de Trabajo Variedades Tradicionales MINAGRI, Mesa RRGG ODEPA, enero 2018)

La Agricultura en Chile Necesita ser Altamente Eficiente.

Superficie total país: 75 millones has.

Superficie arable: 5,1 millones has.

Praderas: 11,2 millones has.

Plantaciones forestales: 2,6 millones has.

Bosque Nativo: 13,5 millones has.

Fruticultura: 0,3 millones has.

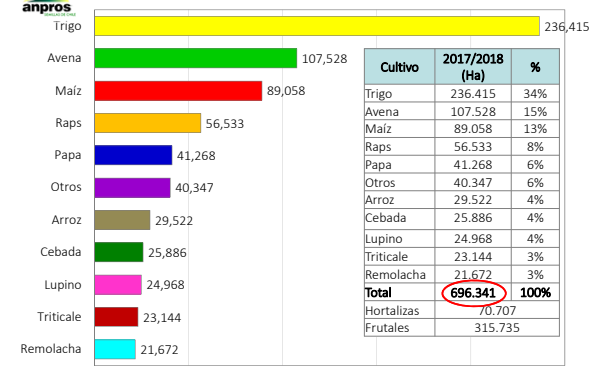
Cultivos Anuales: 0,76 millones has.

Disponer Siempre de la Mejores Variedades Desarrolladas en Chile y el Mundo es una Necesidad Permanente, Urgente y Requiere una Eficaz Protección de los Derechos del Obtentor

Argentina	*31 MM Ha*
Brasil	*61 MM Ha*
USA	*162 MM Ha*

Fuente: Elaboración ANPROS con datos de ODEPA

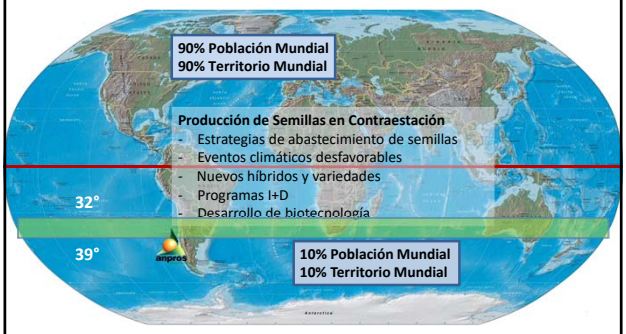
Superficie Cultivada Temporada 2017/2018



Cultivo	2017/2018 (Ha)	%
Trigo	236.415	34%
Avena	107.528	15%
Maíz	89.058	13%
Raps	56.533	8%
Papa	41.268	6%
Otros	40.347	6%
Arroz	29.522	4%
Cebada	25.886	4%
Lupino	24.968	4%
Triticale	23.144	3%
Remolacha	21.672	3%
Total	**696.341**	**100%**
Hortalizas	70.707	
Frutales	315.735	

Fuente: Elaboración ANPROS con datos ODEPA

Modelo de Negocios de la Industria Chilena de Exportación de Semillas: La Contraestación



Posibles Cambios Relevantes Nueva Ley: UPOV 78/ UPOV 91

UPOV 78 (Ley 19.342)	UPOV 91 (Futura Ley)
Protección al **material de multiplicación** (Semillas, Plantas)	**Se extiende al producto de la cosecha** sólo si el material de multiplicación (semillas, plantas) que le dio origen fue adquirido ilegalmente.
No señala nada respecto del **Privilegio del Agricultor** (Uso de parte de la cosecha de una variedad protegida como semilla en la propia explotación)	Se establece la **facultad no obligatoria** de que los países puedan **acotar en sus leyes el Privilegio del Agricultor.** En el borrador de proyecto de Ley elaborado en la administración anterior se otorga sin límite a los pequeños agricultores
Período de Protección: Árboles y vides: 18 años Cultivos: 15 años	**Período de protección:** Árboles y vides: 25 años Cultivos: 20 años

Comercio Ilegal de Semillas

Comercio Ilegal de Semillas

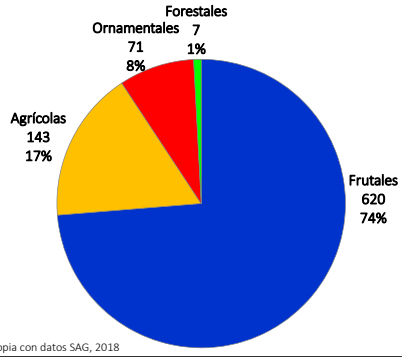
Algunas especies se pueden reproducir fácilmente: Venta Ilegal de Variedades Protegidas, sin ningún respaldo para el Agricultor

Venta Ilegal de Semillas :

- Diseminación de Enfermedades
- Evasión Tributaria
- Apropiación de Años de Investigación
- Desprotección Total del Agricultor
- Menos Recursos para la Investigación
- Menor Desarrollo de Nuevas Variedades
- Desincentivo al Fitomejoramiento Nacional
- Menores Rendimientos

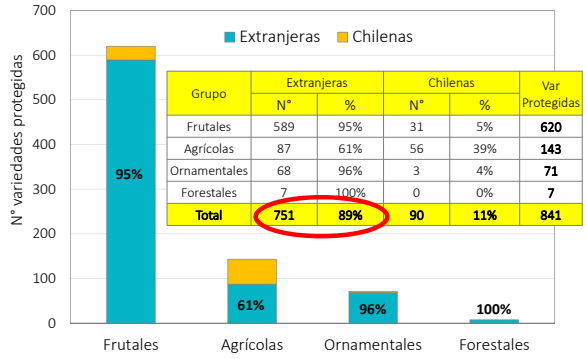
Derechos del Obtentor: No es un tema de la Industria Semillera, es de toda la Agricultura

(Registro de Variedades Protegidas en Chile, SAG, mayo 2018)



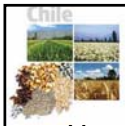
Fuente: Elaboración propia con datos SAG, 2018

La Importancia de las Variedades Protegidas Extranjeras en Chile y la Necesidad de Promover el Fitomejoramiento Nacional



Grupo	Extranjeras		Chilenas		Var Protegidas
	N°	%	N°	%	
Frutales	589	95%	31	5%	620
Agrícolas	87	61%	56	39%	143
Ornamentales	68	96%	3	4%	71
Forestales	7	100%	0	0%	7
Total	**751**	**89%**	**90**	**11%**	**841**

Fuente: Elaboración ANPROS con datos del Registro de Variedades Protegidas en Chile, SAG, mayo 2018



Mantener Acceso Fluido y Permanente a Variedades Desarrolladas en el Extranjero y Estimular el Desarrollo de Variedades en Chile son Elementos Críticos Para La Competitividad de la Agricultura Chilena

Lo Anterior Requiere que Chile Modernice su Legislación en Materia de Propiedad Intelectual Vegetal

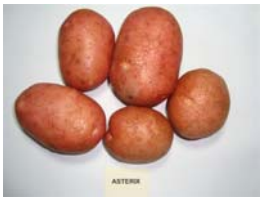
Los Agricultores No Están Obligados a Usar Variedades Protegidas

Los agricultores han sido, son y serán completamente libres para decidir que especie y variedad sembrar:

- ✓ Protegidas
- ✓ Públicas
- ✓ Tradicionales
- ✓ Híbridos No Protegidos (Maíz, Hortalizas, etc.)
- ✓ Otras Alternativas

31

LVOD SAG: 84



Variedades Protegidas: 26

32

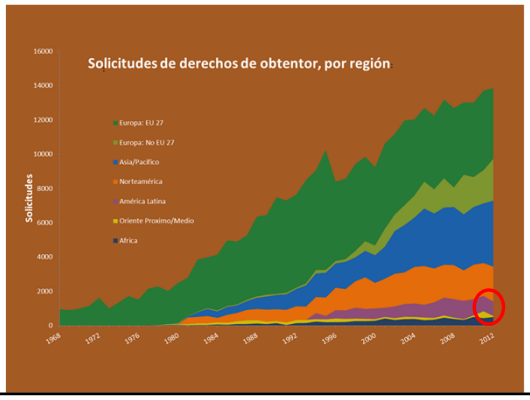
LVOD SAG: 75

Variedades Protegidas: 16

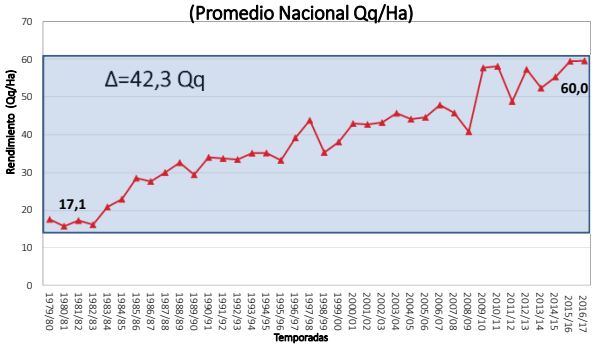
33

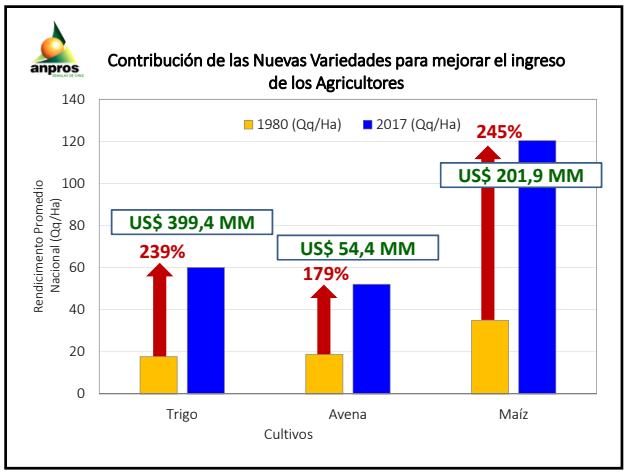
Otras (Híbridos, Tradicionales)

La Correlación Entre una Buena Protección y el Desarrollo de Nuevas Variedades



Evolución de los Rendimientos de Trigo (Promedio Nacional Qq/Ha)





Cultivo	Valor ($)	Valor (US$)
Trigo	252.761.536.449	399.427.216
Maiz	127.797.503.289	201.952.408
Avena	34.432.595.184	54.412.217
Arroz	22.259.826.948	35.176.162
Cebada	40.317.999.411	63.712.646
Triticale	2.901.683.627	4.585.395
Poroto	40.425.456.606	63882455,41
Papa	92.343.733.173	145.926.476
Raps	6.889.887.610	10.887.767
Remolacha	65.424.536.641	103.387.331
Lupino	8.466.450.248	13.379.135
Maravilla	6.917.563.336	10.931.501
Centeno	606.703.033	958.744
Tabaco	90.547.058	143.087
Tomate industrial	81.895.996.129	129.416.406
Achicoria Industrial	2.532.521.884	4.002.026
Lenteja	-642.940.536	-1.016.009
Garbanzo	1.792.991.822	2.833.381
Arveja	-1.087.670.163	-1.718.794
Chicharo	47.282.851	74.719
Total	**786.174.204.601**	**1.242.354.268**

Beneficio para los Agricultores:

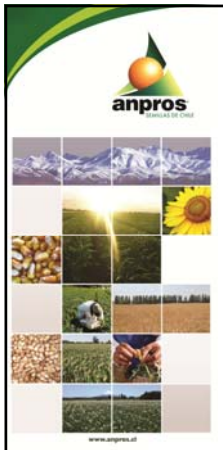
US$ 1.242 Millones

$$\sum_{t=t_0}^{T} (Q_t^i - Q_{t-1}^i) * H_t^i * P_t^i = \sum_{t=t_0}^{T} \Delta Q_t^i * H_t^i * P_t^i$$

Fuente: Elaboración ANPROS con datos ODEPA

Ventajas de una PIV Moderna:

- ✓ Fomento de las actividades de fitomejoramiento nacional
- ✓ Mayor acceso a las variedades mejoradas del mundo
- ✓ Protección para variedades tradicionales
- ✓ Fomenta la diversificación de los tipos de obtentor
- ✓ Mayor competitividad en los mercados extranjeros
- ✓ Seguridad para el Agricultor
- ✓ Protección del Patrimonio Fitosanitario de Chile
- ✓ Mejores Rendimientos y mayor competitividad para toda la agricultura y para todos los agricultores de Chile



UPOV

Technical Working Party for Fruit Crops
49th Session

"La Importancia de la Propiedad Intelectual Vegetal: Perspectiva de la Industria Semillera Chilena"

¡Muchas Gracias!

Mario Schindler M.
Director Ejecutivo
ANPROS A.G.

Santiago 21 de Noviembre 2018

[Annex V follows]

ANNEX V

PRESENTATION BY MR. SERGIO MAUREIRA BAEZA, SECRETARY-GENERAL,
FRUIT EXPORT ASSOCIATION ASOEX

consorcio Tecnológico de la Fruta

... un aporte a la innovación de ASOEX

Impacto del Fitomejoramiento en la Fruticultura Nacional

21 Nov 2018

Con el apoyo de CORFO

¿Por qué se constituye el Consorcio Tecnológico de la Fruta?

¿Qué es el consorcio?

Sociedad Anónima que agrupa las principales empresas productoras y exportadoras de frutas de Chile, la Asociación de Exportadores de Frutas de Chile (ASOEX), la Pontificia Universidad Católica de Chile (UC) y el Instituto de Investigaciones Agropecuarias (INIA).

- Surgió como la respuesta de la Industria Frutícola a **la invitación del Estado**, a cofinanciar un Programa de I+D+i, enfocado a solucionar problemáticas sectoriales, disponiendo un subsidio para estimular la inversión privada en el desarrollo de nuevas variedades de frutas para Chile.

- El problema a resolver surgió de un análisis de competitividad de la Industria a **largo plazo**, amenazada por la irrupción de **nuevas variedades protegidas**, con modelos de licenciamiento restringido (**Variedades Club**) y por **problemas de productividad, calidad y condición** de la fruta.

El Consorcio

Ronald Bown Fernández – **Presidente**
Rodrigo Figueroa Espinoza– **Vicepresidente**
Sergio Maureira – **Gerente General**
María Fernanda Álvarez – **Coordinadora I+D**
Jessica Contreras – **Contabilidad**

COMITÉS TÉCNICOS DE LA INDUSTRIA

EQUIPOS DE TRABAJO PMG

Director Dr. Patricio Arce-Johnson; Ciencias Biológicas, UC.

Director Dr. Juan Pablo Zoffoli, Agronomía UC.

Director Dr. Pablo Grau, INIA Quilamapu.

Directora Dra. Marlene Ayala, Agronomía UC.

Directora Dra. Marina Gambardella, Agronomía UC.

Administración
Difusión y Transferencia

consorcio Tecnológico de la Fruta

PORTAFOLIO DE PROYECTOS

- Director Dr. Patricio Arce-Johnson; Ciencias Biológicas, UC.
- Obtener variedades de uva de mesa, que posean buena **calidad** de fruto, a**pirénicas** y de mayor **tolerancia a pudriciones** durante su vida de poscosecha.

- Director Dr. Juan Pablo Zoffoli, Agronomía UC.
- Obtener nuevas variedades para exportación de fruta fresca de **alta calidad y buena poscosecha.**

- Director Dr. Pablo Grau, INIA Quilamapu.
- Producción de nuevas variedades con características de **alta calidad** de fruto, buena poscosecha y resistencia a **Venturia**.

- Directora Dra. Marlene Ayala, Agronomía UC.
- Obtener variedades **tempraneras y tardías** de alta **calidad**, adaptadas a las condiciones de producción y **exportación** de la industria chilena.

ADMINISTRACIÓN, DIFUSIÓN y TRANSFERENCIA

consorcio Tecnológico de la Fruta

- Directora Dra. Marina Gambardella, Agronomía UC.
- Herramientas biotecnológicas de apoyo.
- Mejoras en la productividad y poscosecha.
- Obtener nuevas variedades de **alta calidad y buena poscosecha** para el consumo **fresco y agroindustrial**.

RESULTADOS Y AVANCES

consorcio Tecnológico de la Fruta
... un aporte a la innovación de ASOEX

- Se han establecido en terreno **más de 170.000 híbridos**, en 10 generaciones (2007 –2018), donde cada año se seleccionan híbridos candidatos a convertirse en variedad.
- A la fecha se han obtenido **más de 70 selecciones** de Uvas, Carozos, Cerezos, Manzanos y Frambueso.
- **3 variedades de frambuesas** comercializadas en Chile y el mundo: **Santa Teresa, Santa Clara y Santa Catalina.**

VARIEDADES DE FRAMBUESA DEL CONSORCIO

Variedad	Peso Promedio (g)	Sólidos Solubles (°Brix)
Heritage	3,0	10,5
Santa Teresa	6,1	9,8
Santa Clara	4,1	10,1
Santa Catalina	4,2	10,1


SANTA CLARA VARIETY


SANTA TERESA VARIETY


SANTA CATALINA VARIETY

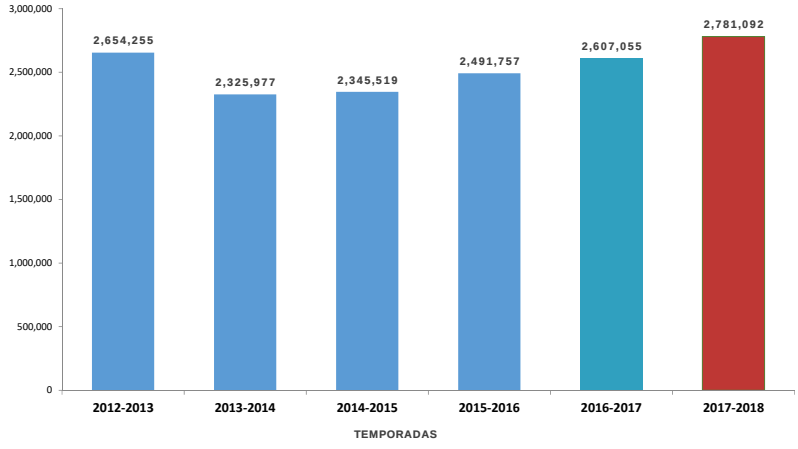
Protegidas en Chile 25 de Sept de 2014

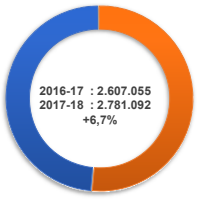
PROTECCIÓN TAMBIÉN SOLICITADA EN COMUNIDAD EUROPEA, PERÚ Y MÉXICO.

El Caso de la uva de mesa chilena

Uno de los fuertes impulsores de la adopción de nuevas variedades son las cadenas de supermercados. Los clientes de las empresas de retail del hemisferio norte están comenzando a privilegiar frutas más dulces, de colores más vivos y de mayor calibre. **Esta evolución de la demanda ha estado impulsada por la oferta de los últimos desarrollos en genética vegetal.**

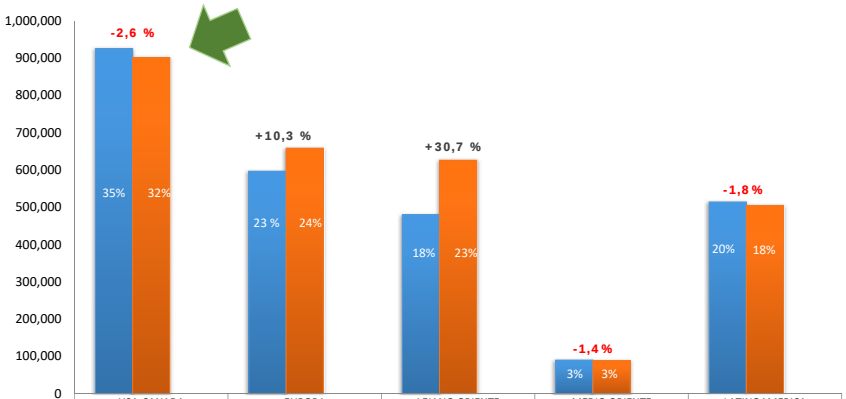
EXPORTACIONES DE FRUTA FRESCA CHILENA
EVOLUCIÓN ÚLTIMAS SEIS TEMPORADAS
(Toneladas)



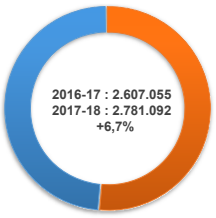


Fuente: SAG | ASOEX. Información elaborada por ASOEX.

EXPORTACIONES DE FRUTA FRESCA SEGÚN MERCADO DE DESTINO (Toneladas)



	USA-CANADA	EUROPA	LEJANO ORIENTE	MEDIO ORIENTE	LATINOAMERICA
2016-17	925,459	597,116	479,681	90,422	514,377
2017-18	901,423	658,711	626,729	89,171	505,058
% REP	32.4	23.7	22.5	3.2	18.2



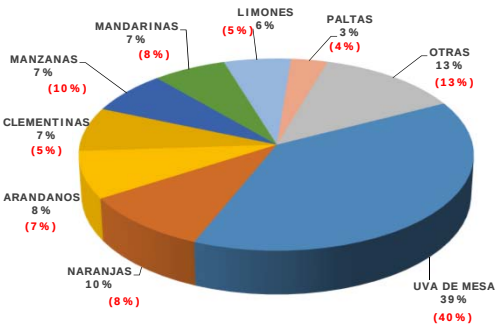
Fuente: SAG | ASOEX. Información elaborada por ASOEX.

EXPORTACIONES DE FRUTA FRESCA SEGÚN ESPECIE Y MERCADO DE DESTINO (% por Mercado para cada Especie)

ESPECIES	MERCADOS DE DESTINOS						2017-2018 TONELADAS	% PART.
	U.S.A.	CANADA	EUROPA	L. ORIENTE	M.ORIENTE	L.AMERICA		
MANZANAS	7,9%	3,0%	29,1%	15,7%	8,3%	36,0%	774.807	27,9%
UVA DE MESA	44,6%	2,6%	17,6%	25,7%	1,5%	8,1%	731.746	26,3%
CEREZAS	4,1%	0,3%	1,9%	90,3%	0,1%	3,4%	186.899	6,7%
KIWIS	13,6%	1,0%	40,5%	19,3%	4,1%	21,5%	176.374	6,3%
PALTAS	19,4%	0,0%	59,9%	8,9%	0,2%	11,6%	143.395	5,2%
PERAS	8,2%	0,1%	47,9%	0,5%	2,7%	40,5%	129.564	4,7%
CIRUELAS	18,5%	1,7%	21,5%	36,2%	2,1%	19,9%	120.652	4,3%
ARANDANOS	60,9%	3,3%	23,6%	11,9%	0,1%	0,2%	110.207	4,0%
NARANJAS	94,5%	1,1%	0,5%	0,9%	0,0%	3,1%	87.552	3,1%
LIMONES	60,8%	0,4%	10,9%	26,5%	0,4%	1,1%	84.058	3,0%
NECTARINES	30,6%	3,4%	18,4%	30,9%	0,1%	16,5%	66.628	2,4%
CLEMENTINAS	99,2%	0,3%	0,1%	0,0%	0,0%	0,4%	63.048	2,3%
MANDARINAS	91,2%	3,3%	4,7%	0,0%	0,0%	0,7%	61.142	2,2%
DURAZNOS	55,1%	4,8%	5,1%	0,0%	0,0%	35,0%	31.124	1,1%
GRANADAS	55,2%	0,8%	41,3%	1,3%	0,6%	0,8%	5.458	0,2%
OTRAS	46,1%	2,6%	9,2%	0,7%	1,9%	39,3%	8.439	0,3%
% PART.2017-2018	**30,3%**	**2,1%**	**23,7%**	**22,5%**	**3,2%**	**18,2%**	**2.781.092**	**100,0%**

Fuente: SAG | ASOEX. Información elaborada por ASOEX.

PRINCIPALES ESPECIES EXPORTADAS A U.S.A. (Toneladas)



( ) % Volumen Temporada 2016-2017

ESPECIES	TEMPORADAS		% VAR
	2016-2017	2017-2018	
UVA DE MESA	345.275	326.260	-5,5
NARANJAS	71.101	82.714	16,3
ARANDANOS	64.855	67.098	3,5
CLEMENTINAS	40.111	62.561	56,0
MANZANAS	85.249	61.014	-28,4
MANDARINAS	71.143	55.791	-21,6
LIMONES	44.390	51.086	15,1
PALTAS	33.301	27.888	-16,3
KIWIS	26.503	23.979	-9,5
CIRUELAS	22.879	22.327	-2,4
NECTARINES	24.099	20.408	-15,3
DURAZNOS	16.033	17.157	7,0
PERAS	11.446	10.599	-7,4
CEREZAS	6.118	7.571	23,8
GRANADAS	3.592	3.012	-16,1
OTRAS	3.819	3.894	2,0
TOTAL	**869.914**	**843.359**	**-3,1**

Fuente: SAG | ASOEX. Información elaborada por ASOEX.

…. Mientras tanto en Chile

Participación Variedades Tradicionales: Thompson + Flame + Red Globe + Crimson + Sugraone + A. Royal sobre el total exportado últimas 8 temporadas
(millones de cajas)

	Temporada	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
EEUU	Sumatoria	70,180	68,056	65,293	61,666	52,425	45,852	40,579	31.215
	Total Temp.	94,569	97,858	101,358	117,462	110,993	110,504	110,084	109.168
	% Particip.	71,9	66,7	60,1	53,9	47,2	41,5	36,8	28,59
CHILE	Sumatoria	98,556	93,933	85,039	81,842	86,280	77,780	77.610	76.175
	Total Temp.	108,210	102,439	101,188	87,578	93,658	85,440	87,793	90.561
	% Particip.	91,1	91,7	84,1	93,5	92,1	92,1	88,4	84,1

Fuente: **Dragomir Ljubetic M. Ing. Agr. PUCV. Octubre 2018. Datos de CTGC y ASOEX.**

Condición de la fruta en destino

EXPORTACIONES UVA DE MESA CHILE TEMPORADA 2015/2016 -2016/2017- 2017/2018

VARIEDADES	TEMP.2015-2016	TEMP.2016-2017	TEMP. 2017-2018
TOTAL VARIEDADES TRADICIONALES	82.072.794	78.901.649	81.323.481
% del total	96	92	88,8
TOTAL VARIEDADES NUEVAS	3.367.760	6.819.418	9.237.188
% del total	4	8	10,2
TOTAL TODAS	85.440.554	87.793.742	90.560.669

Fuente: **Dragomir Ljubetic M. Ing. Agr. PUCV. Octubre 2018. Datos de ASOEX.**

ALGUNAS SELECCIONES DE NUESTROS PROGRAMAS DE MEJORAMIENTO GENÉTICO

- **Seedless**
- **Fecha cosecha: 21 febrero 2018**
- Calibre de baya: 28,9 y 19,1 mm sin GA
- **Firme al tacto**
- **Crocante**
- Morada-negra
- Muy buen sabor
- Raquis Verde
- Racimo suelto y uniforme
- Largo racimo: 17 cm
- Piel delgada
- Peso promedio baya: 8,05 gr
- Peso promedio racimo: 340 gr
- Firmeza (texturómetro): 4,66 N
- Aceptabilidad: Muy buena
- SST: 17,6°Brix
- Acidez: 0,47%
- Relación SST/AT: 37,4

- **Seedless**
- **Fecha de cosecha: 14 febrero 2018**
- Calibre de Baya: 25,64 y 18,47 mm sin GA
- **Firme al tacto**
- **Crocante**
- Morada-negra
- Muy buen sabor
- Raquis Verde
- Racimo Suelto y uniforme
- Largo racimo: 19 cm
- Piel delgada
- Peso promedio baya: 6,51 gr
- Peso promedio racimo: 466 gr
- Firmeza (texturómetro): 5,05 N
- Aceptabilidad: Buena
- SST: 18,3 °Brix
- Relación SST/AT: 28,15
- Acidez: 0,65 %

- **Seedless**
- **Fecha cosecha: 24/01/2017 y 31/01/2018**
- **Calibre de Baya**: 22,25 y 18 mm
- **Firme al tacto**
- **Crocante**
- Color: Rojo
- Buen sabor
- Calibre uniforme
- Racimo compacto
- Largo racimo: 20,7 cm
- Piel delgada
- Escobajo Verde
- Peso promedio Baya: 4,33 gr
- Peso promedio Racimo: 324,08 gr
- Aceptabilidad: Muy buena
- SST: 19°Brix
- Relación SST/AT: 33,9
- Acidez: 0.56%
- Firmeza (texturómetro): 4,17 N

Ciruela

- Color: **Rojo**
- Tamaño: **medio 90-100 g.**
- S. Solubles: **16-18 %**
- Textura: **Jugosa, firme**.
- Vida Poscosecha: **45 días.***
- Fecha cosecha comparada:
  - **26 dic – 3 en.**
  - **10 días antes que Fortune,**
  - **Fecha Black Amber**.

* 100% de los frutos sin desórdenes internos, no se evaluó mas tiempo.

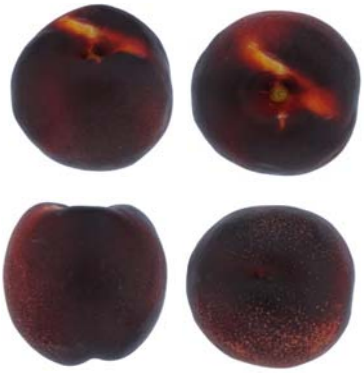
Nectarín

- Color: **Rojo, buena coloración**
- Tamaño: **grande 138 g**
  - **productiva**
- S. Solubles: **13-18 %, sub-ácido**
- Textura: **jugosa, firme.**
- Vida Poscosecha: **60 días**.*
- Fecha cosecha comparada:
  - **17-22 ene.**
  - **Fecha similar a Venus, pero mejor color y vida poscosecha**

* 100% de los frutos sin desórdenes internos, no se evaluó mas tiempo.

Nectarín

- Color: **Rojo, muy buena coloración**
- Tamaño: **grande 136 g**
  - **productiva**
- S. Solubles: **13-18 %,**
  muy baja acidez.
- Textura: **jugosa, firme.**
- Vida Poscosecha: **45 días**.*
- Fecha cosecha comparada:
  - **4-7 ene.**
  - **Fecha similar a Ruby diamond, pero mejor poscosecha**



* 100% de los frutos sin desórdenes internos, no se evaluó mas tiempo.

Durazno

- Color: 80% **Rojo, pulpa blanca**
- Tamaño: **170 g**
- S. Solubles: 12-13 **%, baja acidez.**
- Textura: **jugosa, firme.**
- Vida Poscosecha: **50 días**.*
- Fecha cosecha comparada:
  - **17-22 ene.**

* 100% de los frutos sin desórdenes internos, no se evaluó mas tiempo.

Resistencia a Venturia y calidad

Fecha de Cosecha **08-05-2018**

Parámetros	Evaluación
	Cosecha
Color Cubrimiento (%)	95,0
Calibre Polar (mm)	70,5
Calibre Ecuatorial (mm)	84,8
Peso (g)	242,4
Defectos	
Golpe de sol	-
Russet	-
Daño Insecto	-
Corazón Acuoso	-
Pedunculo grueso	-
Partidura	-
Ruginosidad Peduncular	-
Calidad	
Firmeza (lb)	13,7
Jugosidad	Jugosa
Sabor	Dulce
Textura	Firme, crocante
Test de Yodo (1-10)	3,0
SS (%)	12,8
Acidez Titulable (%)	0,6
Observaciones	

Fecha de Cosecha **24-04-2018**

Parámetros	Evaluación
	Cosecha
Color Cubrimiento (%)	100,0
Calibre Polar (mm)	69,3
Calibre Ecuatorial (mm)	74,4
Peso (g)	203,6
Defectos	
Golpe de sol	-
Russet	-
Daño Insecto	-
Corazón Acuoso	Leve
Pedunculo grueso	-
Partidura	-
Ruginosidad Peduncular	-
Calidad	
Firmeza (lb)	14,9
Jugosidad	
Sabor	Muy dulce
Textura	Firme, crocante
Test de Yodo (1-10)	10,0
SS (%)	14,2
Acidez Titulable (%)	0,6
Observaciones	

[Annex VI follows]

ANNEX VI

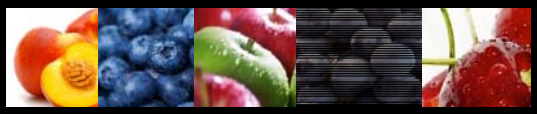
PRESENTATION BY MR. RODRIGO CRUZAT GONZÁLEZ, HEAD, CONSORCIO DE BIOFRUTALES S.A

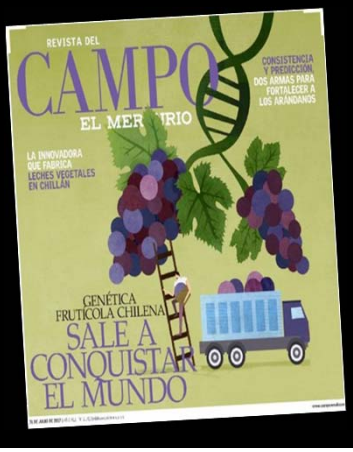
TALLER SOBRE EL IMPACTO DEL DERECHO DEL OBTENTOR EN CHILE
Santiago, CHILE – 21 de noviembre 2018

BIOFRUTALES
Genetic Fruit Improvement

"Experiencia en la Vinculación Público-Privada de Largo Plazo para la Generación de Nuevas Variedades Frutales"

CONSORCIO BIOFRUTALES S.A.





- SOCIOS BIOFRUTALES

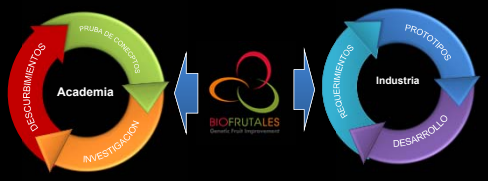
INIA
Universidad Andrés Bello
Universidad Federico Sta. María
Universidad de Talca
U. de Chile
Fundación Chile
Agrícola Brown
Univiveros
Vivero El Tambo
Vivero Los Olmos
Viveros Requínoa
ANA Chile
Fedefruta

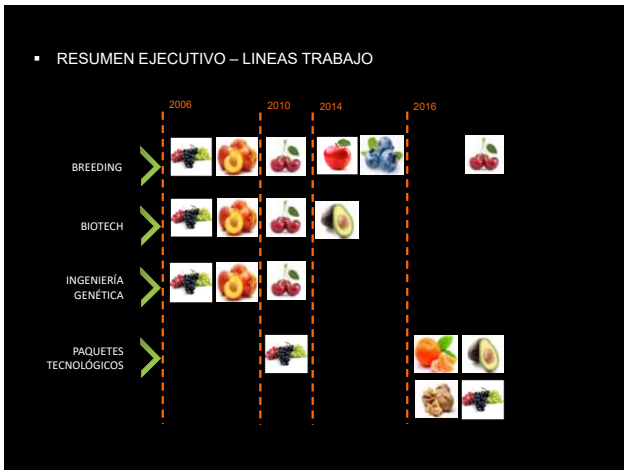
MISIÓN CONSORCIO BIOFRUTALES S.A.

Promovemos el desarrollo de programas de mejoramiento genético frutales en Chile para la generación de variedades de alta calidad, adaptadas efectivamente a las condiciones de producción y comerciales del país, y la generación de capacidades en biotecnología que apoye el trabajo de mejoramiento.

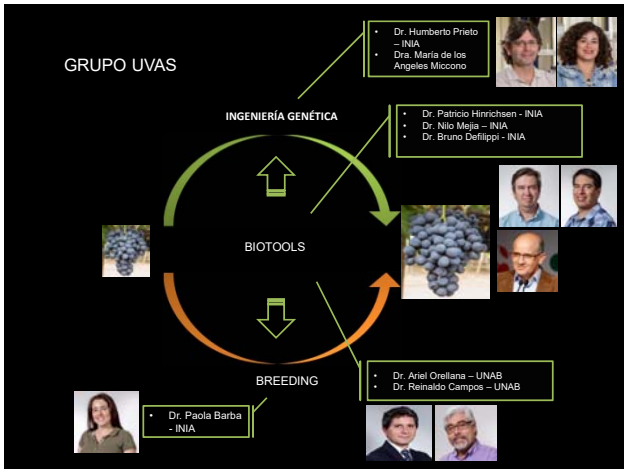
BIOFRUTALES
Genetic Fruit Improvement

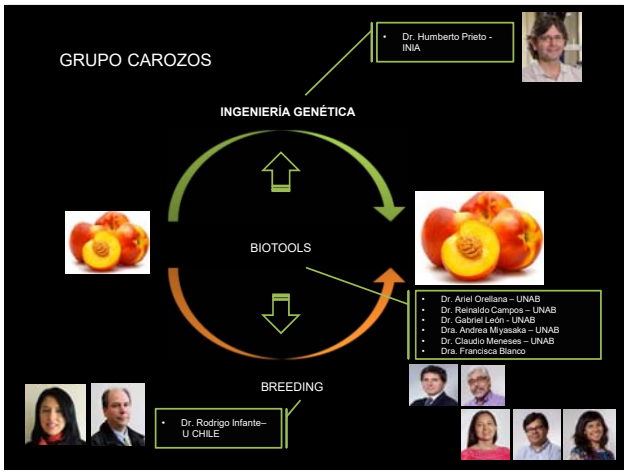
- MODELO DE TRABAJO

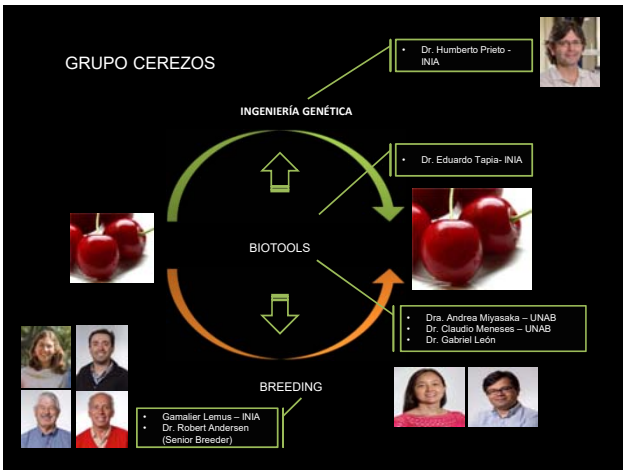


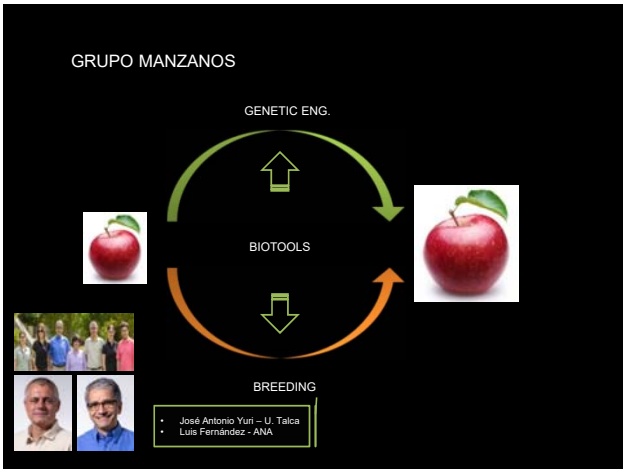

RESUMEN EJECUTIVO – LINEAS TRABAJO
2006
2010
2014
2016
BREEDING
BIOTECH
INGENIERÍA GENÉTICA
PAQUETES TECNOLÓGICOS

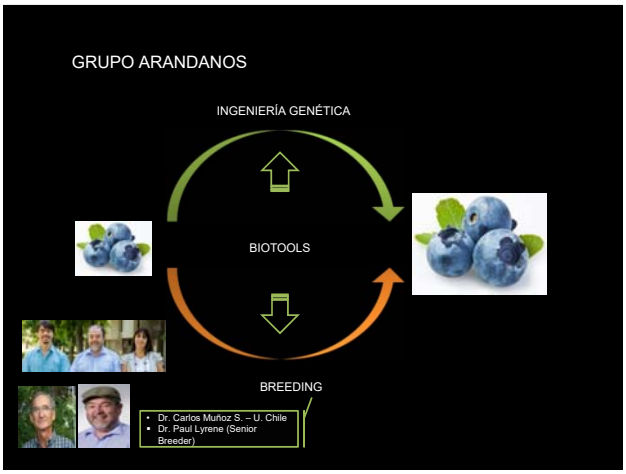

PLATAFORMA DE COLABORACIÓN INNOVATIVA
BREEDING
BIOTOOLS
ESCALAMIENTO
TRANSFERENCIA
PMG Vides
PMG Carozos
PMG Manzano
PMG Cerezo
PMG Arándanos
Plataforma Colaborativa


GRUPO UVAS
Dr. Humberto Prieto – INIA
Dra. María de los Angeles Miccono
INGENIERÍA GENÉTICA
Dr. Patricio Hinrichsen - INIA
Dr. Nilo Mejia – INIA
Dr. Bruno Defilippi - INIA
BIOTOOLS
BREEDING
Dr. Ariel Orellana – UNAB
Dr. Reinaldo Campos – UNAB
Dr. Paola Barba - INIA

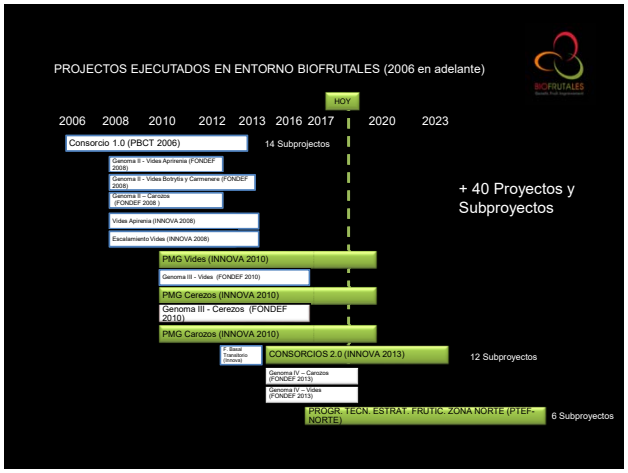

GRUPO CAROZOS
Dr. Humberto Prieto - INIA
INGENIERÍA GENÉTICA
BIOTOOLS
Dr. Ariel Orellana – UNAB
Dr. Reinaldo Campos – UNAB
Dr. Gabriel León - UNAB
Dra. Andrea Miyasaka – UNAB
Dr. Claudio Meneses – UNAB
Dra. Francisca Blanco
BREEDING
Dr. Rodrigo Infante– U CHILE


GRUPO CEREZOS
Dr. Humberto Prieto - INIA
INGENIERÍA GENÉTICA
Dr. Eduardo Tapia- INIA
BIOTOOLS
Dra. Andrea Miyasaka – UNAB
Dr. Claudio Meneses – UNAB
Dr. Gabriel León
BREEDING
Gamalier Lemus – INIA
Dr. Robert Andersen (Senior Breeder)


GRUPO MANZANOS
GENETIC ENG.
BIOTOOLS
BREEDING
José Antonio Yuri – U. Talca
Luis Fernández - ANA

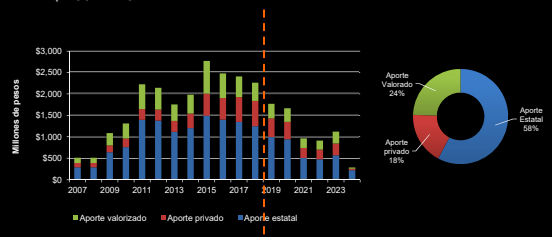

GRUPO ARANDANOS
INGENIERÍA GENÉTICA
BIOTOOLS
BREEDING
Dr. Carlos Muñoz S. – U. Chile
Dr. Paul Lyrene (Senior Breeder)

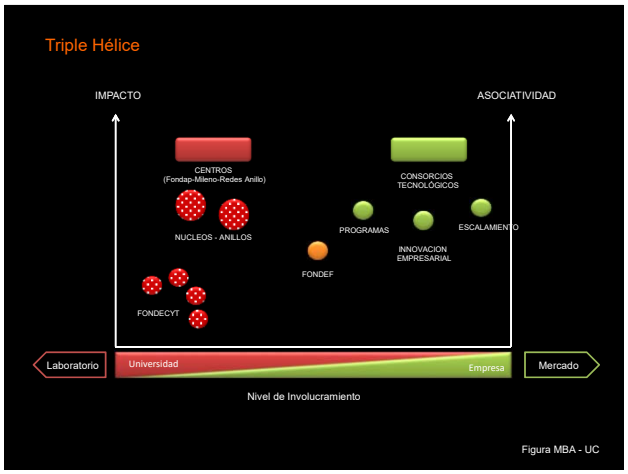
Conceptos de Proyectos

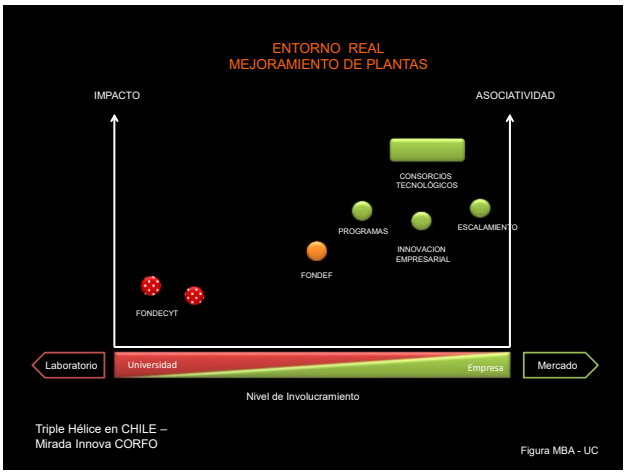


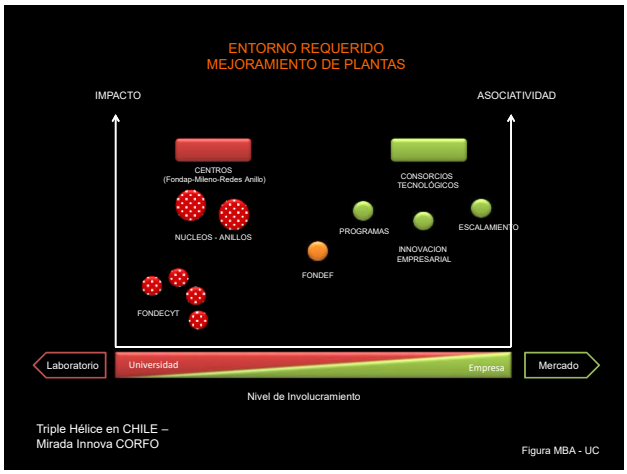
- CIFRAS DE INVERSION EN I+D+i

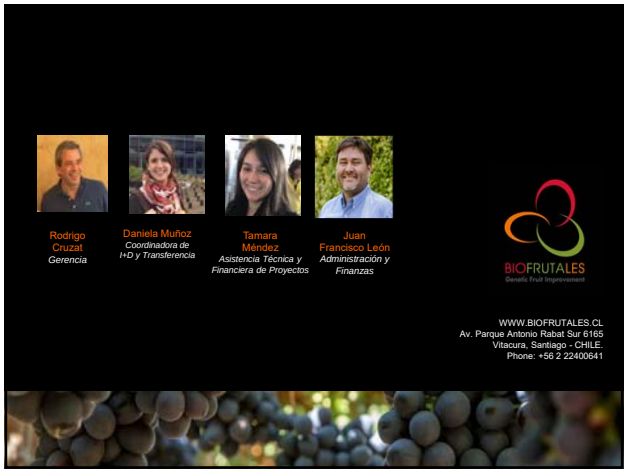
GASTOS TOTALES
MM$ 2007 – 2024











[Annex VII follows]

PRESENTATION BY MS. MARLENE AYALA, RESEARCHER AND PROFESSOR, *PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE*, TECHNICAL DIRECTOR OF CHERRY BREEDING PROGRAM OF *CONSORCIO TECNOLÓGICO DE LA FRUTA*

How was the Consorio Tecnológico de la Fruta established?

¿What is the Consorcio?

Limited Company that brings together the main fruit growers and exporters companies in Chile, the Association of Fruit Exporters of Chile (ASOEX), the Pontificia Universidad Católica de Chile (UC) and the Agricultural Research Institute(INIA).

It emerged as the answer of the Fruit Industry to the invitation of the State, to co-finance an R&D+i Program, focused on solving sectorial problems, providing a subsidy to stimulate private investment in the development of new fruit varieties for Chile.

The problem to be solved arose from an analysis of competitiveness of the industry in the long term, threatened by the emergence of new protected varieties, with models of restricted licensing (Club Varieties) and by problems of productivity and condition of the fruit.

The Consortium, Business partners

Ronald Bown Fernández – **President**
Rodrigo Figueroa Espinoza– **Vicepresident**
Sergio Maureira – **General Manager**
María Fernanda Álvarez – **R & D Coordinator**
Jessica Contreras – **Accountant**

TECHNICAL COMMITTEES OF THE INDUSTRY

BREEDING PROGRAMS

PhD Patricio Arce-Johnson; Biological Sciences UC.

PhD Juan Pablo Zoffoli, Agronomics UC.

PhD Pablo Grau, INIA Quilamapu.

PhD Marlene Ayala, Agronomics UC.

PhD Marina Gambardella, Agronomics UC.

Management and Extension

NEW RASPBERRIES VARIETIES

Yield per plant (g) in Santo Domingo, V Region, Chile

Variety	2012/2013	2012/2014	2014/2015
Santa Teresa	1,242	1,831	1,094
Santa Clara	918	1,637	1,271
Santa Catalina	1,118	1,826	1,379
Heritage*	406	420	542

(Santo Domingo, V Región).

Sweet Cherry Breeding Program (PMGce) New varities for Chile

November, 2018

mayalaz@uc.cl

Research group

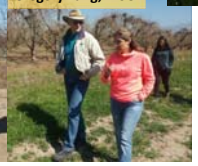
Research team

Marlene Ayala
Marlene Gebauer
Juan Pablo Zoffoli

Technical Team

Internacional Collaborators

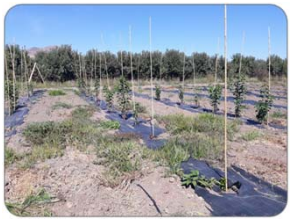
Gregory Lang, MSU



Janos Apostol, NARIC

Geza Bujdozo, NARIC

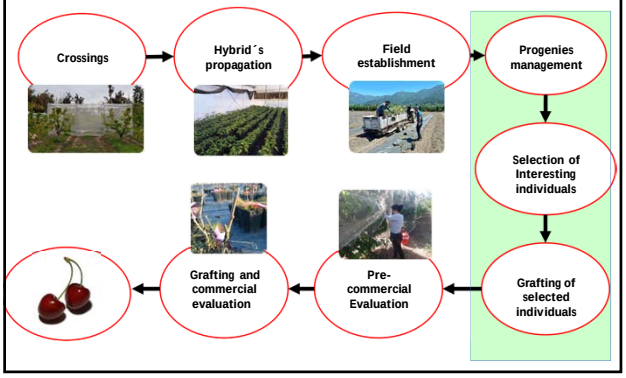
Breeding Program Orchards



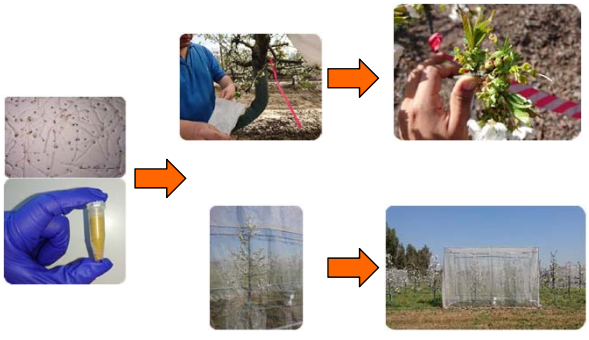
Experimental Station (Pirque):
- Progenies: 7,8 ha
- Germplasm collection: 1,3 ha

San Vicente Paul Agricultural School (Coltauco):
- Progenies: 3,3 ha
- Selections: 0,2 ha

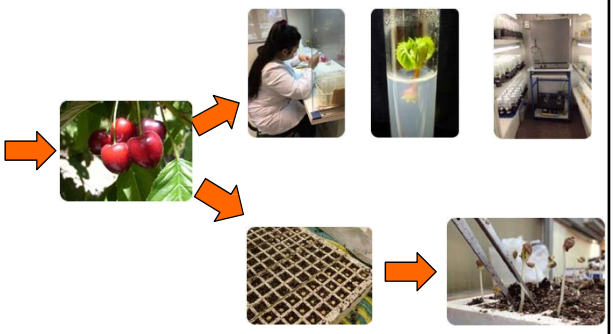
Flow of activities



Main activities



Main activities



Main activities

Main activities

Main activities

Group of colaborators and stakeholders

Crossings

Season	Number of combinations	Harvested fruit
2010-2011	50	28,453
2011-2012	76	32,020
2012-2013	69	33,045
2013-2014	57	31,391
2014-2015	54	27,749
2015-2016	65	27,052
2016-2017	62	17,943
2017-2018	54	16,995
2018-2019	46	On course*
TOTAL		197,653

Conclusions

- 4.000 hybrids per year were obtained in the breeding program.
- More than 27.500 hybrids had been stablished in field.
- Main value of efficiency vary depending on the propagation strategy:
  - Embryo rescue: 20.2%
  - Stratification of seeds: 26.6%

Conclusions (cont.)

- Around 1.100 individuals had been evaluated (data referred to flowering and harvest time and fruit quality).
- 20 interesting individuals were grafted and established in field (in Coltauco) for pre-commercial evaluation.
- A new selection phase started from 2017, with a more intense and specific evaluation, since we count with a considerable amount of families (crossings) to evaluate.
- Almost 300 hundred families with 1 to 200 individuals.

[Annex VIII follows]

Annex VIII

LIST OF LEADING EXPERTS

DRAFT TEST GUIDELINES TO BE SUBMITTED TO THE TECHNICAL COMMITTEE IN 2019

All requested information to be submitted to the Office of the Union

by January 4, 2019

Species	Basic Document(s)	Leading expert(s)
Almond (*Prunus amygdalus* Batsch) (Partial revision: Characteristic 43)	TG/56/4, TWF/49/4	Ms. Nuria Urquía Fernández (ES)
*Blueberry (*V. angustifolium* x *V. myrsinites* x *V. corymbosum, V. angustifolium* Aiton, Hybrids between *V. corymbosum* and *V. angustifolium*, *V. corymbosum x V. angustifolium* x *V. virgatum*, *V. corymbosum* L., *V. formosum* Andrews, *V. myrtilloides* Michx., *V. myrtillus* L., *V. simulatum* Small, *V. virgatum* Aiton) (Revision)	TG/137/5(proj.4)	Mr. Nik Hulse (AU)
Coconut (*Cocos nucifera* L.) (Partial revision: example varieties of Chars. 5 and 11; Ad. 11)	TG/314/1, TWF/49/5	Ms. Stefânia Palma Araujo (BR)
Kiwifruit (*Actinidia* Lindl.) (Partial revision: Characteristics 18, 25 and 49; addition of new char. after Char. 28 “Petiole: pubescence”)	TG/98/7, TWF/49/6	Mr. Chris Barnaby (NZ)
*Macadamia *(Macadamia integrifolia* Maiden et Betche, *Macadamia tetraphylla* L. Johns.) (Revision)	TG/111/4(proj.4)	Mr. Nik Hulse (AU)

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWF/50
(* indicates possible final draft Test Guidelines)

(Guideline date for Subgroup draft to be circulated by Leading Expert: March 15, 2019
Guideline date for comments to Leading Expert by Subgroup: April 12, 2019)

New draft to be submitted to the Office of the Union
May 10, 2019

Species	Basic Document(s)	Leading expert(s)	Interested experts (States/Organizations) [1]
Apple (fruit varieties) (Revision) (*Malus domestica* Borkh.)	TG/14/10(proj.1)	Mr. Erik Schulte (DE)	AU, BR, CA, CL, CN, CZ, FR, HU, JP, KR, MX, NL, NZ, PL, QZ, RU, ZA, CIOPORA, Office
*Apricot (*Prunus armeniaca* L.) (Revision)	TG/70/5(proj.2)	Mr. Hennie Venter (ZA)	AU, BG, CN, CZ, ES, FR, HU, IL, IT, JP, KR, MA, NZ, PL, QZ, RO, CIOPORA, Office
Argania (*Argania spinosa* (L.) Skeels)	TG/ARGAN(proj.3)	Ms. Ibtihaj Belmehdi (MA)	IL, Office
Avocado (*Persea americana* Mill.) (Partial revision: addition of new stem characteristic)	TG/97/4	Mr. Ephraim Wachira (KE)	AU, ES, JP, MX, NZ, QZ, Office
Avocado Rootstocks (*Persea americana* Mill.; *Persea schiedeana* Nees) (Partial revision: Chapter 2)	TG/318/1 Corr.	Ms. Nuria Urquía Fernández (ES)	AU, JP, KE, MX, NZ, QZ, Office
Date Palm (*Phoenix dactylifera*)	TG/PHOEN_DAC (proj.1)	Mr. Rashid Al-Yahyai (OM)	BR, IL, MA, MX, TN, Office
Grapevine (*Vitis* L.) (Revision)	TG/50/10(proj.1)	Mr. Luca Aggio (IT)	AU, BR, CA, CL, CN, CZ, DE, ES, FR, HU, JP, KR, MX, NZ, QZ, RU, ZA, CIOPORA, Office
Guava (*Psidium guajava* L.) (Revision)	TG/110/3	Ms. Ling Gao (CN)	BR, MX, QZ, Office
Goji (*Lycium* L.)	NEW	Ms. Chuanhong Zhang (CN)	DE, KR, QZ, Office
Mulberry (*Morus* L.)	NEW	Mr. Yosuke Abe (JP)	BR, CN, IT, KR, QZ, Office
Oranges (*Citrus* L. - Group 2) (Partial revision: Characteristics 26, 56, 64, 81, 83)	TG/202/1 Rev.	Ms. Nuria Urquía Fernández (ES)	BR, FR, JP, MO, NZ, QZ, CIOPORA, Office
*Physic Nut (*Jatropha curcas* L.)	TG/JATRO_CUR (proj.2)	Mr. Alejandro Barrientos-Priego (MX)	BR, IL, QZ, Office
Pistachio (*Pistacia* L.)	TG/PISTA(proj.2)	Ms. Urszula Braun-Mlodecka (QZ)	AU, ES, IT, KE, MX, ZA, Office
Pummelo (Grapefruit and) (*Citrus* L. - Group 4) (Partial revision: Characteristics 30, 50, 63, 65, 66, 81)	TG/204/1 Rev.	Ms. Nuria Urquía Fernández (ES)	BR, FR, JP, MO, NZ, QZ, CIOPORA, Office

[1] for name of experts, see List of Participants

Species	Basic Document(s)	Leading expert(s)	Interested experts (States/Organizations) [1]
Strawberry (*Fragaria* L.) (Revision)	TG/22/10 Rev.	Mr. Erik Schulte (DE)	AU, CA, CL, ES, JP, KR, MO, NZ, PL, PT, QZ, CIOPORA, Office
Sweet Cherry (*Prunus avium* L.) (Revision)	TG/35/7	Ms. Carole Dirwimmer (FR)	AU, BG, CA, CZ, ES, HU, IT, JP, KR, NZ, PL, QZ, RO, SK, ZA, CIOPORA, Office

POSSIBLE TEST GUIDELINES TO BE DISCUSSED IN 2020

Species	Basic Document(s)
Carambola (*Averrhoa carambola* L.)	NEW
Sour Cherry (*Prunus cerasus* L.); Duke Cherry (*Prunus ×gondouinii* (Poit. & Turpin) Rehder) (Revision)	TG/230/1

[End of Annex VIII and of document]