

**Technical Working Party for Vegetables****TWV/54/9****Fifty-Fourth Session  
Brasilia, Brazil, May 11 to 15, 2020****Original:** English  
**Date:** May 15, 2020

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**REPORT**

*Adopted by the Technical Working Party for Vegetables (TWV)*

*Disclaimer: this document does not represent UPOV policies or guidance*

Opening of the session

1. The Technical Working Party for Vegetables (TWV) held its fifty-fourth session, hosted by Brazil and organized by electronic means, from May 11 to 15, 2020. The list of participants is reproduced in Annex I to this report.
2. The session was opened by Ms. Romana Bravi (Italy), Chairperson of the TWV, who welcomed the participants and thanked Brazil for hosting the TWV session.
3. The TWV was welcomed by Mr. Marcio Rezende Evaristo Carlos, Deputy Secretary of Animal and Plant Health (SDA), Ministry of Agriculture, Livestock and Food Supply (MAPA).
4. The TWV received a presentation on plant variety protection in Brazil by Mr. Ricardo Zanatta Machado, Coordinator, National Service of Plant Variety Protection (SNPC). A copy of the presentation is provided in Annex II to this report.

Adoption of the agenda

5. The TWV adopted the agenda as presented in document TWV/54/1 Rev..

Short Reports on Developments in Plant Variety Protection*(a) Reports on developments in plant variety protection from members and observers*

6. The TWV noted the information on developments in plant variety protection from members and observers, provided in document TWV/54/3 Prov. The TWV noted that reports submitted to the Office of the Union after May 14, 2020, would be included in the finalized version of document TWV/54/3.

*(b) Reports on developments within UPOV*

7. The TWV received a presentation by the Office of the Union on latest developments within UPOV, a copy of which is provided in document TWV/54/2.

Molecular techniques

8. The TWV considered document TWP/4/7.

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

9. The TWV noted the papers presented at the eighteenth session of the BMT, held in 2019, as set out in document TWP/4/7, paragraph 12.

10. The TWV noted that the BMT would hold its nineteenth session in Alexandria, Virginia, United States of America, jointly with TWC, during the week of September 21, 2020.

11. The TWV noted the draft agenda for the BMT at its nineteenth session, to be held in 2020, as set out in document TWP/4/7, paragraph 14.

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

12. The TWV noted that the BMT, at its eighteenth session, had considered the proposal by the TWV to develop guidance in document UPOV/INF/17 on elements to be included in a protocol of a DNA marker assay for a specific characteristic.

13. The TWV noted the changes agreed by the BMT to document UPOV/INF/17, as reproduced in document TWP/4/7, Annex II.

14. The TWV noted that the TC had agreed to invite the European Union, France and the Netherlands to prepare a new draft of document UPOV/INF/17 for consideration of the BMT, at its nineteenth session.

*Cooperation between international organizations*

Inventory on the use of molecular marker techniques, by crop

15. The TWV noted that the TC, at its fifty-fifth session, had agreed the elements for an inventory on the use of molecular marker techniques, by crop, as set out in document TWP/4/7, paragraph 40.

16. The TWV noted that a circular would be issued to request members of the Union to complete a survey as a basis to develop an inventory on the use of molecular marker techniques, by crop, in coordination with the OECD.

Lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques

17. The TWV noted that that the TC, at its fifty-fifth session, had agreed:

- (a) for joint OECD, UPOV, ISTA workshops to be repeated in future, as a possible joint initiative in relation to molecular techniques;
- (b) to propose a joint initiative that each organization inform the others about use of molecular markers in their work; and
- (c) that information from the survey on the techniques could help to clarify techniques that were considered to be biochemical or molecular.

Joint document explaining the principal features of the systems of OECD, UPOV and ISTA

18. The TWV noted that that the TC, at its fifty-fifth session, had agreed that relevant elements from the World Seed Partnership and the FAQ on the use of molecular techniques in the examination of DUS, would be a suitable basis for the Office of the Union to develop a draft of a joint document explaining the principal features of the systems of OECD, UPOV and ISTA, in consultation with OECD.

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

19. The TWV noted that the TWPs and BMT, at their sessions in 2019, had formed discussion groups to allow participants to exchange information on their work on biochemical and molecular techniques and explore areas for cooperation.

20. The TWV noted the outcomes of discussions at the TWPs and BMT on facilitating cooperation in relation to the use of molecular techniques, as presented in document TWP/4/7, Annex IV.

*Presentation on the use of molecular techniques in DUS examination*

21. The TWV received a presentation on “Information on molecular markers in Test Guidelines explanations” from an expert from the Netherlands. A copy of the presentation is provided in documents TWV/54/7 and TWV/54/7 Add.

22. The TWV considered the proposal to determine essential criteria for describing molecular marker assays in Test Guidelines, as presented in documents TWV/54/7 and TWV/54/7 Add.. The TWV agreed to invite the experts from the European Union and France to work with the Netherlands to prepare a new draft proposal for consideration by the TWV, at its fifty-fifth session.

Development of TGP and information (INF) documents

23. The TWV considered document TWP/4/1.

*Matters for adoption by the Council in 2020*

24. The TWV noted the matters concerning documents TGP/5, TGP/7, TGP/14, TGP/15, UPOV/INF/12, UPOV/INF/16 and UPOV/INF/22 to be proposed for adoption by the Council at its fifty-fourth ordinary session, to be held in Geneva on October 30, 2020, subject to approval by the CAJ, at its seventy-seventh session, to be held in Geneva on October 28, 2020.

*Possible future revisions of TGP documents and information documents*

25. The TWV noted the matters concerning possible future revision of document TGP/8 and information document UPOV/INF/17, which would be considered under documents TWP/4/10, TWP/4/11 and TWP/4/7, respectively.

*New proposals for revisions of TGP documents and information documents*

TGP/7: Development of Test Guidelines

*Links to relevant TGP documents guidance in Test Guidelines*

26. The TWV noted the invitation to the TWPs to propose relevant guidance in TGP documents that could have links displayed in Test Guidelines.

*Procedure for partial revision of UPOV Test Guidelines*

27. The TWV noted discussions on the procedure for partial revisions of Test Guidelines.

Development of document UPOV/INF/23 “UPOV Code System”

28. The TWV noted that the CAJ, at its seventy-seventh session, to be held in Geneva on October 28, 2020, would consider draft document UPOV/INF/23 “UPOV Code System”.

*Program for the development of TGP documents and information documents*

29. The TWV noted the program for the development of TGP documents and information documents, as set out in document TWP/4/1 Annexes V and VI, respectively.

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

Data processing for the production of variety descriptions for measured quantitative characteristics

30. The TWV considered document TWP/4/10.

31. The TWV considered the different approaches to convert observations into notes for producing variety descriptions for measured quantitative characteristics, as presented in document TWP/4/10, Annexes III to VII, and information, if any, that could facilitate their application.

32. The TWV noted the comments provided by the European Union and Germany on the methods described in the Annexes of document TWP/4/10 and agreed to request the following additional information:

Annex III, French Method 2:

- Please describe what are the variables “a” and “B” in the regression model “ $Y = a + Bx$ ”;
- Please provide an explanation on the graphic “Example for the characteristic flowering time of sunflower” in particular whether each blue dot in the graphic is an example variety and how the blue dots are calculated (a value per variety but calculated over years?).
- Please clarify the scale of the graph. Note 10 should not be possible according to the characteristic

Annex IV, Japanese method:

- Please clarify whether the word “distance” used in the text means “width of class”

Annex VI, German method, slide 16:

- Please clarify whether the difference between the states of expression is always the same (6 cm);
- Please clarify whether example varieties are taken into account.

The Combined Over Years Uniformity Criterion (COYU)

33. The TWV considered document TWP/4/11.

34. The TWV noted the invitation by the TWC for members who use “R” or “DUST” Software to review the new COYU package to identify possible improvement points.

35. The TWV noted the expression of interest by experts from China, Finland, France and the United Kingdom to review the new COYU package.

36. The TWV noted the invitation for editorial suggestions to be communicated to the drafter from the United Kingdom on the proposed draft revision for document TGP/8, Section 9 “The Combined Over Years Uniformity Criterion (COYU)”.

37. The TWV noted the invitation for the expert from the United Kingdom to prepare a revised version of the draft guidance, to be presented to the TWC, at its thirty-eighth session.

Information and databases

(a) *UPOV information databases*

38. The TWV considered document TWP/4/4.

UPOV Code System

*UPOV code developments*

39. The TWV noted that 208 new UPOV codes had been created in 2019 and a total of 9,049 UPOV codes are included in the GENIE database.

*Exceptions to UPOV codes in the “Guide to the UPOV Code System”*

40. The TWV noted that the TC, at its fifty-fifth session, had agreed to postpone the amendment to the “Guide to the UPOV Code System” and to explore alternative solutions to enable UPOV Codes to provide useful information on variety groups or types for DUS testing purposes and to invite the Office of the Union to prepare a document with proposals, for consideration at its fifty-sixth session.

41. The TWV noted the developments concerning alternative solutions to enable UPOV Codes to provide useful information on variety groups or types for DUS testing purposes.

*New proposals for updating UPOV codes**UPOV codes for Beta vulgaris*

42. The TWV considered the proposal to amend the UPOV codes for *Beta vulgaris*, as set out in document TWP/4/4, Annex II.

43. The TWV recalled that, at its fifty-second session, it had agreed that the information on type of maize (popcorn, sweet corn) and red and white cabbage varieties was useful for grouping varieties and organizing growing trials and should remain in the database (see document TWV/52/20 “Report”, paragraph 94). The TWV agreed that the same approach should be used for UPOV codes of the different types of beet varieties.

*UPOV code amendments agreed by the TC at its fifty-fifth session*

44. The TWV noted that the TC, at its fifty-fifth session, had agreed to amend the UPOV codes for the genera and species set out in document TWP/4/4, Annex IV.

*TWP checking*

45. The TWV noted the invitation to check the amendments, new UPOV codes or information, and UPOV codes used in the PLUTO database for the first time, as reproduced in document TWP/4/4, Annex V, and submit comments to the Office of the Union by December 31, 2020.

*ISTA Nomenclature Committee*

46. The TWV noted that the “ISTA List of Stabilized Plant Names” with relevant UPOV codes had been published in January 2020.

PLUTO database*Program for improvements to the PLUTO database*

47. The TWV noted that the TC and the CAJ, at their sessions in 2019, had approved the revision of the “Program for improvements to the PLUTO database” to reflect the change of the acceptable character set to accept accents and special characters in denominations in the PLUTO database (ISO/IEC Standard 8859 1: 1998).

*Summary of contributions to the PLUTO database from 2016 to 2019*

48. The TWV noted the summary of data contributions from members of the Union to the PLUTO database from 2016 to 2019, as presented in document TWP/4/4, Annex VI.

*(b) Variety description databases*

49. The TWV considered document TWP/4/2.

50. The TWV noted the reports made at the BMT meeting on databases containing morphological and/or molecular data.

51. The TWV noted that members of the Union would be invited to report to the TWPs on work concerning the development of databases containing morphological and/or molecular data.

52. The TWV noted the report made by the expert of the Netherlands, that new databases with morphological information of melon and set of validated molecular markers (SNPs) for tomato varieties were being developed with partial funding provided by the Community Plant Variety Office of the European Union (CPVO).

53. The TWV agreed to invite the France and the Netherlands to make presentations on the development of the databases for melon and tomato, respectively, at its fifty-fifth session.

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

54. The TWV considered document TWP/4/5.

Document UPOV/INF/16 “Exchangeable Software”

55. The TWV noted that the Office of the Union had issued on April 14, 2020, Circular E-20/031 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.

56. The TWV noted the offer made by the expert from France, to make available for exchange the Pathostat software for data processing for disease characteristics, and to reflect that in document UPOV/INF/16.

57. The TWV recalled that once information on the Pathostat software was provided for inclusion in document UPOV/INF/16, it would be presented for review by the Technical Working Party on Automation and Computer Programs (TWC).

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

58. The TWV noted that the Council, at its fifty-third ordinary session, held in Geneva, on November 1, 2019, had adopted document UPOV/INF/22/6 “Software and equipment used by members of the Union”.

59. The TWV noted that the Office of the Union had issued on April 14, 2020, Circular E-20/031 inviting the designated persons of members of the Union in the TC to provide or update information in document UPOV/INF/22.

60. The TWV noted that the TC, at its fifty-sixth session, would be invited to consider whether to include any proposed software or equipment in document UPOV/INF/22 or whether to request further guidance from other relevant bodies.

Availability of documents UPOV/INF/16 “Exchangeable software” and UPOV/INF/22 “Software and equipment used by members of the Union” in a searchable form

61. The TWV noted that the information in documents UPOV/INF/16 and UPOV/INF/22 had been made available in a searchable format on the UPOV website.

*(d) UPOV PRISMA*

62. The TWV considered document TWP/4/3 and noted the developments concerning UPOV PRISMA.

63. The TWV noted the comment made by the representative of the International Seed Federation (ISF) on the importance of encouraging harmonization in the forms to be used amongst participating authorities in UPOV PRISMA, and that all required information should be completed once in the system, as much as possible.

Variety denominations

64. The TWV considered document TWP/4/6.

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

65. The TWV noted that the TC, at its fifty-fifth session, agreed to propose the revision of the list of classes in document UPOV/INF/12/5 to remove Industrial Chicory from denomination class 205, creating a new denomination class 205B, as follows:

Class 205	Cichorium, Lactuca	CICHO; LACTU
<u>[Class 205B]</u>	<u>Cichorium intybus L. var. sativum</u>	<u>CICHO_INT_SAT</u>

66. The TWV noted that Class 205B separated two subspecies in different denomination classes; Leaf Chicory (CICHO\_INT\_FOL) in Class 205; and Industrial Chicory (CICHO\_INT\_SAT) in new Class 205B.

The TWV agreed that approximately 1200 varieties with UPOV code C1CHO\_INT in the PLUTO database could not be allocated with certainty to either one of the Classes.

67. The TWV noted the concerns expressed by participants and agreed not to support the proposal to split denomination Class 205 at this stage. The TWV agreed that the proposal should be reconsidered at its fifty-fifth session.

#### *Revision of the ninth edition of the ICNCP*

68. The TWV noted that the Office of the Union would contribute to the revision of the ninth edition of the ICNCP on the basis of document UPOV/INF/12/5 and the work of the WG-DEN.

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

69. The TWV noted developments concerning a UPOV similarity search tool for variety denomination purposes, as set out in document TWP/4/6, paragraph 26.

#### *Expansion of the content of the PLUTO database*

70. The TWV noted that the CAJ, at its seventy-sixth session, had noted the plans for the introduction of a unique identifier for each record in the PLUTO database.

71. The TWV noted that the CAJ, at its seventy-sixth session, had agreed with the proposal to add common names in other languages to the PLUTO database.

#### *Working group on variety denominations*

72. The TWV noted that the CAJ, at its seventy-sixth session, had noted that there was no need for further meetings of the WG-DEN.

#### Experiences with new types and species

73. The TWV noted that no new experiences with new types and species had been reported.

#### New issues arising for DUS examination

74. The TWV received a presentation on “Vegetatively propagated varieties in a normally seed-propagated species: Pepper” by an expert from the Netherlands. A copy of the presentation is provided in document TWV/54/8.

75. The TWV agreed to invite the expert from the Netherlands to report further developments in relation to DUS examination of vegetatively propagated pepper varieties at its fifty-fifth session, in particular on the trend for breeding activities. It further invited the experts involved in the discussion of the Test Guidelines for pepper to consider this development .

#### Use of disease resistance characteristics

76. The TWV received a presentation on “Data processing for disease resistance characteristics: the Pathostat application” by an expert from France. A copy of the presentation is provided in document TWV/54/6 Rev..

77. The TWV received a presentation on “Disease resistance tests on *Solanum sisymbriifolium*, *S. torvum* and *S. aethiopicum*: tomato and eggplant rootstoks - Italian laboratory experience” by an expert from Italy. A copy of the presentation is provided in document TWV/54/6 Rev..

78. The TWV agreed to propose that the expert from France be invited to present the Pathostat software to the TWC, at its thirty-eighth session.

79. The TWV noted the offer from France to provide data for interested experts to test the software. The TWV noted the expression of interest of the experts from Germany, Italy and Netherlands to test the software

and agreed to invite the expert from France to report developments on testing at its next session, under the agenda item “Use of disease resistance characteristics”.

80. The TWV noted the offer from France for UPOV members to use the Pathostat software free of charge. It further invited the expert from France to consider whether to propose the inclusion of Pathostat in document UPOV/INF/16 “Exchangeable Software”, in response of Circular E-20/031, issued by the Office of the Union on April 14, 2020.

*Naming of intermediate state of expression in disease resistance characteristics*

81. The TWV considered the naming of the intermediate state of expression in disease resistance characteristics. The TWV noted that guidance in document TGP/12 “Guidance on certain physiological characteristics” provided an example of quantitative disease resistance characteristic with intermediate state of expression “moderately”.

82. The TWV noted that the term “intermediate” was commonly used among experts and agreed to propose amending the example for quantitative disease resistance characteristics with “1–3” scale in document TGP/12 to replace state of expression “moderately” by “intermediate”. The TWV agreed that, in general, this should be the term used in Test Guidelines for disease resistance characteristics.

83. The TWV welcomed the offer from France and the Netherlands to present, at its fifty-fifth session, the current practice of the expression of intermediate state in disease resistance characteristics. It further noted the request made by the representative from ISF to seek alignment in the terminology used for disease resistance and invited ISF to make a presentation at its fifty-fifth session, on the view of the breeding vegetable seed industry on the terminology used for disease resistance.

Matters to be resolved concerning Test Guidelines adopted by the Technical Committee: Brown Mustard

84. The TWV considered document TWV/54/4 and agreed the following:

Chars. 6, 7, 20	to add (*)
Char. 17	to delete from TQ 5

85. The TWV noted that the proposal of the TWV would be submitted to the TC-EDC for consideration at its meeting to be held on October 25 and 26, 2020, and the Test Guidelines confirmed for adoption by the TC at its fifty-sixth session to be held on October 25 and 26, 2020.

Discussions on draft Test Guidelines

*\*Chick-pea (Cicer arietinum L.) (Revision)*

86. The subgroup discussed document TG/143/5(proj.2), presented by Ms. Chrystelle Jouy (France), and agreed the following:

Table of Chars.	to add the following new characteristic after Char. 6: - to read “Leaf: type” - to have state (1) bipinnate with example varieties “Benito, Castor” and state (2) pinnate with example varieties “Benito, Castor” - to be indicated as QL and VG - to have and (*) and add to the TQ - to add illustration as validated during subgroup meeting
Chars. 1 to 4	to add (a)
Char. 1	to delete MS
Char. 2	- to be indicated as VG - to add (*) (TQ char.) - to add an illustration (see TG Lentil) as validated during subgroup meeting - to delete example variety “Olga”
Char. 4	to be indicated as VG
Char. 6	to be indicated as MS/VG



Char. 9	- to be indicated as MS/VG - to have notes 1, 2, 3
Char. 10	to be indicated as MS/VG
Char. 12	- to be indicated as MS/VG - to have notes 1, 2, 3
Char. 14	- state 7 to read "brownish green" - to check whether to be combined with Char. 15 (to add intensities to individual colors, where appropriate) to have the following states and example varieties 1 whitish Benito, Lechoso 2 yellow Castor 3 greyed brown Twist 4 brown Amethyst 5 reddish brown Olga 6 brownish green CDC Jade 7 black Elmo
Char. 15	- to read "Excluding varieties with Seed: color: black: Seed: intensity of color" - to have notes 1, 2, 3
Char. 19	- to read "Time of seed maturity" - to be indicated as MG
8.1	to delete underline
8.1 (a)	to read "Foliage and plant: observations should be made at the time of flowering"
8.1 (c)	to be deleted
Ad. 4	to be deleted
Ad. 6	to delete illustration for state 9
Ad. 7	to read "The time of flowering is reached when..."
Ad. 9	to replace with improved illustration as discussed during subgroup meeting
Ad. 14	to replace with improved illustration as discussed during subgroup meeting
Ad. 16	- first sentence to read "Measure two samples of 100 seeds per replicate." - to delete second sentence
Ad. 17	to replace current with new photographs as validated during subgroup meeting
Ad. 18	to replace current with new photographs as validated during subgroup meeting
Ad. 19	to read "Observations should be made..."
9.	to be completed
TQ 7.3	to be deleted

*Egg plant (Solanum melongena L.) (Revision)*

87. The subgroup discussed document TG/117/5(proj.1), presented by Ms. Cécile Collonier (European Union), and agreed the following:

4.2.6	to read "For the assessment of uniformity of self-pollinated varieties and hybrids, ..."
Char. 1	to be deleted (combined with Char. 2)
Char. 2	- state 1 to read "absent or very weak" - to check whether to add example varieties "Brigitte, Lydia" for state 1 - to add example variety for state 9
Char. 3	- state 5 to read "spreading" - to delete "Listada de Gandia" and check whether to add other example variety
Chars. 6, 7	to check whether to be combined
Char. 9	to add MS
Char. 11	to check whether to delete illustration
Char. 13	to check whether to be indicated as QL or to have 3 states
Char. 16	- to check whether to maintain or to delete - to check whether to add example variety for state 1
Chars. 18, 19	to delete "maximum" (cover by (e))
Char. 19	to be indicated as QN
Char. 21	- to check method of observation (add M if using image analysis software) - to check whether to reduce scale of notes (notes 1 to 5?)

Char. 22	- "pointed" to read "acute" - "indented" to read "obcordate" - to check whether to add example variety "Pietranera" for note 1 (as mentioned in Char. 23)
Char. 25	- to check whether to delete "at harvest maturity" - to check whether to be combined with Char. 26 - to check whether to be indicated as PQ - to check approaches for describing colors, color distribution and patterns (TGP/14)
Chars. 28-30	- to check approaches for describing colors, color distribution and patterns (TGP/14)
Char. 30	- to add illustrations - to add example variety "Bride" for state 3 - to add example variety for note 5
Char. 32	- to check whether "ribs" to be replaced with "grooves" or "creasing" - to add example varieties for states 5 and 9
Chars. 34, 35	to be combined
Chars. 37, 38	to be combined
Char. 39	to check whether to reword
Char. 40	- to check whether to be deleted - to check whether to reduce scale of notes
Char. 41	to add illustration
Char. 42	- to replace "ochre" with "brownish orange" - to be indicated as PQ - to check whether to be deleted
Char. 43	to move before Char. 13 "Inflorescence: number of flowers"
Char. 44	to check whether to be deleted
8.1	to delete underline
8.1 (b)	to read "... after the first inflorescence starts to flower and before the start of the harvest."
8.1 (e)	to check whether to add "excluding the fork"
8.1 (f)	to be deleted and add "when the seeds start to develop" to (e)
Ad. 3	- to replace photographs with drawings - to delete "These images serve only to illustrate the variation present in the crop and should not be used as an absolute reference." - For plants contained between two strings, (which can modify the natural growth habit) we look at the angle of the branches at the fork level.
Ad. 10	to review explanation
Ad. 11	to check whether to keep the illustration
Ad. 11	Which blisters have to be observed? Big and/or small ones?
Ad. 22	to check whether apex should be on top (to rotate illustrations by 180 degrees, for all fruit illustrations)
Ad. 28	to delete picture 3 and use it for Char. 34.
Ad. 32	to review states wording according to Char. 32
Ad. 34	to improve illustration
9.	- last reference "... DUS Test for Eggplant" (missing "t") - to review order
TQ 4.1	to be presented as for example in TG Turnip
TQ 4.2.1	to delete this proposal, and keep only "Seeds propagated varieties", with its components: (a), (b), ...
TQ 5	to check whether to add more characteristics

*Kale (B. oleracea L. var. costata DC.; B. oleracea L. var. medullosa Thell.; B. oleracea L. var. sabellica L.; B. oleracea L. var. viridis L.; B. oleracea L. var. palmifolia DC.) (Revision)*

88. The subgroup discussed document TG/90/7(proj.2), presented by Mr. Takayuki Nishikawa (Japan), and agreed the following:

1.2	to read "Guidance on the use of Test Guidelines for inter-variant hybrids..."
2.3	minimum quantity of plant material required for vegetatively propagated varieties to be to be indicated as 30 plants
4.2.4	to be deleted

4.2.5	second sentence to read "In the case of a sample size of 40 plants, 2 off-types are allowed."
Table of Chars.	- to add codes between brackets to all example varieties to indicate to which group of varieties they belong (like in TG Cabbage). - to add a new characteristic "Flower: color"
Char. 1	- to check whether "Fizz" is tall or medium - to check whether "Esthe" is tall - to check whether "Cottagers" is tall
Char. 3	- to delete state "pyramid" - to add an example variety for state "column"
Char. 4	to have notes 1, 3, 5
Char. 5	to add illustrations
Char. 6	to check example varieties ("Cottagers" has a medium height, but a long stem?)
Char. 7	to read "Young leaf: color" (l instead of L).
Char. 9	- to check whether to add new state "purple", note 8, example variety "Rednex" - to check states and example varieties ("Westlandse Winter" is medium to dark greyish green, not note 2; to delete "yellow green" and to add "Tintoreto" as example for "light green") - state 3 to read "medium green"
Char. 10	to check whether "distribution" is the correct wording or whether to indicate the parts on which anthocyanin coloration appears (base, apex?)
Char. 12	- state 1 to read "absent or very weak" - "Redbor" is year-round red; is the characteristic anthocyanin coloration in winter of use for reddish varieties?
Char. 13	to be moved after Char. 22
Char. 14	- to check whether "Westlandse Herfst" is note 3 or 4, not 6. - to check whether "Beria" to read "Beira" (throughout the TG) - to check whether "Tronchusa Marriot" to read "Marriot" (throughout the TG)
Char. 17	- to check whether to add "Nero di Toscana" an example for very strongly recurved - to check whether to delete Arsis as example variety (terminated in PLUTO since 2013)
Char. 20	- to check whether to be moved after Char. 13 or before Char. 23 - to check whether to add "Midnight sun" an example variety of state 7 - to check whether to read " <u>Only varieties with leaf: number of lobes: absent or very few or few: Leaf blade: undulation of margin</u> " - to check whether to add explanation
Char. 23	- to check whether to read "Lobe: undulation of margin" with note 1 "absent or very weak" - to check whether to be combined with Char. 20 or to check whether to read " <u>Only varieties with leaf: number of lobes: medium or many: Leaf blade: undulation of margin</u> " - to provide an explanation
Char. 24	- to check whether to read to read "Only varieties with leaf: number of lobes: medium or many: Leaf blade: depth of incision of margin" - to check whether to delete "Esthe" (has no lobes) - to provide an explanation
Chars. 25, 26	to check whether to move after Char. 13 (between chars. on leaf and on leaf blade)
Char. 26	to check whether to add "Dauro" as example variety for note 5.
Char. 28	to delete "Redbor" from state 9
Ad. 1	to correct spelling mistake in the picture
Ad. 12	to read "...for varieties in which anthocyanin coloration"
Ad. 12	- to read "below" instead of "under" - to delete second sentence (exclusion not possible in an Ad. or to review the wording of the characteristic or include a characteristic to exclude some varieties )
Ad. 17	to check whether to add illustration for state 6
Ad. 18	to check whether to add better photo for state "absent or very weak"
TQ 5	- to add Chars. 23 and 24 (it helps with the sabellica group between curly kale type (like "Westlandse" and "Redbor" and Fizz type) - to add Char. 28, but without (*)

*Pepper (Capsicum annuum L.) (Revision)*

89. The subgroup discussed document TG/76/9(proj.2), presented by Ms. Marian van Leeuwen (Netherlands), and agreed the following:

3.4.3	- to delete second paragraph - to check the number of additional plants to be supplied for disease resistance tests and to check whether to add information to Chapter 2.3 "Material required"
4.1.4	to have only one paragraph to read "Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants and any other observation made on all plants in the test, disregarding any off-type plants."
4.2	Why have some assessments been modified? For example, the assessment of uniformity for hybrid varieties.
4.2.3	to check whether further wording is needed
4.2.4	to be deleted
Table of Chars.	- to check whether to add previous characteristic "Seedling: anthocyanin coloration of hypocotyl" and whether to be indicated as QN or QL - to check whether to create groups for ornamental/vegetable and rootstock varieties - to check whether to add new characteristic after characteristic 6 to read "Stem: shape" with states (1) spherical and (2) angular; to be indicated as VG and PQ, and whether this is <i>C. annuum</i>
Char. 3	illustration to be improved
Char. 5	to delete repeated ":" in the title of the characteristic
Char. 13	state 1 to read "absent"
Char. 21	- to check whether to add example varieties - to be indicated as PQ - to check whether to add states "greenish white" and "yellowish white"
Char. 23	to check whether to delete "Only for ornamental varieties" and add example varieties for vegetable varieties
Char. 24	to check whether to be deleted
Char. 25	to check states of expression and whether to include other colors
Char. 26	- to add note 1 - to check whether to add "yellowish green" to varieties to be observed
Char. 27	to be indicated as QN
Char. 31	to add to TQ 5
Char. 32	to whether to add "horn-shaped" (as in previous version)
Char. 34	state 1 to read "absent or weak"
Char. 45	to add VG
Char. 49	to add illustration on how to measure
Char. 51	to be indicated as QN and have states (1) non enveloping, (2) non enveloping to enveloping, (3) enveloping
Char. 65	- to correct spelling " <i>Meloidogyne incognita</i> " (delete i) - to have states (1) absent, (9) present
Char. 65	to correct spelling " <i>Meloidogyne incognita</i> " (delete i) to check the following items: - If Yolo Wonder is considered less susceptible than Tom4, we would like to see where both entries rank on the notation scale - Will the difference in classes between Yolo Wonder and Capital be enough to allow clear statistical differences? Knowing the response of Yolo Wonder we would say this is possible, however it depends where the level of Yolo Wonder is positioned in the notation scale - We would advise also to describe the classes in text, as the current pictures seem not so clear -When/why it was decided to use Capital as resistant check compared to Yolo Wonder
8.1 (a)	to read "Observations on plant, stem and leaves should be made"
8.1 (d)	to add at the end of the sentence (see chapter 3.4.3)
Ad. 1	to delete "on"
Ad. 3	to be improved

Ad.15	to read "Observations should be made on fresh leaves."
Ad. 20	to adjust wording of states according to Char. 20
Ads. 22, 23	to check whether to be kept or to be replaced by a drawing on where to be observed
Ad. 24	to consider adding picture of partially sterile, if one is available.
Ad. 27	- to delete illustration for anthocyanin coloration and to change states according to the characteristic - to check whether to add that observations should not be made for purple varieties
Ad. 29	to add indication on how to observe length
Ad. 30	to read "Observations should be made at the widest part of the fruit"
Ad. 31	to check whether to improve illustration
Ad. 33	to update the wording of the levels of expression / Char. 33
Ad. 47	- to improve wording of the explanation - to confirm whether marker test is an alternative method but the first choice for observing this character should be by testing. If not to adjust method of observation accordingly (MS/VG?) - to move reference to literature in chapter 9
Ad. 48	to add illustration for state "present"
Ad. 52	to read "Time of Maturity should be observed at the time of the first color change of the fruit."
Ad. 56, 5.	- Isolate For PVY: 0 strain zb6 - PVY race 1 / PVY race 2: It's correct PVY race 1.2. The term pathotype should be used instead of the term race.
Ad. 59, 4.	to replace INRA by INRAE (new name since Jan 1, 2020)
Ad. 59, 5.	to check whether to use another strain to illustrate a moderately aggressive strain: Pc227, which is the strain used by INRAE- GAFL instead of the strain 101 (aggressiveness sometimes difficult to maintain)
Ad. 59, 13.	to check maintenance of viability of the strains in collection
Ad. 60, 4.	to replace INRA by INRAE (new name since Jan1, 2020)
Ad. 61, 2.	to change quarantine status to "No"
Ad. 65	to be added
9.	Literature to be provided
TQ 4	to be completed (see for example TG Turnip)
TQ 5	to check whether to add Char. 31 "Fruit: ratio length / diameter" (grouping char.)
TQ 6	to include an example
TQ 7	IE Comments Additional information: add text on photograph. We object!

### Squash (Partial revision)

90. The subgroup received a presentation by Ms. Chrystelle Jouy (France) on the proposed new characteristics "Resistance to *Zucchini yellow mosaic virus* (ZYMV)" and "Resistance to *Watermelon mosaic virus* (WMV)". A copy of the presentation is provided in document TWV/54/5 Add..

91. The subgroup discussed documents TG/119/4 Corr. 2 and TWV/54/5, presented by Ms. Chrystelle Jouy (France), and agreed the following:

General	- to correct spelling of "moderately" (throughout the document) - to check whether to replace "moderately resistant" with "intermediate resistant" (throughout the document) - to remove repeated "Characteristic" in paragraph 3 (c)															
Chars. 82, 83	- to add (+) - to add type of expression (QN) and method of observation (VS) (to be presented as in TG/90/6 Corr. Rev. with footnote to refer to TGP/7)															
Char. 82	to check whether to add additional example varieties															
Char. 83	to have the following states and example varieties and check whether to add more:															
	<table> <tr> <td>susceptible</td> <td>Cora</td> <td>1</td> </tr> <tr> <td>susceptible to moderately resistant</td> <td></td> <td>2</td> </tr> <tr> <td>moderately resistant</td> <td>Sofia</td> <td>3</td> </tr> <tr> <td>moderately resistant to resistant</td> <td>Mikonos, Syros</td> <td>4</td> </tr> <tr> <td>resistant</td> <td></td> <td>5</td> </tr> </table>	susceptible	Cora	1	susceptible to moderately resistant		2	moderately resistant	Sofia	3	moderately resistant to resistant	Mikonos, Syros	4	resistant		5
susceptible	Cora	1														
susceptible to moderately resistant		2														
moderately resistant	Sofia	3														
moderately resistant to resistant	Mikonos, Syros	4														
resistant		5														
Ad. 82, 11.3	to delete second paragraph															

Ad. 82, 12.	to be reviewed and to check conversion of notes into classes
Ad. 83, 9.3	third paragraph to read “moderately resistant to resistant: Mikonos or Syros (moderately resistant to resistant controls of higher level)”
Ad. 83, 11.3	to delete second paragraph
Ad. 83, 12.	to be reviewed and to check conversion of notes into classes
Ad. 83	illustration: to check whether to replace “patches” with “spots”

*\*Turnip (Brassica rapa L. var. rapa L.) (Revision)*

92. The subgroup discussed document TG/37/11(proj.6), presented by Mr. Dominique Rousseau (France), and agreed the following:

Char. 1	growth stage to be indicated as 00-60
Char. 3	state 5 to read “prostrate”
Char. 7	- to add illustration - to underline “Only varieties with...”
Char. 8	to check whether to add illustration
Char. 9	to check whether to add illustration
Char. 12	to read “Leaf: length of terminal lobe” (delete “Only varieties with...”)
Char. 13	to read “Leaf: width of terminal lobe” (delete “Only varieties with...”)
Char. 15	to check whether to introduce groups for varieties with and without swollen roots (including indication of groups for example varieties)
Char. 17	to add example varieties (“Golden Ball” for state 2, “Hector” for state 3 and additional varieties available)
Char. 29	to delete “Root:” before “time”
Char. 31	to delete “Plant:”
8.1 (b)	to adapt names of characteristics according to changes made to characteristics
Ad. 1	to add “Observations should be made on 20 plants.”
Ad. 3	state 5 to read “prostrate”
Ad. 15	to read “To define the degree of swelling, the weight ratio (weight of leaves / weight of root) can be used. Weight ratio <2: strong swelling 2 ≤ Weight ratio ≤ 10: medium swelling Weight ratio >10: absent or weak swelling”
Ad. 24	- to delete text and keep illustration only

International cooperation in examination

93. The TWV considered document TWP/4/9.

*Identification of contact persons for international cooperation in DUS examination*

94. The TWV noted the list of persons to be contacted for matters concerning international cooperation in DUS examination, provided in document TWP/4/9, Annex I, and on the UPOV website.

95. The TWV noted that UPOV members would be invited to update information on a person(s) to be contacted for matters concerning international cooperation in DUS examination every year when invited to provide information for document TC/[xx]/4 “List of genera and species for which authorities have practical experience in the examination of distinctness, uniformity and stability”.

*Proposals to overcome technical concerns in relation to cooperation*

96. The TWV noted that the TC, at its fifty-fifth session, had considered the outcomes of discussions held at the TWPs and the proposals to address the concerns raised, as set out in document TWP/4/9, Annex II.

97. The TWV noted the synthesis of concerns and proposals by the TWPs, as set out in document TWP/4/9, paragraph 19.

98. The TWV noted that the Office of the Union would prepare a coherent plan for consideration by the TC, at its fifty-sixth session, to address the concerns raised by the TWPs based on the following proposals:

- GENIE Database: practical experience and cooperation in examination;
- Publication of contact persons for DUS cooperation on UPOV website (see paragraphs 6 to 11)
- PLUTO Database: create search function to find DUS test reports
- Multilingual online tool for requesting DUS test reports
- TWP sessions: invite presentations on DUS testing procedures
- Amend document TGP/5 Section 6 to report the varieties considered in the examination (not only similar varieties);
- Amend document TGP/5 Section 6 to provide data from field observations along with DUS test report for each variety
- Translate the Model Agreement for Cooperation in Testing Varieties into other relevant languages (doc. TGP/5 Sec.1)
- Develop common database with morphological and molecular information for selected crops/species
- Publishing quality assurance procedures for variety testing
- Survey and review of UPOV members use of UPOV Test Guidelines

99. The TWV noted that the TC had agreed that TWP sessions should be used to develop cooperation among members to a greater extent.

#### Organization of work of the TWC and BMT

100. The TWV considered document TWP/4/12.

101. The TWV noted the draft terms of reference for a possible single body to encompass the work of the TWC and BMT.

#### Revision of Test Guidelines

102. The TWV considered document TWP/4/13.

#### *Technical Questionnaires*

103. The TWV noted that UPOV members at the TWPs would be invited to complete the table with information on the use of the Technical Questionnaire from UPOV Test Guidelines, as provided on the website, to be returned to the Office of the Union by August 1, 2020.

104. The TWV noted the expression of support from representatives of Crop Life International, Euroseeds and ISF for measures to improve harmonization within UPOV members and welcomed the survey on the use of Technical Questionnaires from UPOV Test Guidelines. The TWV further noted the importance of harmonizing individual Authorities' Technical Questionnaires for increasing the efficiency of UPOV PRISMA for breeders and for participating members of the Union.

#### *Additional characteristics and states of expression in individual authorities' Test Guidelines*

105. The TWV noted the invitation for UPOV members to notify additional characteristics and states of expression to the Office of the Union using the tables provided in document TGP/5 Section 10.

Recommendations on draft Test Guidelines

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

106. The TWV agreed that the following draft Test Guidelines should be submitted to the TC for adoption at its fifty-sixth session, to be held in Geneva on October 26 and 27, 2020 on the basis of the following documents and the comments in this report:

<u>Subject</u>	<u>Basic Document(s) (2020)</u>
Brown Mustard ( <i>Brassica juncea</i> (L.) Czern.)	TG/BRASS_JUN(proj.7) and TWV/54/4
*Chick-pea ( <i>Cicer arietinum</i> L.) (Revision)	TG/143/4(proj.2)

(b) *Test Guidelines to be discussed at the fifty-fifth session*

107. The TWV agreed to discuss the following draft Test Guidelines at its fifty-fifth session:

<u>Subject</u>	<u>Basic Document(s) (2020)</u>
Chinese cabbage ( <i>Brassica rapa</i> subsp. <i>pekinensis</i> (Lour.) Hanelt) (Revision)	TG/105/4
Egg plant ( <i>Solanum melongena</i> L.) (Revision)	TG/117/5(proj.1)
*Garden Rocket ( <i>Eruca sativa</i> Mill.) (Partial revision: addition of a characteristic concerning anthocyanin coloration of leaf blade)	TG/245/1
*Garlic ( <i>Allium sativum</i> L.) (Partial revision: addition of plant material: seed and uniformity requirements)	TG/162/4
Kale ( <i>B. oleracea</i> L. var. <i>costata</i> DC.; <i>B. oleracea</i> L. var. <i>medullosa</i> Thell.; <i>B. oleracea</i> L. var. <i>sabellica</i> L.; <i>B. oleracea</i> L. var. <i>viridis</i> L.; <i>B. oleracea</i> L. var. <i>palmifolia</i> DC.) (Revision)	TG/90/7(proj.2)
*Lettuce ( <i>Lactuca sativa</i> L.) (Partial revision: Char. and Ad. 53 "Resistance to LMV"; addition of DNA marker test)	TG/13/11 Rev.
*Melon ( <i>Cucumis melo</i> L.) (Partial revision: Char. 69 "Resistance to Fom", Char. 70 "Resistance to Px")	TG/104/5 Rev. 2
*Pea ( <i>Pisum sativum</i> L.) (Partial revision: Char. 58 "Resistance to Fop", Char. 59 "Resistance to <i>E. pisi</i> ", Char. 60 "Resistance to <i>A. pisi</i> ")	TG/7/10 Rev. 2
Pepper ( <i>Capsicum annuum</i> L.) (Revision)	TG/76/9(proj.2)
*Squash (Partial revision: to add new Characteristics "Resistance to ZYMV" and "Resistance to Watermelon mosaic virus")	TG/119/4 Corr. 2, TWV/53/6
Tomato ( <i>Solanum lycopersicum</i> L.) (Revision)	TG/44/11 Rev. 2
*Tomato rootstock (Partial revision: coverage: to remove <i>S. cheesmaniae</i> , Chars. and Ads. 22 "Resistance to Mi", 23 "Resistance to Va and Vd", 24 "Resistance to Fol", 26 "Resistance to Ff")	TG/294/1 Corr. Rev. 2
*Turnip ( <i>Brassica rapa</i> L. var. <i>rapa</i> L.) (Revision)	TG/37/11(proj.6)
*Wild Rocket ( <i>Diplotaxis tenuifolia</i> (L.) DC.) (Partial revision: partial revision: addition of a characteristic concerning anthocyanin coloration of leaf blade)	TG/244/1

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



(c) *Draft Test Guidelines for possible future discussion*

109. The TWV agreed on the following draft Test Guidelines for discussion at a future session:

<u>Subject</u>	<u>Basic Document(s) (2019)</u>
Water spinach ( <i>Ipomoea aquatica</i> )	NEW

Guidance for drafters of Test Guidelines

110. The TWV considered document TWP/4/8.

111. The TWV noted developments on the web-based TG template, reported in document TWP/4/8, paragraphs 15 to 23.

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

113. The TWV noted that training on the web-based TG template via electronic means could be organized upon experts' request.

Chairperson

114. The TWV thanked Ms. Romana Bravi for her chairpersonship and noted that she was awarded a UPOV bronze medal in recognition of her chairpersonship of the TWV from 2018 to 2020.

Date and place of the next session

115. At the invitation of Turkey, the TWV agreed to hold its fifty-fifth session in Antalya, Turkey, from May 3 to 7, 2021.

Future program

116. The TWV agreed to add an agenda item for its fifty-fifth session on a proposal to indicate grouping characteristics in the Table of characteristics and TQ5 of UPOV Test Guidelines and invited the experts from the European Union and France to make a presentation in support of the proposal.

117. The TWV 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
  - (b) Reports on developments within UPOV (oral report by the Office of the Union)
4. Molecular Techniques
  - (a) Developments in UPOV (document to be prepared by the Office of the Union)
  - (b) Presentation on the use of molecular techniques in DUS examination (presentations invited from members of the Union)
5. TGP documents
6. Variety denominations (document to be prepared by the Office of the Union)
7. Information and databases
  - (a) UPOV information databases (document to be prepared by the Office of the Union)
  - (b) Variety description databases (document to be prepared by the Office of the Union and presentations invited from France and the Netherlands)

- (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. New issues arising for DUS examination (presentations invited from members of the Union)
- 10. Use of disease resistance characteristics (presentations invited from France, the Netherlands and ISF and other members of the Union and observers)
- 11. Indication of grouping characteristics on the UPOV Test Guidelines (Table of characteristics and TQ5) (presentation by France and the European Union)
- 12. Matters to be resolved concerning Test Guidelines put forward for adoption by the Technical Committee (if appropriate)
- 13. Discussions on draft Test Guidelines (Subgroups)
- 14. Recommendations on draft Test Guidelines
- 15. Guidance for drafters of Test Guidelines
- 16. Date and place of the next session
- 17. Future program
- 18. Report on the session (if time permits)
- 19. Closing of the session

*118. The TWV adopted this report at the close of its session.*

[Annex I follows]

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David CHALKLEY (Mr.), PVP Examiner, Plant Variety Protection Office, Washington D.C.  
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### III. ORGANIZATIONS

#### CROPLIFE INTERNATIONAL

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#### INTERNATIONAL SEED FEDERATION (ISF)

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IV. OFFICE OF UPOV

Peter BUTTON (Mr.), Vice Secretary-General

Ben RIVOIRE (Mr.), Head of Seed Sector Cooperation and Regional Development (Africa, Arab Countries)

Leontino TAVEIRA (Mr.), Head of Technical Affairs and Regional Development (Latin America, Caribbean)

Romy OERTEL (Ms.), Secretary II

Jessica MAY (Ms.), Secretary I

Wen WEN (Ms.), Fellow

[Annex II follows]





**Plant Variety Protection in Brazil**

Technical Working Party for Vegetables (TWV)  
Brasília, Brasil, 11-15th May 2020

MINISTÉRIO DA  
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E ABASTECIMENTO**

Ricardo Zanatta Machado  
Coordinator of PVP Office

## Brazil in UPOV

- Became an UPOV member on May 23rd, 1999
- Bound by 1978 Act
- Law 9.456/97, April 25th, 1997
- TWA – 2004 – Rio de Jan.
- TWF – 2006 - Salvador
- TWO – 2006 - Fortaleza
- BMT – 2011 - Brasília
- TWC – 2015 - Natal
- TWV – 2020 – Brasília (?)



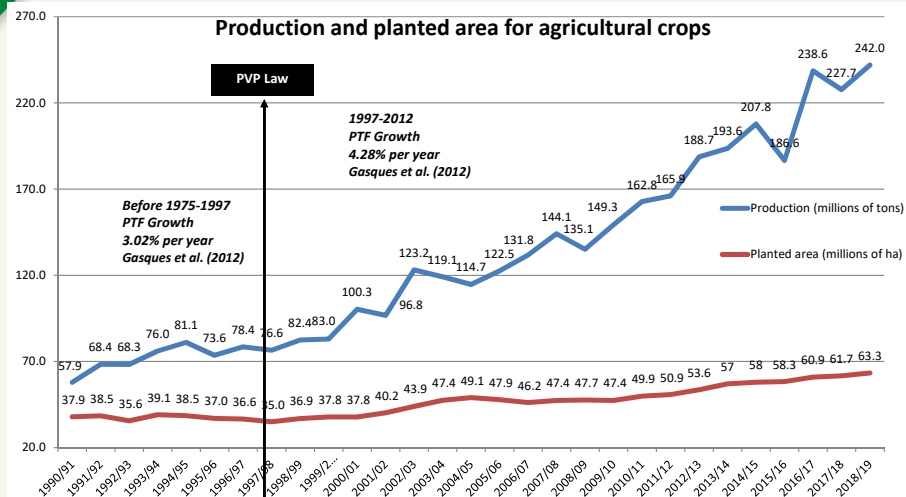
## Why Brasília?

- 2020 celebrate 60th anniversary of Brasília (April 21st)
- World heritage site by UNESCO
- Unique architecture (Oscar Niemeyer) and urban planning (Lucio Costa)
- PVP Office
- Technical visits

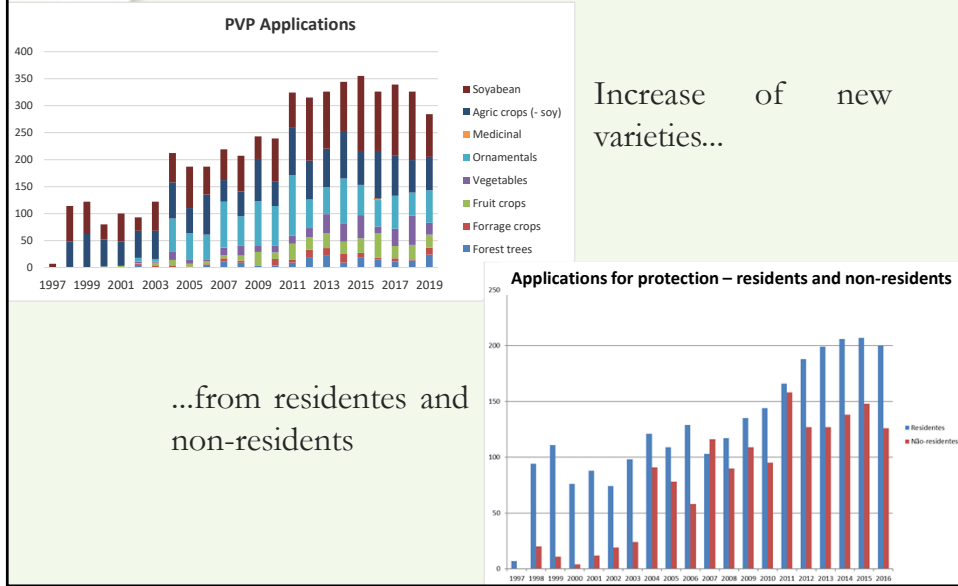


## Consequences

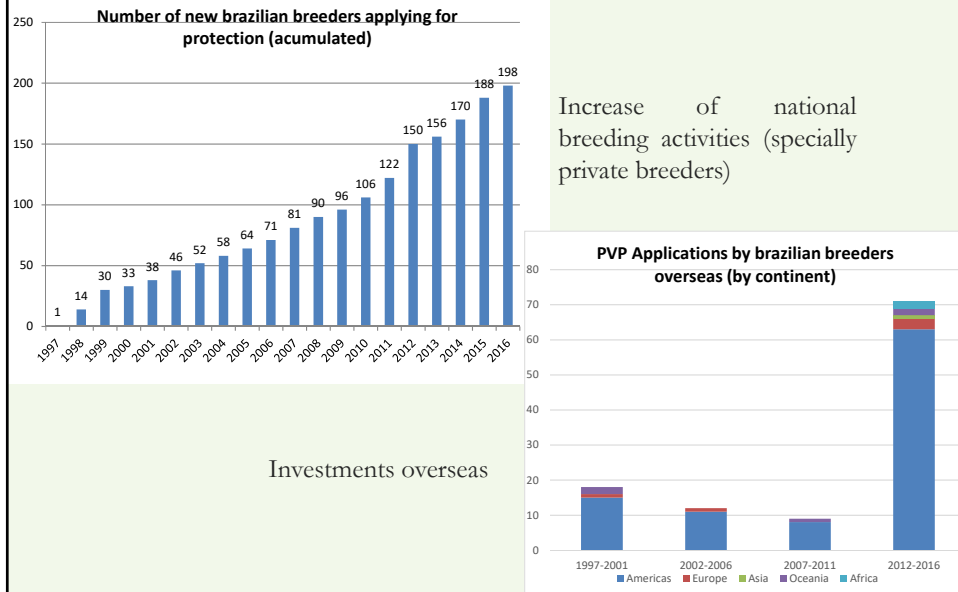
Yield increasing



## Consequences



## Consequences



## PVP Law

- 1978 Act
- Limited number of species protected (more than 200 genera/species)
  - Vegetables: 21 genera/species (Cucurbita, lettuce, garlic, sweet potato, egg plant, onion, carrot, coriander, pea, endive, chickpea, lentil, watermelon, melon, capsicum, lagenaria, okra, rocket, cabbage, tomato and french bean)
- Breeding testing system + cooperation in examination
- Propagative material only
- Farmers' privilege
- Duration: 15/18 years
- EDV (1991 Act)



## Cooperation in examination

- Purchase of existing DUS reports (CPVO: mainly ornamentals and fruit crops; NL: vegetables; JP; CA; ZA; AU; IL; ...)
- DUS tests being carried out on our behalf (NL: vegetables; NIAB: ornamentals; DE: roses and hop)

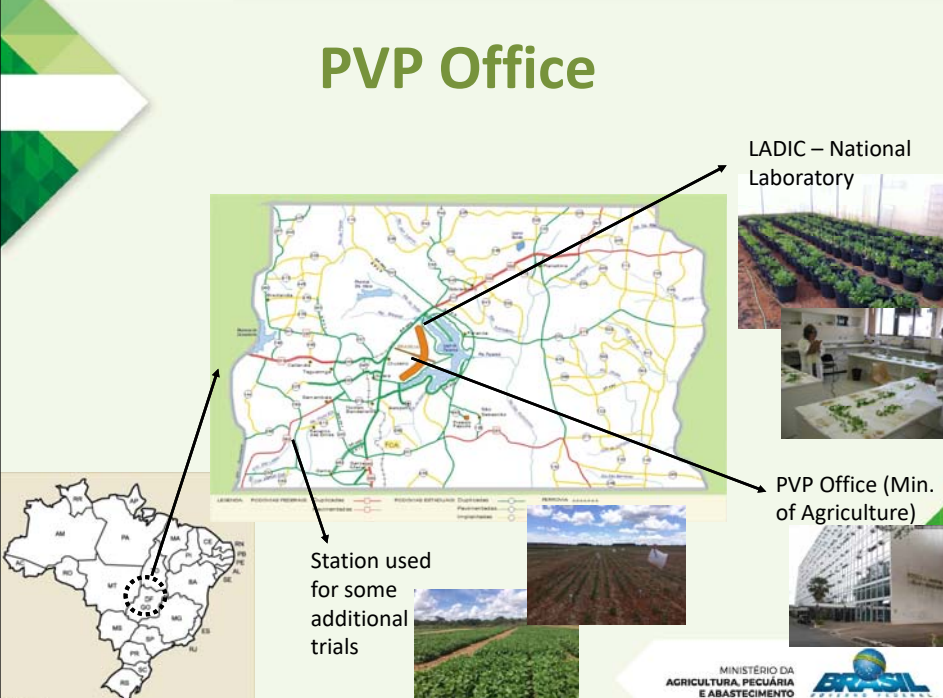
Table 12: The 10 countries that have bought the most DUS technical reports from the CPVO (1998-2018)

Country	Number of reports bought
Brazil	708
Colombia	655
Israel	584
Ecuador	563
Switzerland	445
Canada	419
Kenya	412
France	306
Turkey	285
Norway	262



CPVO Annual Report 2018




## PVP Office






**LADIC – National Laboratory**



**PVP Office (Min. of Agriculture)**



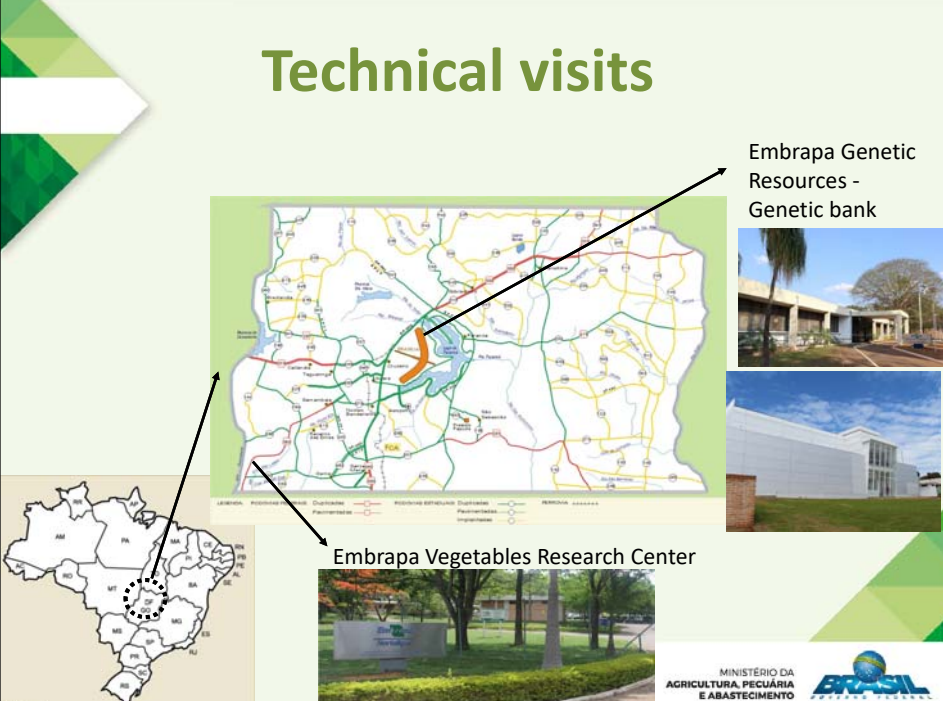
**Station used for some additional trials**





MINISTÉRIO DA AGRICULTURA, PECUÁRIA E ABASTECIMENTO

EMBRAPA



## Technical visits



**Embrapa Genetic Resources - Genetic bank**



**Embrapa Vegetables Research Center**



MINISTÉRIO DA AGRICULTURA, PECUÁRIA E ABASTECIMENTO

EMBRAPA

## Technical visit

- **Embrapa Hortaliças (Embrapa Vegetables)**
- 1204 hectares; 22K m<sup>2</sup> of laboratories, seed processing units, greenhouses, administrative areas
- 232 employees, 45 researchers
- Research on several areas including genetic breeding, organic production; transfer technology; etc



## Technical visit

- **Embrapa Genetic Resources**
- Support the breeding programs; Conservation and Exchange of genetic resources; Quarantine
- **Genetic Bank**
- April 2014;
- Size of 2000 m<sup>2</sup>
- Capable of preserving almost 1 million samples: 750K seed samples; 10K *in vitro* samples; 200K plant, animal and microorganisms in criopreservation (-180°C)



## Electronic Application System

- Implementation: End of 2018 (oct-nov)
- Goals: facilitate to the breeders; Better efficiency; Optimize resources (staff reduction); reduce period of time between application-granting
- Easier to: apply for protection; pay and controle the fees; Exchange of correspondences; send other communications
- 2018: 270 titles granted
- 2019: 328 titles granted (+21%)
- Staff: reduction of 40% 2018 to 2019



## Electronic Application System

### CultivarWeb

Ministério da Agricultura, Pecuária e Abastecimento

Rua Sete de Setembro, Av. 1000  
Bairro: Brasília, DF

[Página Inicial](#) [Registro de Cultivares](#) [Proteção de Cultivares](#) [Alterar senha](#) [Ajuda](#) [Sair](#)

#### Requerimentos de Proteção de Cultivares

Monitore o protocolo dos pedidos enviados. Em caso de dúvida, contate o Serviço Nacional de Proteção de Cultivares pelo e-mail [snpc@brasil.gov.br](mailto:snpc@brasil.gov.br)

Digite o termo que deseja pesquisar ou clique no título da coluna para ordenamento de conteúdo

[Pesquisar...](#)

Cultivar	Especie	Requerente	Protocolo	Data do Protocolo	Situação	Desde	Prazo
					não ENVIADO		
DISF teste	Agave Spp.	STEFÂNIA PALMA ARAUJO	21806.000051/2019	16/04/2019	ANÁLISE	16/04/2019	15/06/2019
		Leve title			não ENVIADO		
		Leve title			não ENVIADO		
Linnaea teste	Abelmoschus esculentus (L.) Moench	STEFÂNIA PALMA ARAUJO	21806.000053/2019	16/04/2019	DILIGÊNCIA		
Sandw001					não ENVIADO		
temana TESTE	Acacia senaria (Berg.) Rurnet	STEFÂNIA PALMA ARAUJO	21806.000150/2019	03/07/2019	DILIGÊNCIA	19/02/2019	20/04/2019
TESTE TESTE	Abelmoschus esculentus (L.) Moench	STEFÂNIA PALMA ARAUJO	21806.000052/2019	16/04/2019	ANÁLISE	16/04/2019	15/06/2019
TESTE	Abelmoschus esculentus (L.) Moench	Leve title			não ENVIADO		

## Fees

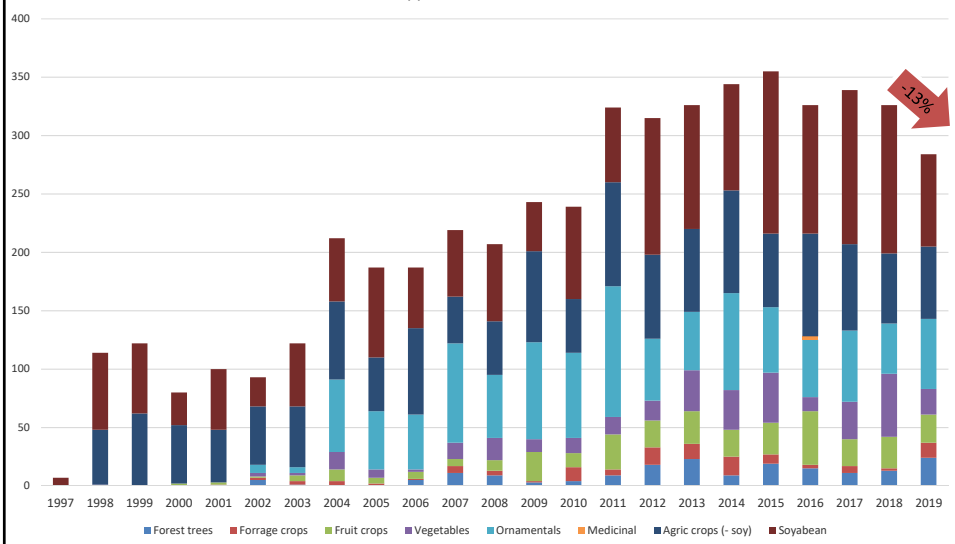
- From 01/01/2020, the values below:

	Reais (R\$)	USD
Application	713.16	128.00
Certificate issue	2139,47	383.00
Annuity	1141.05-1426.31	204.00-255.00
Transfer of rights	2139,47	383.00



## Statistics

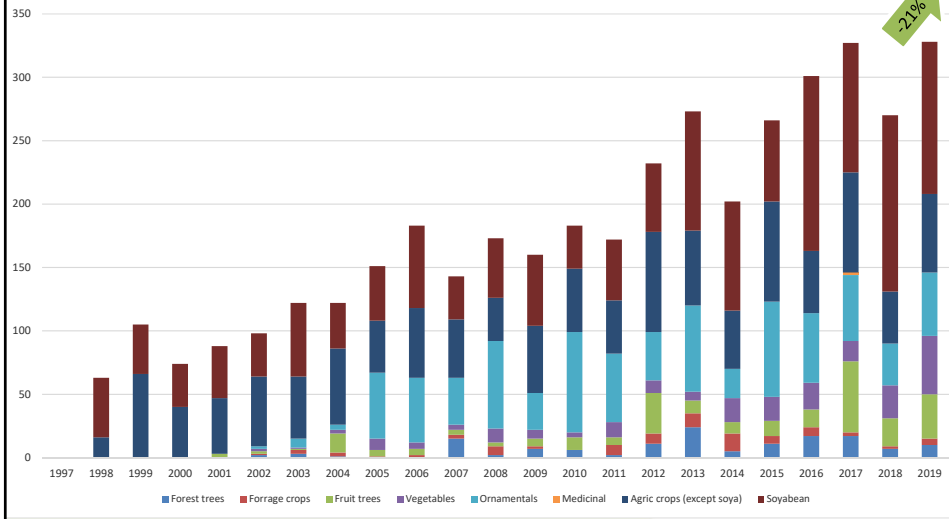
PVP Applications - 1997 to 2019





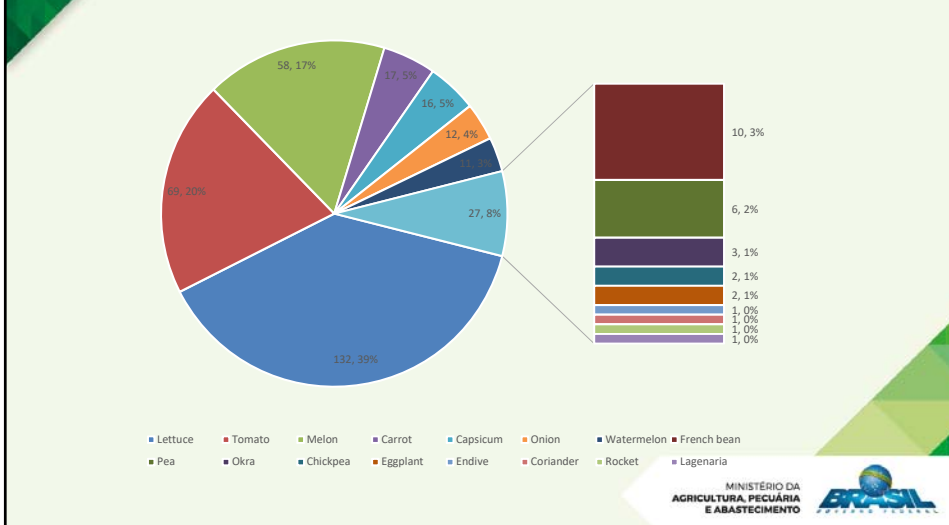
## Statistics

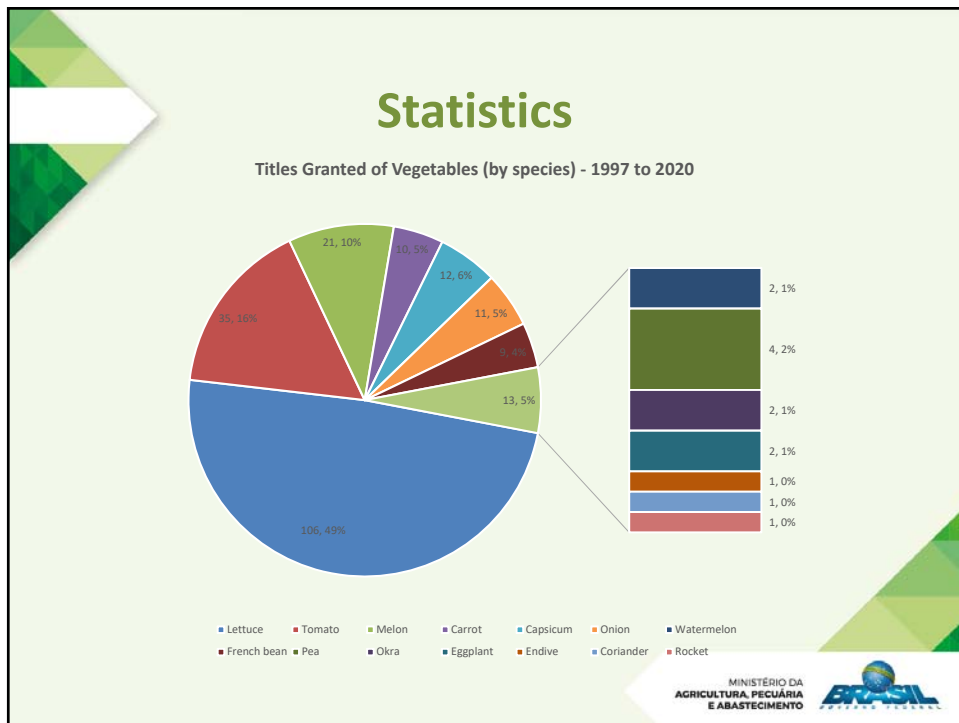
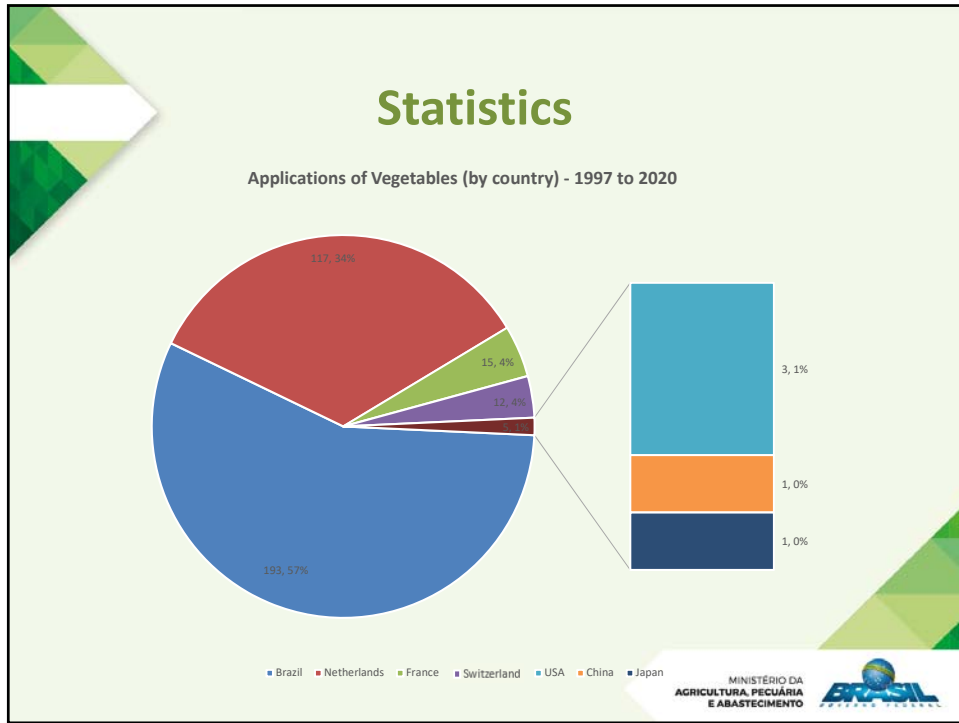
Titles granted - 1997 to 2019

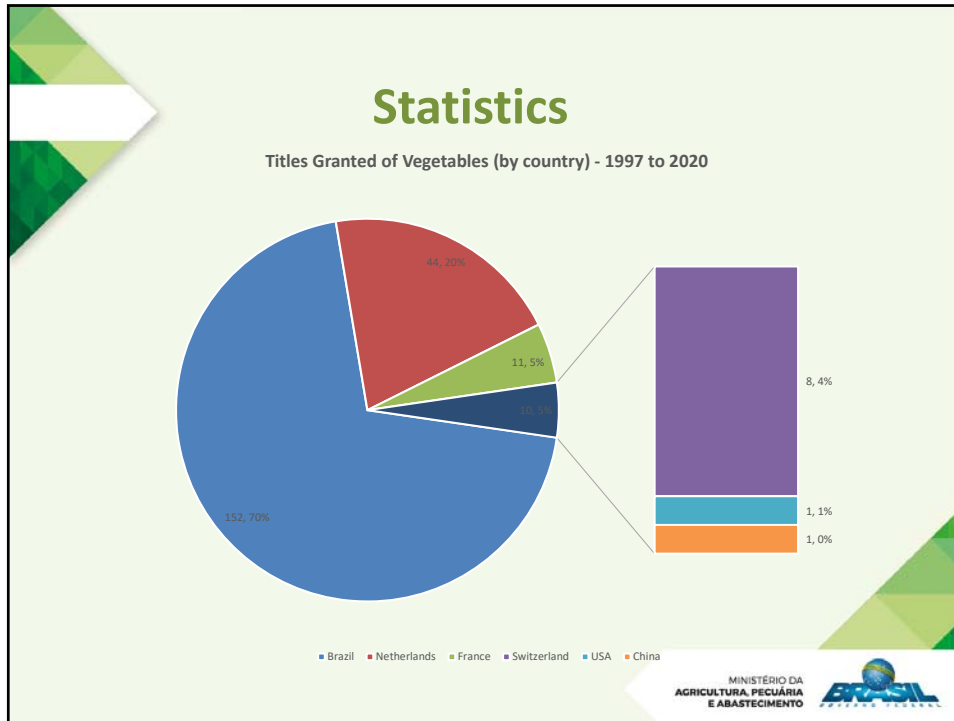


## Statistics

Applications of Vegetables (by species) - 1997 to 2020







## Top 10: UPOV members by number of applications

Rank	2008		2017		2018	
	Member	Number of applications	Member	Number of applications	Member	Number of applications
1	European Union	3,013	China	↑3 4,465	China	5,760
2	United States of America	1,624	European Union	↓1 3,422	European Union	3,554
3	Japan	1,384	United States of America	↓1 1,557	United States of America	1,609
4	China	945	Ukraine	↑13 1,345	Ukraine	1,575
5	Netherlands	751	Japan	↓2 1,019	Japan	880
6	Russian Federation	718	Russian Federation	807	Netherlands	↑1 792
7	Republic of Korea	490	Netherlands	↓2 763	Russian Federation	↓1 780
8	Australia	374	Republic of Korea	↓1 745	Republic of Korea	765
9	Canada	348	Australia	↓1 343	Australia	384
10	Brazil	207	Brazil	339	Brazil	327

Canada 330

Fonte: UPOV Press Release 122, 01/11/2019

MINISTÉRIO DA AGRICULTURA, PECUÁRIA E ABASTECIMENTO

### Top 10: UPOV members by number of titles issued

Rank	2008		2017		2018	
	Member	Number of titles issued	Member	Number of titles issued	Member	Number of titles issued
1	European Union	2,208	European Union	2,865	European Union	2,757
2	United States of America	1,589	China	↑4 1,646	China	2,395
3	Japan	1,236	United States of America	↓1 1,604	United States of America	1,424
4	Ukraine	704	Ukraine	887	Ukraine	1,021
5	Russian Federation	639	Japan	↓2 812	Japan	758
6	China	489	Netherlands	↑2 672	Netherlands	713
7	Republic of Korea	407	Russian Federation	↓2 641	Republic of Korea	↑1 574
8	Netherlands	360	Republic of Korea	↓1 541	Russian Federation	↓1 544
9	Canada	333	Brazil	↑4 327	Mexico	↑3 295
10	South Africa	315	Australia	↑1 244	Brazil	↓1 270

Fonte: UPOV Press Release 119, 01/11/2019



### Top 20: Country of residence of applicants

Rank	2008		2017		2018	
	Residence	App. #	Residence	App. #	Residence	App. #
1	Netherlands	2,517	China	↑5 4,041	China	5,254
2	United States of America	1,731	Netherlands	↓1 3,364	Netherlands	3,616
3	Germany	1,179	United States of America	↓1 2,108	United States of America	2,308
4	Japan	1,089	France	↑1 1,085	France	1,066
5	France	888	Germany	↓2 869	Germany	1,046
6	China	853	Japan	↓2 865	Japan	898
7	Russian Federation	601	Republic of Korea	↑1 641	Russian Federation	↑1 626
8	Republic of Korea	425	Russian Federation	↓1 603	Republic of Korea	↓1 603
9	Australia	340	Ukraine	↑13 538	Ukraine	542
10	Argentina	301	Switzerland	↑1 329	Switzerland	358
11	Switzerland	286	Australia	↓2 301	Spain	↑7 337
12	United Kingdom	268	Argentina	↓2 289	Australia	↓1 336
13	Denmark	192	Italy	↑5 246	Argentina	↓1 268
14	Israel	192	United Kingdom	↓2 238	Italy	↓1 232
15	Spain	189	Brazil	↑2 225	United Kingdom	↓1 225
16	New Zealand	166	Denmark	↓3 221	Brazil	↓1 213
17	Brazil	152	Spain	↓2 218	Viet Nam	↑1 195
18	Italy	146	Viet Nam	↑16 212	Denmark	↓2 187
19	South Africa	120	Israel	↓5 163	Israel	151
20	Canada	116	Belgium	↑1 159	Canada	↑1 130

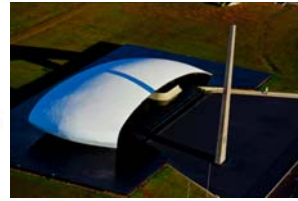
Fonte: UPOV Press Release 119, 01/11/2019



***Thank you for your attention!!  
Obrigado pela atenção!!***



MINISTÉRIO DA  
AGRICULTURA, PECUÁRIA  
E ABASTECIMENTO



Ricardo Zanatta Machado  
Coordinator of the PVP Office  
[Ricardo.machado@agricultura.gov.br](mailto:Ricardo.machado@agricultura.gov.br)

[Annex III follows]

TWV/54/9

Annex III

LIST OF LEADING EXPERTS

**DRAFT TEST GUIDELINES TO BE SUBMITTED  
TO THE TECHNICAL COMMITTEE IN 2020**

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

**before June 26, 2020**

Species	Basic Document	Leading Expert(s)
Brown Mustard ( <i>Brassica juncea</i> (L.) Czern.)	TG/BRASS_JUN(proj.7) and TWV/54/4	Mr. Takayuki Nishikawa (JP)
*Chick-pea ( <i>Cicer arietinum</i> L.) (Revision)	TG/143/4(proj.2)	Ms. Chrystelle Jouy (FR)

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWV/55  
(\* indicates possible final draft Test Guidelines)

**(Guideline date for Subgroup draft to be circulated by Leading Expert: January 22, 2021  
Guideline date for comments to Leading Expert by Subgroup: February 19, 2021)**

New draft to be submitted to the Office of the Union  
**by March 19, 2021**

Species	Basic Document	Leading Expert(s)	Interested Experts (State / Organization) <sup>1</sup>
Chinese cabbage ( <i>Brassica rapa</i> subsp. <i>pekinensis</i> (Lour.) Hanelt) (Revision)	TG/105/4	Ms. Yoo Jin Lee (KR)	CN, CZ, DE, FR, JP, NL, PL, QZ, CLI, Euroseeds, ISF, Office
Egg plant ( <i>Solanum melongena</i> L.) (Revision)	TG/117/5(proj.1)	Ms. Céline Morineau (QZ)	AU, BR, CN, DE, ES, FR, IT, JP, KE, KR, NL, SK, TR, CLI, Euroseeds, ISF, Office
*Garden Rocket ( <i>Eruca sativa</i> Mill.) (Partial revision: addition of a characteristic concerning anthocyanin coloration of leaf blade)	TG/245/1	Ms. Marian van Leeuwen (NL)	AU, FR, IT, QZ, CLI, Euroseeds, ISF, Office
*Garlic ( <i>Allium sativum</i> L.) (Partial revision: addition of plant material: seed and uniformity requirements)	TG/162/4	Ms. Marian van Leeuwen (NL)	BR, ES, FR, JP, KR, PL, QZ, CLI, Euroseeds, ISF, Office
Kale ( <i>B. oleracea</i> L. var. <i>costata</i> DC.; <i>B. oleracea</i> L. var. <i>medullosa</i> Thell.; <i>B. oleracea</i> L. var. <i>sabellica</i> L.; <i>B. oleracea</i> L. var. <i>viridis</i> L.; <i>B. oleracea</i> L. var. <i>palmifolia</i> DC.) (Revision)	TG/90/7(proj.2)	Mr. Takayuki Nishikawa (JP)	AU, CN, DE, FR, GB, IT, JP, KE, KR, NL, QZ, CLI, Euroseeds, ISF, Office
*Lettuce ( <i>Lactuca sativa</i> L.) (Partial revision: Char. and Ad. 53 "Resistance to LMV"; addition of DNA marker test)	TG/13/11 Rev.	Ms. Amanda van Dijk (NL)	BR, CA, CL, CN, DE, ES, FR, IT, JP, PL, QZ, US, CLI, Euroseeds, ISF, Office
*Melon ( <i>Cucumis melo</i> L.) (Partial revision: Char. 69 "Resistance to Fom", Char. 70 "Resistance to Px")	TG/104/5 Rev. 2	Ms. Chrystelle Jouy (FR)	BR, ES, IT, JP, KE, KR, NL, QZ, SK, CLI, Euroseeds, ISF, Office
*Pea ( <i>Pisum sativum</i> L.) (Partial revision: Char. 58 "Resistance to Fop", Char. 59 "Resistance to <i>E. pisi</i> ", Char. 60 "Resistance to <i>A. pisi</i> ")	TG/7/10 Rev. 2	Ms. Chrystelle Jouy (FR)	BR, CA, CZ, DE, ES, GB, IT, JP, KE, NL, PL, QZ, US, CLI, Euroseeds, ISF, Office
*Pepper ( <i>Capsicum annuum</i> L.) (Revision)	TG/76/9(proj.2)	Ms. Marian van Leeuwen (NL)	BG, BR, CA, CN, CZ, DE, ES, FR, HU, IT, JP, KE, KR, PL, QZ, SK, TR, US, CLI, Euroseeds, ISF, Office

<sup>1</sup> for name of experts, see list of participants

Species	Basic Document	Leading Expert(s)	Interested Experts (State / Organization) <sup>1</sup>
*Squash (Partial revision: to add new Characteristics “Resistance to ZYMV” and “Resistance to Watermelon mosaic virus”)	TG/119/4 Corr. 2, TWV/53/6	Ms. Chrystelle Jouy (FR)	CA, CN, IT, JP, KE, KR, NL, PL, QZ, CLI, Euroseeds, ISF, Office
Tomato ( <i>Solanum lycopersicum</i> L.) (Revision)	TG/44/11 Rev. 2	Ms. Amanda van Dijk (NL)	BG, BR, CA, CN, CZ, ES, FR, HU, IS, IT, KE, JP, PL, KR, QZ, RO, RU, SK, TK, US, CLI, Euroseeds, ISF, Office
*Tomato rootstock (Partial revision: coverage: to remove <i>S. cheesmaniae</i> , Chars. and Ads. 22 “Resistance to Mi”, 23 “Resistance to Va and Vd”, 24 “Resistance to Fol”, 26 “Resistance to Ff”)	TG/294/1 Corr. Rev. 2	Ms. Amanda van Dijk (NL)	CA, CN, ES, FR, HU, IS, IT, JP, KR, QZ, RO, RU, CLI, Euroseeds, ISF, Office
*Turnip ( <i>Brassica rapa</i> L. var. <i>rapa</i> L.) (Revision)	TG/37/11(proj.6)	Mr. Dominique Rousseau (FR)	TWA, CA, CN, CZ, DE, ES, GB, IT, JP, KR, NL, PL, QZ, US, ZA, CLI, Euroseeds, ISF, Office
*Wild Rocket ( <i>Diplotaxis tenuifolia</i> (L.) DC.) (Partial revision: partial revision: addition of a characteristic concerning anthocyanin coloration of leaf blade)	TG/244/1	Ms. Marian van Leeuwen (NL)	AU, FR, IT, QZ, CLI, Euroseeds, ISF, Office

**DRAFT TEST GUIDELINES FOR POSSIBLE FUTURE DISCUSSION**

Species	Basic Document(s)
Water spinach ( <i>Ipomoea aquatica</i> )	NEW

[End of Annex III and document]