UPOV
International Union for the Protection of New Varieties of Plants

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Technical Working Party for Agricultural Crops **TWA/47/7**

Forty-Seventh Session
Naivasha, Kenya, May 21 to 25, 2018

Original: English
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REPORT

Adopted by the Technical Working Party for Agricultural Crops

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Opening of the session

1. The Technical Working Party for Agricultural Crops (TWA) held its forty-seventh session in Naivasha, Kenya, from May 21 to 25, 2018. The list of participants is provided in Annex I to this report.

2. The session was opened by Ms. Cheryl Turnbull (United Kingdom), Chairperson of the TWA, who welcomed the participants and thanked Kenya for hosting the TWA session.

3. The TWA was welcomed by Mr. Simeon Kibet, General Manager, Quality Assurance, Kenya Plant Health Inspectorate Service (KEPHIS) and Mr. Isaac Macharia, General Manager, Phytosanitary Services, Kenya Plant Health Inspectorate Service (KEPHIS), on behalf of Ms. Esther Kimani, Managing Director, KEPHIS.

4. The TWA received a presentation by Mr. Isaac Macharia, on plant variety protection in Kenya. A copy of the presentation is provided in Annex II to this report.

5. The TWA was also welcomed by Ms. Anne Onyango, Agricultural Secretary, Ministry of Agriculture and Irrigation, State Department of Crops and Development, Kenya, on behalf of Mr. Richard Lesiyambe, Permanent Secretary, Ministry of Agriculture and Irrigation, State Department of Crops and Development, Kenya. A copy of the welcome address is provided in Annex III.

Adoption of the Agenda

6. The TWA adopted the agenda as presented in document TWA/47/1 REV..

Short Reports on Developments in Plant Variety Protection

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

7. The TWA noted the information on developments in plant variety protection from members and observers, provided in document TWA/47/3 Prov. The TWA noted that reports submitted to the Office of the Union after May 4, 2018, would be included in the final version of document TWA/47/3.

(b) Reports on developments within UPOV

8. The TWA received a presentation by the Office of the Union on latest developments within UPOV, a copy of which is provided in document TWA/47/2.

TGP documents

9. The TWA considered document TWP/2/1.

Matters for adoption by the Council in 2018

10. The TWA noted the revisions of TGP documents previously agreed by the TC 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)
(iii) Examining DUS in Bulk Samples (document TGP/8)
(iv) Illustrations for shape and ratio characteristics (document TGP/14)

Matters to be considered by the Technical Committee

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

11. The TWA noted that the proposed revision of document TGP/5 Section 1 for the inclusion of guidance on confidentiality of molecular information would be put forward for adoption by the Council, at its session in 2018, subject to approval by the TC and the CAJ.

Future revisions of TGP documents

12. The TWA noted that the following matters concerning a possible revision of TGP documents, would be considered by the TC, at its fifty-fourth session:

(i) Characteristics which only apply to certain varieties (document TGP/7);
(ii) The Combined-Over-Years Uniformity Criterion (COYU) (document TGP/8);
(iii) Data Processing for the Assessment of Distinctness and for Producing Variety Descriptions (document TGP/10);
(iv) Assessing Uniformity by Off-Types on Basis of More than One Growing Cycle or on the Basis of Sub Samples (document TGP/10).

Possible future revisions of TGP documents

TGP/7: Development of Test Guidelines

Procedure for the adoption of draft Test Guidelines

13. The TWA noted that the Council, at its thirty-fourth extraordinary session, had established a procedure for the adoption of Test Guidelines by correspondence. The TWA noted that further amendments to document TGP/7 Section 2.2.8 "Adoption of Draft Test Guidelines by the Technical Committee" would be required to reflect the introduction of the procedure for the adoption of Test Guidelines by correspondence.

14. The TWA noted the recommendation by the TC-EDC for implementing the procedure for adoption of Test Guidelines by correspondence as follows:

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

15. The TWA noted that the TC-EDC had agreed to propose that for Test Guidelines to be considered at the March/April meeting, they would need to be submitted by the Technical Working Parties at least 14 weeks prior to the TC-EDC meeting.

16. The TWA noted that the TC-EDC had agreed that three potential outcomes could be expected from Test Guidelines considered at the March/April meeting:

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

17. The TWA noted that in cases where no changes were required to the Test Guidelines, or only editorial changes on which recommendations were agreed by the TC-EDC, the Test Guidelines could be circulated for adoption by correspondence.

18. The TWA noted that editorial clarifications required to the Test Guidelines should be provided by the Leading Expert within four weeks and would be considered by the TC-EDC at its meeting in conjunction with the TC session in October/November.

19. The TWA noted that technical issues to be resolved on the Test Guidelines should be addressed at the relevant Technical Working Party session.

Proprietary method of assessment for male sterility

20. The TWA noted that the TC-EDC had recommended that the TC consider the possibility to accept the use of any method other than the proprietary method for the assessment of male sterility in Broccoli, including alternative markers for the DNA marker test, where validated by the testing authorities in UPOV members.

Suitability of characteristics in previous versions of Test Guidelines

21. The TWA noted that the TC-EDC had agreed to recommend to the TC to consider a situation where existing Test Guidelines characteristics did not meet the requirements set out in document TGP/7.

TGP/12: Guidance on Certain Physiological Characteristics

22. The TWA noted that the TC-EDC had agreed to invite the TC to consider whether to provide further guidance on elements that would not need to be completed in explanations for disease resistance characteristics in Test Guidelines using the Standard Resistance Protocol provided in document TGP/12 “Guidance on certain physiological characteristics”

23. The TWA noted that the TC-EDC had recommended that the TC considered providing training at relevant TWPs on providing explanations for disease resistance characteristics in Test Guidelines.

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

24. The TWA noted that the BMT had agreed to propose a revision to document TGP/15 in order to:

(i) reflect the refinements that had been made in France on the basis of its experience in the application of the Model “Combining Phenotypic and Molecular Distances in the Management of Variety Collections”; and

(ii) to include the approach presented by the Netherlands in documents BMT/16/19 “Genetic selection of similar varieties for the first growing cycle: example French bean” and BMT/16/19 Add.

Program for the development of TGP documents

25. The TWA noted the program for the development of TGP documents, as set out in Annex IV to document TWP/2/1.

TGP/7: Development of Test Guidelines

Duration of DUS tests

26. The TWA considered document TWP/2/9.

27. The TWA considered the proposal to amend guidance in document TGP/7 GN 8 to clarify that "the testing of a variety may be concluded earlier or later at the moment when the competent authority can determine with certainty the outcome of the test".

28. The TWA noted that the proposed text for a guidance note (GN8) should be featured as standard or additional wording in Test Guidelines in order to be seen by readers of Test Guidelines.

29. The TWA agreed that the proposed text for a guidance note (GN8) should read as follows:

"The testing of a variety may be concluded ~~earlier or later at the moment~~ 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)

30. The TWA considered document TWP/2/10 and the draft 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)" as set out in Annex II to document TWP/2/10.

31. The TWA agreed that a clarification should be added to paragraph 8.1.7.1, approaches (b) and (c), that results from growing cycles using different samples of plant material should not be combined, as provided in the proposed guidance for document TGP/10 on assessing uniformity by off-types on the basis of more than one growing cycle or on the basis of sub-samples.

32. The TWA agreed that the two-stage test described in paragraph 8.1.8 would only be possible when uniformity for a variety was considered separately in each cycle and assessed on a third growing cycle in case of divergent results (paragraph 8.1.7, approach "a").

TGP/14: Glossary of Terms Used in UPOV Documents

UPOV color groups

33. The TWA considered document TWP/2/12.

34. The TWA agreed that color charts were not commonly used in Test Guidelines for agricultural crops. It noted the development of proposals for the revision of guidance in document TGP/14 "Glossary of Terms used in UPOV Documents" to reflect the introduction of the revised list of UPOV Color Groups and to include guidance on the factors to be considered for creating color groups for grouping of varieties and organizing the growing trial.

Number of growing cycles in DUS examination

35. The TWA considered document TWA/47/5 "Impact of the number of growing cycles on variety descriptions and discrimination power in potato" and received a presentation by an expert from Germany, a copy of which would be provided as document TWA/47/5 Add.

36. The TWA agreed that variety descriptions generated over two growing cycles were more robust than those generated over a single growing cycle. The TWA also agreed that two growing cycles allowed a more robust assessment of individual characteristics.

37. The TWA agreed that a robust decision on distinctness could be reached after a single growing cycle on the basis of a sufficiently large difference in characteristics.

38. The TWA noted that DNA-marker information could provide supporting information in the DUS examination, as set out in document TGP/15 "Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)". The TWA noted the experience reported by

the Netherlands that DNA-marker information was also used for enforcing plant breeders' rights in combination with side-by-side verification of conformity of plant material to a protected variety.

Illustrations for shape and ratio characteristics

39. The TWA considered document TWP/2/11.

40. The TWA noted the comments by the TWPs, at their sessions in 2017, and by the TC-EDC, at its meeting in March 2018.

41. The TWA considered the usefulness of grids under particular situations and agreed that grids could provide useful information to describe the range of a characteristic. The TWA noted that some leading experts of Test Guidelines had difficulty to provide explanations on shape characteristics using grids. The TWA agreed with the TC-EDC that there should be flexibility for presenting explanations on shape characteristics using grids, provided the states of expression were clearly explained.

42. The TWA considered the possible next steps, as set out in paragraphs 17 to 19 of document TWP/2/11, and agreed with the proposal to establish a sub-group to meet prior to the TC session, in October 2018. The TWA agreed with the proposal that the sub-group discuss the approaches to presenting information using grids and agreed that it could be difficult to define a general rule on the difference in Notes to establish distinctness within a characteristic.

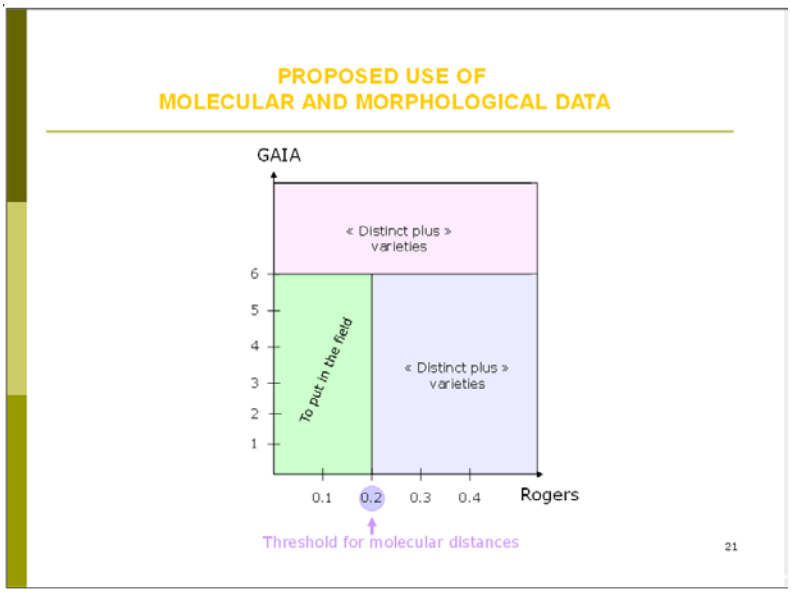
Molecular Techniques

43. The TWA considered document TWP/2/7 and noted the report on developments in the TWPs and BMT, as set out in paragraphs 6 to 36 of document TWP/2/7.

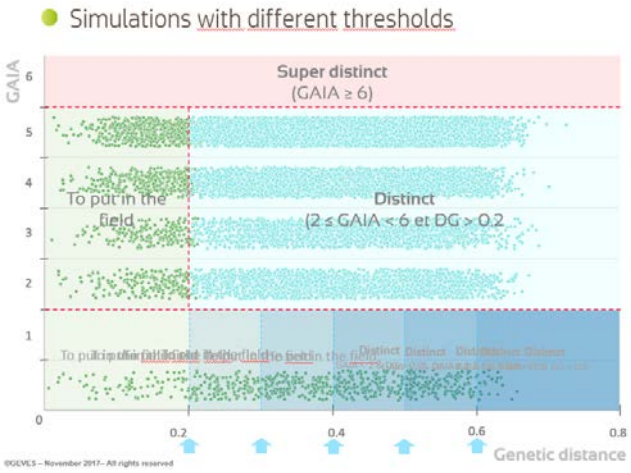
44. The TWA received a presentation by an expert from France on the refinements that had been made on the basis of experience in the application of the Model "Combining Phenotypic and Molecular Distances in the Management of Variety Collections". A copy of the presentation is provided in document BMT/16/8 Add. "Addendum to the use of molecular markers (SNP) for maize DUS testing in France (2013 to 2016)".

45. The TWA noted that the studies for the refinement of the model used in France were still ongoing and that a final conclusion on the threshold level to be used had not yet been reached (e.g. Rogers distance = 0.2). The TWA noted that this would mean that a new proposal would need to be presented to the BMT and TWA at future sessions as a basis to propose a revision of TGP/15 for this model.

46. The TWA considered document TGP/15/2 Draft 1. The TWA noted that the new slide introduced to illustrate the refinement in the approach used by France did not reflect a final decision on the genetic distance threshold to be used in parent lines of maize (below).



47. The TWA agreed that the following extract from document BMT/16/8/Add. slide 16, should be included in the proposed revision of document TGP/15:



48. The TWA noted the refinements being made to the model used in France on the following basis:

- a "parameter setting step" analyzing several growing cycles was being used to established the threshold value;
- any threshold value would be crop-specific and should be determined by crop experts.

49. The TWA noted that the method used in France only rejected a candidate variety after the third growing cycle.

50. The TWA noted that the approach "Genetic selection of similar varieties for the first growing cycle: example French bean" presented in document TWP/2/7 Annex III would be discussed by the TWV at its session in 2018.

Minimum distance between varieties

51. The TWA received a presentation by an expert from the European Union on "Case study on minimum distances between vegetatively reproduced ornamental and fruit varieties", a copy of which is presented in document TWA/47/4 "Minimum distance between varieties".

52. The TWA noted that the project had been based on the analysis of distinctness using a sub-set of Test Guidelines characteristics that were considered to be important by breeders of the crops studied ("mock protocol").

53. The TWA noted the conclusions of the project, which had been completed, that the "mock protocol" could require an increase in the size of field trials due to lack of clear distinctness between a larger number of varieties.

54. The TWA noted that a follow-up project based on field trials was being considered with the participation of breeders of protected varieties.

Guidance for drafters of Test Guidelines

55. The TWA considered document TWP/2/8.

56. The TWA 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.

57. The TWA 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.

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

59. The TWA 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

60. The TWA noted the report by an expert from the United States of America that 3 applications for the protection of new varieties of "Chia" (*Salvia hispanica* L.) had recently been filed.

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

*Test Guidelines for Cotton (*Gossypium *L.)*

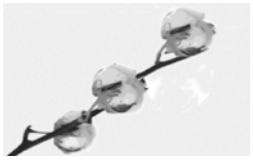
61. The TWA considered document TWA/47/6 and agreed the following:

4.2.4	to specify to which type of varieties this paragraph applies to (to check whether 1% population standard applies to all varieties or specific type of varieties) *Leading Expert: for all types of varieties, therefore, paragraph 4.2.3 should be excluded.* *TWA: agreed*
Char. 6	to check whether to delete "clearly" *Leading Expert: Don't delete because if it's not clearly below or clearly above must be considered at the same level.* *TWA: agreed*
Char. 23	"Tall" should be "tall" *Leading Expert: agreed*
Char. 28	to read "100 seed weight" *TWA: agreed*
Char. 30 to 34	to clarify how the characteristics are assessed *Leading Expert: The characteristics "Fiber: length (30), strength (31), elongation (32), fineness (micronaire) (33), length uniformity (34)" are evaluated on samples of lint, without seeds. To see explanation Ad.29* *TWA: explanation to read* *"One sample of 500 grams of raw cotton is collected from each repetition. The sample is collected along the plot from capsules located in 1st and 2nd position of the lower fruit branches.* *"The sample of lint, without seed, is analyzed for length, resistance, elongation and fineness."*
Char. 32	- to add explanation to define the characteristic (meaning of elongation) - to indicate how it is observed *Leading Expert: Elongation expresses the ability of the fiber to stretch before breaking* *TWA: agreed to add explanation as provided by Leading Expert*
Char. 34	- to review wording of characteristic header (fiber length uniformity) - to add explanation to define the characteristic (meaning of length uniformity) - to indicate how it is observed *Leading Expert: According to Classification of Upland Cotton:* *Length uniformity is the ratio between the mean length and the upperhalf mean length of the fibers, expressed as a percentage. If all of the fibers in the bale were the same length, the mean length and the upperhalf mean length would be the same, and the uniformity would be 100 percent. However, because of natural variation in the length of cotton fibers, length uniformity will always be less than 100 percent.* *TWA: to delete Char. 34*

8.1 (c)	to check whether to be formatted with bullet points at the same alignment for both "Standard Test Methods" as follows: "• Standard Test Methods for Measurement of Cotton Fibres by High Volume Instruments (HVI) (Motion Control Fiber Information System). Designation D-4604-95 "• Standard Test Methods for Measurement of Physical Properties of Cotton Fibers by High Volume Instruments (HVI). Designation D-5867-95 "Established by the American Society for Testing and Materials (ASTM)" *TWA: agreed*
Ad. 1	- to improve illustrations (to clarify what clustering is; is clustered the appropriate term?) (density of flowers, distance between flowers?) - is it really PQ or QN (illustration looks like QN) *Leading Expert: it could be QN; clustered is appropriate because is the international denomination; it refers to distance between flowers.* *TWA: agreed with new illustrations and to add explanation "Clustered refers to distance between flowers."* *New illustrations:*

1
clustered

2
semi-clustered



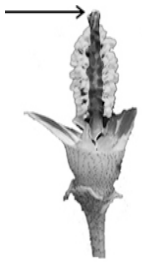
3
non-clustered

(see document TWA/47/6 for illustrations on original size)

Ad. 6	to clearly display stigma (magnify plant part to be shown) *Leading Expert: To see new illustrations* *TWA: agreed with new illustrations*

1
clearly below

2
same level



3
clearly above

(see document TWA/47/6 for illustrations on original size)

Ad. 28	"... on ~~a sample of~~ delinted seed." *TWA: agreed*
Ad. 29	to improve explanation (percentage of what?) *Leading Expert: The procedure to be followed is as follows:* *- One sample of 500 grams of raw cotton is collected from each repetition. The sample is collected along the plot from capsules located in 1st and 2nd position of the lower fruit branches.* *- The lint is separated from the seeds. The content of lint expresses as the percentage of lint in relation to raw cotton.* *- The sample of lint, without seed, is sent to the laboratory for the realization of the analysis of length, resistance, elongation, fineness and uniformity.* *TWA: explanation to read* *"One sample of 500 grams of raw cotton is collected from each repetition. The sample is collected along the plot from capsules located in 1st and 2nd position of the lower fruit branches.* *"The lint is separated from the seeds. The content of lint is expressed as the percentage of lint in relation to raw cotton."*

8.3	to add literature reference *Leading Expert: Meier U., 1997: Growth stages of mono- and dicotyledonous plants: BBCH-Monograph. Wien Federal Biological Research Center for Agriculture and Forestry, Blackwell Wissenschafts-Verlag, Berlin, DE.*
9.	First two references should be amended according the usual way to present literature with all relevant information. *Leading Expert: We propose the literature as in the CVPVO protocol.* 9. LITERATURE American Society for Testing and Materials (ASTM) (1995): Standard Test. Methods for Measurement of Cotton Fibres by High Volume Instruments (HVI). (Motion Control Fiber Information System) (Designation: D4604-95). American Society for Testing and Materials (ASTM) (1995), Standard Test Methods for Measurement of Physical Properties of Cotton Fibers by High Volume Instruments (Designation: D5867-95). "Cotton", Ed. R.J. Kohel and C.F. Lewis, no. 24 in the series "Agronomy", American Society of Agronomy, Inc., Crop Science Society of America, Inc., Soil Science Society of America, Inc., Publishers Madison, Wisconsin, 1984, US. "Cotton. Origin, History, Technology and Production." Ed C.W. Smith and J.T. Cothren. Wiley Series in Crop Science. John Wiley & Sons, Inc.. 1999. US. Manual de Identificación de Variedades de Algodón, Ministerio de Agricultura, Pesca y Alimentación, Secretaria General de Agricultura y Alimentación, 1999, ES. Meier U., 1997: Growth stages of mono- and dicotyledonous plants: BBCH-Monograph. Wien Federal Biological Research Center for Agriculture and Forestry, Blackwell Wissenschafts-Verlag, Berlin, DE. *TWA: agreed*
TQ 1.	to add box for species as 1.3 *TWA: agreed*

Discussion on draft Test Guidelines

62. The TWA agreed to request Leading Experts of draft Test Guidelines to follow recommendations by the subgroups of crop experts on the basis of the following list of recommendations and those from previous sessions.

**Castor Bean (*Ricinus communis *L.)*

63. The subgroup discussed document TG/RICIN(proj.3), presented by Mr. Donovan Sonnenberg (South Africa) on behalf of Mr. Adriaan de Villiers (South Africa), and agreed the following:

Cover page	to add a space between "castor bean" in table for alternative names
3.3.3	to be deleted (no characteristic based on color chart in the TG)
5.3	to delete (a), (b), (c), (g)
Char. 4	to delete (*)
Chars. 6, 9, 11	to be deleted
Chars. 21, 22	to delete "main" (secondary colors are not assessed)

Char. 24	- to have states non-synoecious (1), synoecious (2), gynomonoecious (3) - to add explanation: non-synoecious – A plant with female and male flowers in separate inflorescences. synoecious – A plant with female and male flowers in the same inflorescence. gynomonoecious – A plant where female and hermaphrodite flowers occur separately on the same plant.
Char. 25	to be deleted
Char. 29	to be deleted
Char. 35	state 2 to read “short to medium”
Char. 41	- to delete example varieties as an illustration is provided - delete (*)
8.1 (a) to (c), (e)	to delete repeated mention to plant parts and explanations to read “Observations should be made…)
Ad. 10	to combine illustrations in Ad. 10, 14, 15, 16 in a single illustration with white background
Ad. 32	to read: “Observations should be made on mature capsules from the middle third of the infructescence.”
Ad. 41	to rotate images 90° (width at horizontal)
Ad. 44	to read “The caruncle is a spongelike growth on the hilum of the seed.”
9.	-to add full stop after authors’ initials -to add coma after each author
TQ 6.	state “weak” to read “absent or weak” (as in the table of characteristics)

*Ginseng (*Panax ginseng *C.A. Mey.) (Revision)*

64. The subgroup discussed document TG/224/2(proj.2), presented by Mr. Wonsig Lee (Republic of Korea), and agreed the following:

2.3	minimum quantity of plant material, to be supplied by the applicant, to read “200 g” (and delete 0.4 liters of seed)
4.1.6	to check whether to move sentence to Chapter 8
4.2.2	to read “These Test Guidelines have been developed for the examination of seed propagated self-pollinated varieties. …”
5.3	to check whether not to use QN characteristics
Table of Chars.	general remark: to add growth stages for observation of each characteristic (e.g. simplified growth stage key: see document TGP/7 GN9, page 48)
Char. 3	to read “Stem: thickness” and to use scale from “thin” to “thick”
Chars. 5, 6	- to check whether to be combined into a single QN characteristic (“anthocyanin coloration”) - to check whether states of expression to read “absent or very weak” to “very strong”
Chars. 5 to 7	to add (a)
Char. 7	to be indicated as QN and to have 3 states of expression
Chars. 8 to 12	to add (b)
Chars. 9, 10	- to check whether to be combined into one single characteristic (“Petiole: anthocyanin coloration”) - to check whether state 1 to read “absent or very weak”
Char. 12	- to replace “many” by “long” - to add explanation as in Ad. 8 (“see Ad. 8”)
Char. 13	to check whether to replace “additional leaflets” with “secondary leaflets”
Char. 14	- to check whether to clarify characteristic name (Plant: number of leaves?) - to replace (b) with (a)
Char. 15	to reduce scale 5 notes only (to check whether 3 notes would be sufficient)

Char. 19	to check whether state “elliptic” to read “medium elliptic”
Char. 21	- to add illustration - to use scale of 5 notes
Char. 22	to check whether to define “flowering” (e.g. when the plant has at least one open flower)
Char. 25	to check whether to be indicated as QN
Char. 29	to check whether to read “Main root: thickness”
Char. 31	to check whether other colors exist in cultivated varieties (to check how to establish the cut-off point for the states of expression) (to check the rage of expression to enable distinctness to be established with at least one note between the extremes of the scale)
Char. 33	- to have scale of notes “absent or few”, “medium”, “many” (the mid-point must be “medium”) - to check appropriate botanical name for “stolon”
8.1 (a)	to check whether to read “… on the longest and/or thickest.”
8.1 (b)	to read “Observations should be made on the central leaflet.”
Ad. 3	to read “…2-3 cm from soil…”
8.3	- to check whether to delete life cycle of Ginseng (not used in the Test Guidelines) - to add simplified growth stages
9.	to complete references using the following format: [Surname 1], [Initials 1]., [Surname 2], [Initials 2] etc. ., [Year]: [Title]. [Publication]. [Town], [City / Region], [Country*], [pp. n1 to n2 or x pp.] * presented as two-letter country code according to WIPO Standard ST.3 and International Standard ISO 3166. Example: Reid, C., Dyer, R.A., 1984: A review of the South African species of Cyrtanthus. The American Plant Life Society. California, US, 68 pp.
TQ 5.	to indicate all states of expression and notes on the scale of each characteristic (even notes)
TQ 6.	to add example

**Oats (*Avena sativa *L. &* Avena nuda *L.) (Revision)*

65. The subgroup discussed document TG/20/11(proj.4), presented by Mr. Antonio Escolano (Spain), and agreed the following:

Cover page	to update GENIE in line with GRIN (other synonyms) and to delete *Avena byzantina* as synonym from cover page
2.3	to add “(if requested)” after “Panicles: 120”
Char. 7	to delete example variety “Argentina” from state 5
Char. 12	to add (a)
Char. 14	to replace example variety “Anchuela” with “(w) RGT Victorious” (state 7)
Char. 19	- to be observed from growth stage 80 – 92 - to delete example variety “Odal” - to add (a)
Ad. 4	to be presented in correct format
Ad. 19	to replace current explanation with “The mean number of awned grains in the panicle should be observed”

**Quinoa (*Chenopodium quinoa *Willd.)*

66. The subgroup discussed document TG/CHENO(proj.5), presented by Mr. Erik Lawaetz (Denmark), and agreed the following:

4.2.2	to add new paragraph before current 4.2.2 to read “These Test Guidelines have been developed for the examination of seed-propagated varieties. For varieties with other types of propagation the recommendations in the General Introduction and document TGP/13 “Guidance for new types and species” Section 4.5 “Testing Uniformity” should be followed.
5.3	to add Char. 17 “Seed: color” as grouping characteristics
Char. 1	to replace current example variety for state 1 with “Jessie”
Char. 2	- to add (a) - to add example variety “Jessie” for state 3 - to replace current example variety for state 5 with “Regalona”
Char. 3	- to add example variety “Riobamba” for state 5 - to replace current example variety for state 7 with “Carmen”
Char. 5	- to add example variety “Regalona” for state 1 - to add example variety “Puno” for state 2
Char. 6	- to add example variety “Jessie” for state 3 - to add example variety “Regalona” for state 5 - to replace current example variety for state 7 with “Atlas”
Char. 7	- to add (*) - to delete example variety from state 1
Char. 8	to replace current example variety for state 1 with “Red Carina”
Char. 9	to add example variety “Carmen” for state 2
Char. 11	- to add example variety “Regalona” for state 1 - to delete example variety from state 2 - to replace current example variety for state 4 with “Titicaca” - state 5 to read “pink” instead of “red”
Char. 12	- to add (*) - to add example variety “Regalona” for state 5 - to replace current example variety for state 7 with “Atlas”
Char. 13	- to be moved before Char. 12 - to add explanation to read “Observations should be made including inflorescence.” - to replace current example variety for state 3 with “Pasto” - to replace current example variety for state 7 with “Atlas”
Char. 14	to replace current example variety for state 3 with “Red Carina”
Char. 15	to replace current example variety for state 7 with “Dutchess”
Char. 16	to replace current example variety for state 3 with “Titicaca”
Char. 17	- to delete example variety “Atlas” from state 1 - to replace current example variety for state 2 with “Jessie” - to replace current example varieties for state 4 with “Carmen”
Char. 18	- to add (*) - to replace current example variety for state 2 with “Carmen” - to add example variety “Titicaca” for state 4
Char. 20	- to have states “absent or low”, “medium”, “high” - growth stage to be indicated as 00 and to be moved before Char. 1 - to read “Grain: saponin content”
Ad. 6	to read “Time of flowering is reached when…”
Ad. 12	to read “Time of maturity is reached when…”

Ad. 20	- to add “Grain saponin content is measured as a foam test. Testing should have a minimum of at least 3 replicates.” - to add title to method to read “to read “Standard afrosimetric method (KOZIOL, 1991)” - to remove full stops after abbreviations for gram, milliliter and second - to check whether to read “(4 shakes/s)”
TQ 6.	current expressions in example to be replaced with “brown” and “black”

*Red Clover (*Trifolium pratense *L.)*

67. The subgroup discussed document TG/5/8(proj.3), presented by Mr. Donovan Sonnenberg (South Africa), and agreed the following:

Cover page	to add French common name “Trèfle rouge”
2.3	to change minimum quantity of plant material, to be supplied by the applicant, to 500 g
Table of Chars.	- to check whether to add more asterisks - to add Characteristic “Plant: natural height in aftermath” as in TG/5/7 including explanation - to review order of characteristics and growth stages as follows

TG/5/8(proj.3) numbering	NEW numbering		Growth stage
1	1	Plant: ploidy	
2	2	Cotyledon: length	11
		- to check whether to have 1 to 9 scale - to check whether to add example varieties	
3	3	Cotyledon: width	11
11	4	Petiole: density of hairs	13
		- to have notes 1 to 5 - to check whether to keep char as it is or use “Stem: hairiness” as in TG/5/7 - to add example varieties	
4	5	Plant: natural height <u>without</u> vernalization	29
13	6	Leaf: intensity of green color <u>without</u> vernalization	29
		- to have states “light” to “dark”	
6	7	Plant growth habit	29
		- to add colon after “Plant:”	
5	8	Plant: tendency to flower <u>without</u> vernalization	
15	9	Leaf: marking	29
7	10	Plant: natural height <u>after</u> vernalization	31-39
14	11	Leaf: intensity of green color <u>after</u> vernalization	31-39
		- to have states “light” to “dark” - to delete “Rubitas” as example variety for state 7 and add “Grasslands Turoa”	
12	12	Leaf: length of petiole	31-69
		- to have states very short (1) to very long (5) - to add example variety “Rubitas” to state “very short” - to add example variety “Ravvi” to state “medium” - to add (b)	
16	13	Median leaflet: length	31-69
		- to add (b) - to check whether to add example varieties	

17	14	Median leaflet: width	31-69
		- to add (b)	
18	15	Time of flowering	
8	16	Stem: length	39-69
9	17	Stem: thickness	39-69
10	18	Stem: number of internodes	39-69
		- to add example varieties for states 3 and 5	

8.1	to add (b) to read “All measurements on the leaf should be made within 1 to 2 weeks after the mean date of flowering on the third leaf of the main stem from the top.”
Ad. 9	to read “to read “The thickness should be measured 2 to 4 cm above tillering node.”
Ad. 15	to read “The leaf markings refer to the conspicuousness of the leaf marking.”
Ad. 18	to read “All measurements on the leaf should be made within 1 to 2 weeks after the mean date of flowering on the third leaf of the main stem from the top.”
8.3	growth stages to read *8.3 Phenological growth stages based to the general BBCH-scale (Meier, 2001) adjusted for Red Clover* <u>Principal growth stage 0: Germination</u> 00: Dry seed <u>Principal growth stage 1: Leaf development</u> 11: First leaf unfolded 13: 3 leaves unfolded <u>Principle growth stage 2: Formation of side shoots/tillering</u> 29: 9 or more shoots visible <u>Principle growth stage 3: Stem elongation</u> 31: Stem 10% of final length 39: Maximum stem length reached <u>Principle growth stage 5: Inflorescence emergence</u> 51: Inflorescence visible <u>Principle growth stage 6: Flowering</u> 69: End of flowering

Rice (Oryza sativa *L.*) *(Revision)*

68. The subgroup discussed document TG/16/9(proj.2), presented by Mr. Kohei Imamura (Japan), and agreed the following:

4.1.6	to be deleted
4.2.2	to read “…for the examination of self-pollinated and hybrid varieties. …”
4.2.6	to add decimal dot to indicate 0.1% (instead of 01%)
5.3	to delete (e) Characteristic 36 as grouping characteristics
Table of Chars.	to check whether to spell example varieties with first capital letter
Char. 2	- state 5 to read “intermediate” - state 7 to read “semi-prostrate”
Char. 3	to read “Distal leaf sheath: anthocyanin coloration”
Char. 4	to add (a)

Char. 6	to check whether to be indicated as QN with scale from “weak” to “strong”
Char. 8	-to check whether to add example variety for state 1 -state (3) to read “lobed” (replace “cleft”)
Char. 10	to delete growth stage
Char. 17	to check whether to clarify which node to be observed
Char. 18	to check whether to clarify where to be observed
Char. 19	to read “Plant: number of panicles” to delete (*)
Char. 20	state 2 to read “apical quarter”
Chars. 23, 32, 35, 40	to move state “brown” after “purple”
Char. 27	- state 1 to read “compact” - state 2 to read “semi-compact”
Char. 28	to check whether to add illustration
Char. 30	to add explanation to read “The time of maturity is when at least 80% of the grains on the panicles are fully mature.”
Char. 33	- to use scale of notes “weak” to “strong” (instead of “light” to “dark”) - to be indicated as VG/A
Char. 36	- to read “1000 seed weight” - to be indicated as MG/A
Char. 39	to use states “low” to “high”
Char. 42	to be indicated as VG/B
Chars. 43, 44	growth stage to be indicated as 00 and chars. moved to beginning of table of characteristics
Char. 44	to describe the method used to assess the characteristic
Ad. 1	to check whether to read “…degrees…” (plural)
Ad. 15	to read “Measurements should be made from the base to the panicle base on the longest stem, excluding deep water rice.”
Ad. 21	to read “Observations…”
Ad. 26	to be corrected (current illustration for state 3 should be state 4 and new illustration for state 3 to be added)
Ad. 31	to check whether flag leaves should also be observed
Ad. 34	to check whether to read “…on the longer…”
Ad. 41	to use same scale of notes as in Char. 41 (“weak” to “strong”)
8.3	- to delete repeated numbering 8.3 at header - to check alignment of numbers and text from growth stage 52 (formatting?)
TQ 5.	- to add Char. 39 - to complete scale of states of expression and notes with even states

*Soya Bean (*Glycine max *(L.) Merrill) (Revision)*

69. The subgroup discussed document TG/80/7(proj.4), presented by Mr. Lubomir Basta (Slovakia) on behalf of Mr. Alberto Ballesteros (Argentina), and agreed the following:

3.3.2	to check whether to add Additional Standard Wording (ASW 4) to distinguish characteristics to be observed on special test (e.g. plant: growth type)
4.1.4	number of plants/parts of plants to be indicated as 20
4.1.6	to be deleted
4.2.2	to read “These Test Guidelines have been developed for the examination of self-pollinated varieties. …”
5.3 (d)	to replace Char. 18 with Char. 3 “Time of maturity”
6.5	7 to indicate growth stage key

Table of Chars.	to sort characteristics by growth stages (chronological order)
Char. 1	- to have a 9 notes scale with states “absent or very weak” to “very strong” - to be indicated as QN
Char. 3	- to add (+) and explanation - to check whether to use standard wording for states of expression (extremely early to extremely late) replacing numbers (000, 00, …) - to check whether 9 notes would be sufficient to score this characteristic
Char. 4	to provide full set of example varieties from a single provenance (origin) for the agreed 4 states of expression
Char. 6	to have state “grey” after “dark brown”
Char. 9	to be indicated as PQ
Char. 13	- to check whether to have state “grey” after “brown” - to check whether to include states of expression “light grey”, “dark grey”, “light, medium and dark brown” and to delete “brown” - to check whether to add explanation to explain to be observed with pubescence
Char. 14	to check whether to be replaced by “100 seed weight” with scale of 9 notes
Char. 15	- to read “Seed: shape in longitudinal section” - to have states “circular”, “narrow oblate”, “medium oblate”, “broad oblate”
Char. 17	to check whether to have states absent or weak (1), medium (2), strong (3)
Char. 19	- to read “Seed: color of hilum” - to check whether to separate “imperfect” states of expression into a different characteristic (e.g. “Seed: presence of ring around hilum” or to define “imperfect” – two colors?) - to check the meaning of “imperfect”
Char. 20	- to check whether to add illustration or explanation
Char. 21	to be deleted (to keep only “Plant: height”)
8.	to check whether to add growth stage key as Chapter 8.2
Ad. 4	to check whether to be moved to section 3.4 “Test Design”
TQ 4.	to be completed
TQ 6.	to check whether to use another characteristic with more similar states of expression (e.g. QN characteristic)

*Common Sunflower (*Helianthus annuus *L.) (Revision)*

70. The subgroup discussed document TG/81/7(proj.1), presented by Ms. Anne-Lise Corbel (France) on behalf of Zoltán Csűrös (Hungary), and agreed the following:

4.1.4	to indicate the number of plants or parts of plants as 36
Table of Chars.	- to add example varieties - to add Char. 26 “Bract: green color of outer side” from TG/81/6 with 3 or 5 notes, to be indicated as QN and VG, growth stage to be indicated as 63-65 - to check whether to add characteristic “Oleic acid content”
Char. 1	to check scale (to have notes 1 to 9?)
Char. 2	to have states from “light” to “dark”
Char. 4	- to check whether serration or dentation - to check whether characteristic relates to depth or density
Char. 5	- to be indicated as QN - to read “shape in cross section” - to check whether to have three states concave (1), flat (2), convex (3)
Chars. 5 to 10	to check whether to have growth stage 53-55

Char. 6	-to check whether to split variation in different characteristics (e.g. differentiated tip; width of distal part) - state “narrow triangular to broad triangular” to read “medium triangular” - state “broad triangular to acuminate” to read “short acuminate” - state “acuminate” to read “medium acuminate”
Char. 8	to be indicated as QN
Char. 10	to read “height of tip of blade compared to insertion of petiole” (delete “the”)
Char. 11	to check whether growth stage to be indicated as 55-57
Char. 12	to be deleted
Char. 14	- to read “Ray floret: attitude in relation to head” - to have states right angle (1), right angle to horizontal (2), horizontal (3), strongly recurved to back of head (4)
Char. 15	- to have notes 1 to 5 with states “very sparse” to “very dense” - to read “Flower: density of ray florets”
Char. 16	to check whether to read “Ray floret: width” (to be indicated as QN with states from “narrow” to “broad”)
Char. 17	- to delete state 4 from Char. 17 and move it to Char. 14 - to check whether to add illustration
Char. 19	- to be indicated as PQ - to delete “multicolored” - to add explanation that if more than one color, only the color covering the biggest surface is considered - to check whether to combine states yellowish white and light yellow
Char. 20	to check whether to be indicated as PQ
Char. 23	- to check whether to read “Bract: width” - to check whether state 2 to read “intermediate”
Char. 24	to delete state 9 (show reduced scale from states 3 to 7 only)
Char. 25	- to be indicated as QN - to check whether to add illustration
Char. 26	to check range of variation within collections and check whether characteristic to be split (open-pollinated/hybrid and inbred lines)
Char. 28	to be indicated as QN or PQ
Char. 29	- to be indicated as QN - to read “Plant: position of highest lateral head to central head” - to add explanation what “natural position” means
Chars. 30, 31	- to be indicated as QN - to provide illustrations for both characteristics and explanation
Char. 33	to be indicated as PQ
Char. 34	- to add explanation to clarify what size refers to and how to be observed - to delete state 9 (show reduced scale from states 3 to 7 only)
Char. 36	- to have 9 note scale (high notes for human consumption varieties) - to be indicated as QN
Char. 37	- to delete “main” - to have states “white”, “purple”, “light brown”, “medium brown”, “dark brown”, “light grey”, “medium grey” - to check whether to add “dark grey” or “black”
Chars. 38, 39	to check whether states to read “none or few”, “medium”, “many” (to clarify whether number or conspicuousness of stripes)
Char. 40	- to check whether to sort order of colors according to document TGP/14 (change from previous version of the same characteristic in TG/81/6) - to check whether to add new color “light yellow brown” (or other appropriate color)
Ad. 14	to be improved (replace photos with drawings in side view)
9.	to check whether to add literature, including those in 8.3

Annex II	- to include additional characteristics in the main body of the TG without asterisks - to include missing races for disease resistance characteristics - to check whether to present protocol for assessment of disease resistance characteristics as set out in document TGP/12 - to check whether herbicide tolerance characteristics to be indicated as QN (the scale of notes provided is not compatible with QL)

*Tea (*Camellia sinensis *(L.) Kuntze) (Revision)*

71. The subgroup discussed document TG/238/2(proj.1), presented by Mr. Simeon Kibet (Kenya), and agreed the following:

1.	to delete second sentence
2.3	to delete last paragraph
3.1	to be completed with ASW for single growing cycle
4.1.1	to delete ASW on distinctness assessment of hybrids
4.2.3	to check whether to adjust the number of plants for distinctness and uniformity (allowing the off-type plants)
5.3	- to delete “Flower: density of pubescence of ovary” (char. 29) - to add “Leaf blade: color” (char. 16) - to add “Young shoots: pubescence of the bud” (char. 8)
Table of Chars.	to check whether to add explanations for the characteristics.
Char. 1	- to check whether to add growth stage for assessment - to consider whether to further precise the definition of “vigor”
Char. 2	to add explanation
Chars. 2 to 4	to check whether to add growth stage for assessment
Char. 5	- to check whether to add growth stage for assessment - to check whether to be deleted
Char. 6	to be observed as MG
Char. 7	- to add state of expression purple (6) with example variety “TRFK 306” and state “brown” to become note 7 - example variety for state 5 to read “TRFK 91/1”
Char. 8	to be combined with Char. 10
Char. 10	- to be indicated as QN - to use scale of 9 notes
Char. 15	- to check whether to clarify difference from Char. 13 and 14 (replace by “ratio length/width”?) - to replace species “Camelia japonica” by a commercial variety
Char. 18	to check whether to add illustration
Char. 23	to replace the species by a commercial variety
Char. 24	to read “Time of full flowering”
Char. 27	to check whether to be indicated as QN with 3 states of expression
Chars. 29, 31	to be combined
Char. 32	- to consider reducing scale of notes - to add example varieties
Char. 33	- to add illustration - to use scale of 5 notes
Char. 34	state 3 to read “level”
Chars. 35, 36	to be deleted
TQ 4., 5., 6.	to be completed

Triticale (x Triticosecale *Witt.) (Revision)*

72. The subgroup discussed document TG/121/4(proj.1), presented by Mr. Tanvir Hossain (Australia), and agreed the following:

2.3	- number of ears to be indicated as 120 - last sentence to read “The ears….”
3.4	to have the following order of paragraphs 3.4.1 Each test should be designed to result in a total of at least 2000 plants, which should be divided between at least 2 replicates. 3.4.2 If tests on ear rows are conducted, at least 100 ear rows should be observed. 3.4.3 The assessment of the characteristic "Seasonal type" should be carried out on at least 300 plants 3.4.4 The design of the tests should be such…
4.2.2	to read “These Test Guidelines have been developed for the examination of mainly self-pollinated varieties and hybrid varieties. …”
4.2.7	second paragraph: to check whether to delete “…with the exception of characteristic 2 and 3” (both characteristics are observed on sample size B)
4.2.5	A to read “sample size of 100 plants/parts of plants/ear rows”
4.2.6	to read “For the assessment of uniformity of mainly self-pollinated varieties, …”
4.2.7	to read “For the assessment of uniformity in a sample of 100 ear-rows, plants or parts of plants, a population standard of 6% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 100 ear-rows, plants or parts of plants, 10 off-types are allowed. An ear-row is considered to be an off-type ear-row if there is more than 1 off-type plant within that ear-row. For “A” characteristics, with the exception of characteristics 1 and 24 (numbering to be checked), the assessment of uniformity can be done in 2 steps. In a first step, 20 plants are observed. If no off-types are observed, the variety is considered to be uniform. If more than 6 off-types are observed, the variety is considered not to be uniform. If 1 to 6 off-types are observed, an additional sample of 80 plants or parts of plants must be observed. For the assessment of uniformity of hybrid varieties, a population standard of 10% and an acceptance probability of at least 95% should be applied. In case of characteristics indicated by B, the sample size for the assessment of uniformity may be reduced to 200 plants. In case of a sample size of 200 plants, 27 off-types are allowed. In case of a sample size of 100 ear-rows, plants or parts of plants, 15 off-types are allowed.”
5.3	- to add Char. 11 “Stem: density of hairiness of neck” - to check whether to add Char. 23 “Ear: length” - to delete Char. 18 “Ear color”
6.5	A to read “sample size of 100 plants/parts of plants/ear rows”
Table of Chars.	to add new char. after Char. 6: - to read “Flag leaf: glaucosity of blade (lower side)” - to have 9 notes from “very weak” to “very strong” - growth stage to be indicated as 55-65 - to be indicated as VG/B general remarks: - to check whether to sort characteristics by growth stages - to check example varieties (harmonized sets of spring and winter varieties)
Char. 4	- to be indicated as VG/B - to check growth stage - state 1 to read “absent or very weak”
Char. 7	- to check whether to have states “absent or weak”, “medium”, “strong” - to check whether to have notes 1 to 3 or 1 to 5 - to check uniformity variation
Char. 8	to check whether to be deleted
Char. 11	to have states from “sparse” to “dense”

Char. 15	to check whether to reduce scale to 1 to 3 or 1 to 5
Char. 18	to check whether to be deleted
Char. 19	to be indicated as MS/B and VG/B
Char. 20	to be indicated as VG/B
Char. 21	to be deleted
Chars. 22, 23	to be indicated as MS|B and VG|B
Char. 24	to check growth stage (submitted or harvested seed?) and whether to move it to the beginning of the table of characteristics
Ad. 2	first sentence to read "The growth habit should be assessed from the attitude of the leaves and tillers."
Ad. 4	to have same growth stage as in Char. 4
Ad. 15	to be improved according to changes to Char. 15
Ad. 20	to improve quality of illustrations
9.	to add reference for Zadoks decimal code for cereals
TQ 4.2	to be completed
TQ 6.	to be completed

Variety denominations

73. The TWA considered document TWP/2/6.

74. The TWA 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.

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

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

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

78. The TWA noted that the fifth meeting of the WG-DEN would be held in Geneva, on October 30, 2018.

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

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

80. The TWA considered document TWP/2/13 and noted the results of a 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.

Information and databases

(a) UPOV information databases

81. The TWA considered document TWP/2/4.

GENIE database

82. The TWA 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.

83. The TWA 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).

84. The TWA 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.

85. The TWA considered the proposal to amend codes for ZEAAA, as set out in paragraph 23 of document TWP/2/4. The TWA noted that the information on the type of maize varieties (popcorn, sweet corn) was useful for the grouping of varieties and organization of the growing trials. The TWA agreed that information on the type of maize varieties should remain in the database and should continue to be provided by data contributors.

86. The TWA agreed with the deletion of the UPOV codes MUCUN_PRU_ATE, MUCUN_PRU_COC and MUCUN_PRU_DEE and the creation of the new UPOV Code MUCUN_PRU_UTI (*Mucuna pruriens* (L.) DC. var. *utilis*) covering the synonym species *M. aterrima*, *M. cochinchinensis* and *M. deeringiana.*

87. The TWA agreed with the proposal to rectify the UPOV Code for the species *Sesbania sesban* (L.) Merr. from "SENNA_SES" to read "SESBA_SES".

PLUTO database

88. The TWA 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.

89. The TWA noted that the WG-DEN, at its fourth meeting, held in Geneva on October 27, 2017, had agreed that matters under agenda item 5 "Expansion of the content of the PLUTO database" would be considered at a later meeting.

(b) Variety description databases

90. The TWA considered document TWP/2/2.

91. The TWA noted the report on presentations made on variety description databases containing molecular information during the BMT and the TWC, at their sessions in 2017.

(c) Exchange and use of software and equipment

92. The TWA considered document TWP/2/5.

Document UPOV/INF/16 "Exchangeable Software"

93. The TWA 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.

94. The TWA 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"

95. The TWA 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".

96. The TWA 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

97. The TWA 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 TWA noted the developments concerning UPOV PRISMA.

Recommendations on draft Test Guidelines

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

98. The TWA agreed that the following draft Test Guidelines should be submitted to the TC for adoption at its fifty-fourth session, to be held in Geneva on October 29 and 30, 2018, on the basis of the following documents and the comments in this report:

Subject	Relevant document(s)
*Castor Bean (*Ricinus communis* L.)	TG/RICIN(proj.4)
*Oats (*Avena sativa* L. & *Avena nuda* L.) (Revision)	TG/20/11(proj.4)
*Quinoa (*Chenopodium quinoa* Willd.)	TG/CHENO(proj.5)

(b) Test Guidelines to be discussed at the forty-eighth session

99. The TWA agreed to discuss the following draft Test Guidelines at its forty-eighth session:

Ginseng (*Panax ginseng* C.A. Mey) (Revision)
*Red Clover (*Trifolium pratense* L.) (Revision)
Rice (*Oryza sativa* L.) (Revision)
Rye (*Secale cereale* L.) (Revision)
Soya Bean (*Glycine max* (L.) Merrill) (Revision)
Sunflower (*Helianthus annuus* L.) (Revision)
Tea (*Camellia sinensis* (L.) Kuntze) (Revision)
Timothy (*Phleum pratense* L.) (Revision)
Triticale (x*Triticosecale* Witt.) (Revision)

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

(c) Possible Test Guidelines to be discussed in 2020

101. The TWA agreed that it should consider the development or revision of Test Guidelines for the following at a future session:

Species	Basic Document(s)
Finger millet (*Eleusine coracana* (L.) Gaertn.)	New
Rape Seed (*Brassica napus* L. *oleifera*)	TG/36/6 Corr.

* Indicates possible final draft Test Guidelines

Date and place of the next session

102. At the invitation of Uruguay, the TWA agreed to hold its forty-eighth session in Montevideo, Uruguay, from September 16 to 20, 2019, with the preparatory workshop on the afternoon of September 15, 2019.

Future program

103. The TWA agreed 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. Information and databases
   (a) UPOV information databases (document to be prepared by the Office of the Union)
   (b) Variety description databases (document to be prepared by the Office of the Union and documents invited)
   (c) Exchangeable software (document to be prepared by the Office of the Union)
   (d) Electronic application systems (document to be prepared by the Office of the Union)
5. Variety denominations (document to be prepared by the Office of the Union)
6. Molecular techniques (documents to be prepared by the Office of the Union, European Union, France, United States of America and documents invited)
7. TGP documents (documents to be prepared by the Office of the Union)
8. Experiences with new types and species (presentations invited)

   - General approaches to new species (document to be prepared by the Czech Republic and documents invited)
9. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee (if appropriate)
10. Discussion on draft Test Guidelines (Subgroups)
11. Recommendations on draft Test Guidelines
12. Guidance for drafters of Test Guidelines
13. Date and place of the next session
14. Future program
15. Adoption of the Report on the session (if time permits)
16. Closing of the session

Visit

104. On May 24, 2018, the TWA visited the Tea Research Institute (TRI) of the Kenya Agricultural & Livestock Research Organization (KALRO), located in Kericho, Kenya. Kericho is one of the main tea production areas in Kenya for local consumption and export markets. The TWA was received by Dr. Samson Kamunya, Centre Director, TRI-KALRO, and received a presentation on “KALRO at a Glance”, a copy of which is reproduced in Annex IV to this report. The TWA noted that TRI-KALRO participated in breeding programs to develop new varieties of tea with different domestic and foreign breeders. The TWA noted that TRI-KALRO anticipated the filing for protection of 5 new varieties of tea to be released in 2018. The TWA visited the collection of varieties and breeding trials of new varieties of tea.

105. The TWA adopted this report at the end of the session.

[Annex I follows]

ANNEX I

LIST OF PARTICIPANTS

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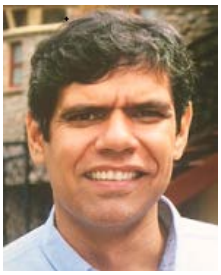

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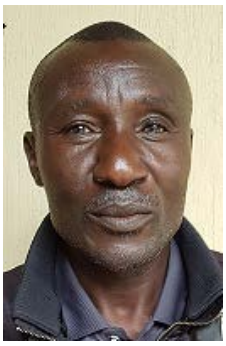

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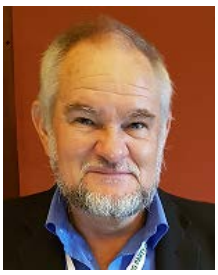

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[Annex II follows]

ANNEX II

WELCOME ADDRESS MS. ANNE ONYANGO, AGRICULTURAL SECRETARY, MINISTRY OF AGRICULTURE AND IRRIGATION, STATE DEPARTMENT OF CROPS AND DEVELOPMENT, ON BEHALF OF MR. RICHARD LESIYAMBE, PERMANENT SECRETARY, MINISTRY OF AGRICULTURE AND IRRIGATION, STATE DEPARTMENT OF CROPS AND DEVELOPMENT

Managing Director, KEPHIS – Dr. Esther Kimani,
Chairman of UPOV Technical Working Party for Agricultural Crops – Ms. Cheryl Turnbull,
Representative of the UPOV Office - Mr. Leontino Taveira,
Delegates from various UPOV members,
Distinguished guests,
Ladies and gentlemen

I am delighted to be here today at this important meeting that will impact not only Kenya but the world as a whole. I want to recognize delegations from the UPOV office, Australia, Brazil, Canada, Czech Republic, Denmark, European Union, France, Finland, Germany, Italy, Japan, Mexico, the Netherlands, New Zealand, Republic of Korea, Slovakia, South Africa, Spain, Sweden, United Kingdom, United Republic of Tanzania United States of America, and welcome you to our beautiful country.

Ladies and Gentlemen, plant variety protection is an important subject for the improvement of plant varieties, resultant income generation, strengthening of economies and boosting of food security. Kenya joined UPOV in 1999 and has since then issued grants of plant breeders' rights (PBR) for different crop varieties ranging from agricultural crops to ornamental plants. The Plant Variety Protection Office in Kenya was established in 1997 and to date the office has received about 1630 applications for Plant Breeders Rights in Kenya. Sixty eight percent of these applications are from foreign breeders. The foreign applications are predominantly for varieties of ornamental plants, most of which are currently produced in Kenya for export market. This demonstrates the importance of the office to investment in the agricultural sector. In addition, the operationalization of the Plant Variety Protection Office has encouraged breeders to introduce elite plant varieties desired by the consumers, on the Kenyan market for farmers to grow for export. There have also been increased collaborations between foreign and local investors and researchers, contributing to the building of our national capacity in the sector. These underscore the importance of plant variety protection to our national growth and development.

Ladies and Gentlemen, studies have shown the following developments since the introduction of Plant Variety Protection in Kenya:

a) Increased investment in breeding and commercialization of new varieties;
b) Increased collaboration between local & foreign breeders and international institutions;
c) Increased number and range of improved varieties available to growers;
d) Enhanced access to internationally bred varieties; and
e) Generation of foreign exchange and employment in the horticultural sector due to introduction of these new varieties.

One of the most recent achievements is the development of purple tea varieties, which have diverse health benefits.

All this has been made possible by the implementation of a plant variety protection system, facilitated by the existence of a legal framework on plant variety protection (PVP) through the Seeds and Plant Varieties Act (Cap 326) of the Laws of Kenya. One of the primary objectives of the Act is "to provide for the grant of proprietary rights to persons breeding or discovering new varieties".

This Act has been revised in 1977, 1991, 2002 and 2012 to take into account developments in the international seed industry and trade. The amendment of 2012 was mainly aimed at making the Kenyan law to conform to the UPOV Act of 1991, to which Kenya acceded in 2016.

Membership to UPOV has been of much benefit to Kenya. Staff have benefited from capacity building through training and sharing of experiences with other UPOV member countries. I particularly want to recognize the role played by UPOV in facilitating these trainings and sharing of experiences. Further, membership to UPOV has made it possible for cooperation in DUS testing with UPOV members notably, the European Union, Netherlands, Israel, New Zealand, South Africa, Japan, Republic of Korea and Germany. This cooperation has made the process of granting of plant breeders' rights more efficient and less costly.

Since joining UPOV, Kenya has participated at different technical working parties and other UPOV fora. This has enabled Kenya to be part of the decision making process especially in the development of technical guidelines, which are very important in the examination of new plant varieties.

Ladies and Gentlemen, I would like to extend my gratitude to UPOV, the Ministry of Agriculture and Irrigation, Kenya Plant Health Inspectorate Service (KEPHIS), Syngenta Foundation, Monsanto and all participants for making this activity a reality.

Once again, I would again like to take this opportunity to welcome you to Kenya.

Thank you.

[Annex III follows]

ANNEX III

PRESENTATION BY MR. ISAAC MACHARIA, GENERAL MANAGER, KEPHIS, ON BEHALF OF MS. ESTHER KIMANI, MANAGING DIRECTOR, KEPHIS, ON PLANT VARIETY PROTECTION IN KENYA

PLANT VARIETY PROTECTION IN KENYA

1

Presented during:

Upov Technical Working Party For Agricultural Crops
21st to 25th May, 2018
Enashpai Hotel, Naivasha, Kenya

Isaac Macharia (Ph.D),
General Manger, Phytosanitary Services

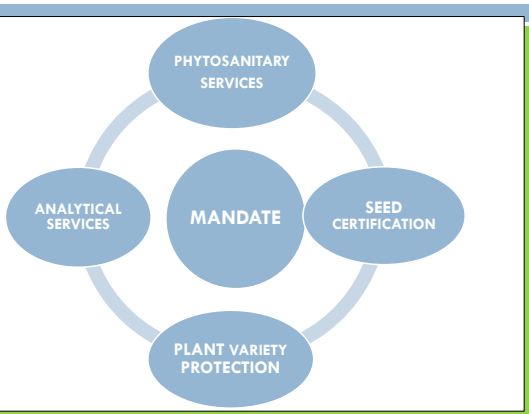
Kenya Plant Health Inspectorate Service
(*www.kephis.org*)

Preview

1. About KEPHIS
2. PVP Legislative background
3. Status of PBR Applications in Kenya
4. Impact of Plant Variety Protection in Kenya
5. PBR Enforcement
6. Going Forward

- **KEPHIS is a state corporation offer regulatory services in agricultural sector.**
- **It is the official National Plant Protection Organisation (NPPO) of Kenya.**
- **Signatory to the IPPC**
- **Member of UPOV and** acceded to UPOV under the 1978 Convention in May 1999 and the 1991 Convention in May, 2016

SUMMARY OF KEPHIS MANDATE



Phytosanitary service

- **Import inspections and regulation** prevention of the introduction of harmful foreign pests, diseases, weeds.
- **Export certification** to ensure we meet our international market requirements (facilitate trade

Field inspection of flowers

Phytosanitary Inspection of Exports

Virus identification

8

Virus cleaning and multiplication

Nematode identification

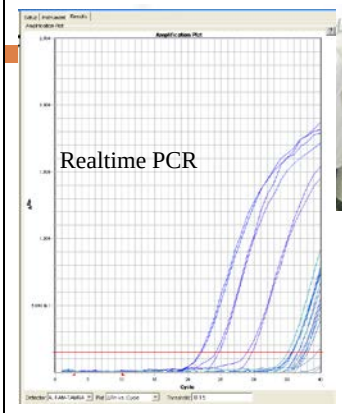
10

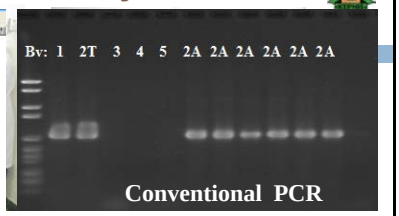
Molecular Laboratory

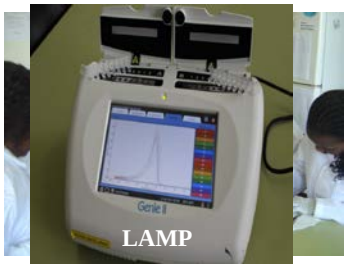
11

Diagnostics equipment in the molecular lab and analysts doing nucleic acids extraction

Molecular Laboratory







Analytical Chemistry Laboratory

13

Seed certification

Laboratory seed testing

Variety Protection

DUS Testing

National Performance Trials (VCU)

PVP Legislative Framework

18

- Legislation for protection of plant varieties in Kenya is contained in the Seeds and Plant Varieties Act (1972), which became operational in 1975 and was revised in 1991 and amended in 2016
- Official regulations to guide the implementation of PVP were finalised and gazetted in the supplementary issue of the Seeds and Plant Varieties Act (Cap 326) of November 1994
- The office to administer the PVP was established in 1997 and has functioned under KEPHIS since 1998
- Kenya acceded to UPOV under the 1978 Convention in May 1999 and the 1991 Convention in May, 2016.

Status of Plant Variety Protection

- A total of 1639 applications for PVP received by April 2018
  - Local (Kenyan) = 31.21% applications
  - Foreign = 68.79% applications
- Local applicants are from:
  - Public institutions = 80.55%
  - Private institutions =19.45 %
- Out of the total applications
  - Food crops = 25.69%
  - Cash crops = 74.31%
  - Forest Trees (Eucalyptus) = 0.49%
  - 53 grants in 2016 - 2018

Status of Plant Variety Protection

20

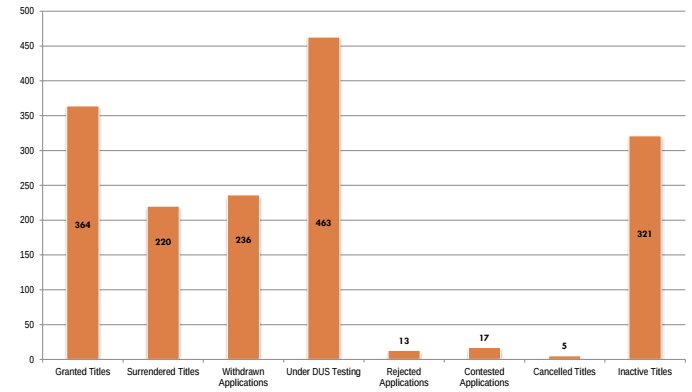
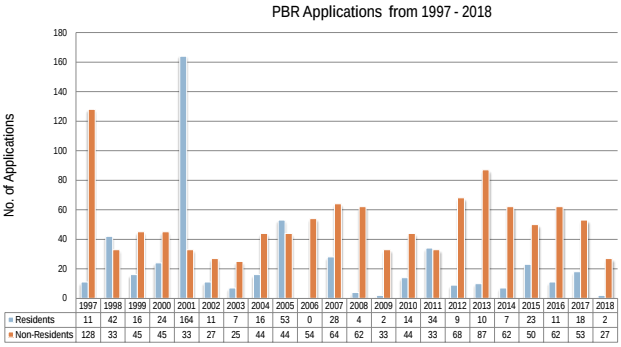


Table 1. Distribution of PVP Applications by Country

Country	% of Applications
Netherlands	40.48%
Kenya	31.07%
Germany	10.87%
France	7.08%
Israel	1.47%
U.S.A.	1.47%
Japan	1.28%
Australia	1.10%
Others	5.19%
Total	**100.00%**

Number of PBR applications per Year



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Residents	11	42	16	24	164	11	7	16	53	0	28	4	2	14	34	9	10	7	23	11	18	2
Non-Residents	128	33	45	45	33	27	25	44	44	54	64	62	33	44	33	68	87	62	50	62	53	27

Figure 1: Distribution of PVP Applications for Agricultural Crops in 2017

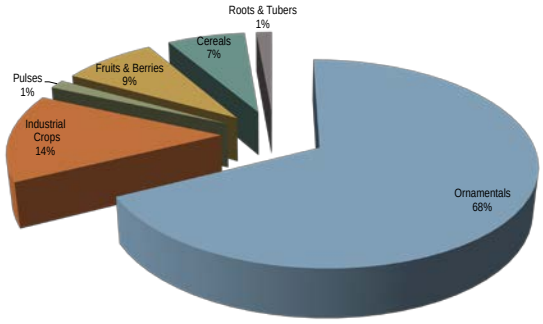


Figure 2. Distribution of Applications for Horticultural Crops in Kenya

Crop	%
Others	12.77%
Roses	79.79%
Fruits	6.77%
Vegetables	0.68%

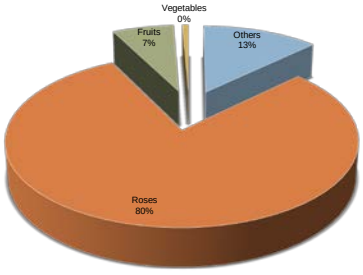
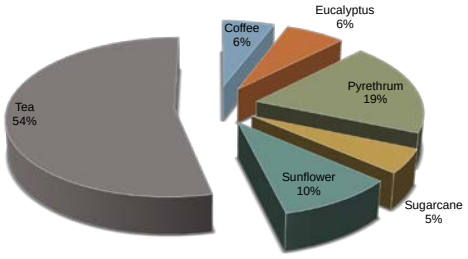


Figure 2. Distribution of Applications for Industrial Crops in Kenya

Variety	%
Coffee	5.79%
Eucalyptus	6.61%
Pyrethrum	19.01%
Sugarcane	4.96%
Sunflower	9.92%
Tea	53.72%



Impact of Plant Variety Protection in Kenya

- Agriculture sector accounts for 22% of GDP.
- The national GDP from the horticulture sub-sector is 3% with export of 261,200 Mtons valued at KES 101 Billion
- The floriculture industry has recorded growth in volume and value of cut flowers exported every year.
- According to Kenya National Bureau of Statistics in 2017, the floriculture industry exported 133, 700 Mtons valued at Kshs 70.8 billion.
- Plant Variety Protection enables breeders to sell their elite varieties in Kenya since they are protected

Kenya National Bureau of Statistics 2017

YEAR	CUT FLOWERS		FRUITS		VEGETABLES		TOTAL	
	Volume '000 Tonnes	Value KSh Billion	Volume '000 Tonnes	Value KSh Billion	Volume '000 Tonnes	Value KSh Billion	Volume '000 Tonnes	Value KSh Billion
2012	108.3	65.0	31.1	4.7	66.4	20.2	205.7	89.9
2013	105.6	56.0	31.1	4.8	77.2	22.9	213.8	83.7
2014	114.8	59.9	35.1	5.4	70.3	18.8	220.2	84.1
2015	122.8	62.9	46.2	6.6	69.7	20.9	238.7	90.4
2016*	133.7	70.8	48.7	7.3	78.8	23.4	261.2	101.5

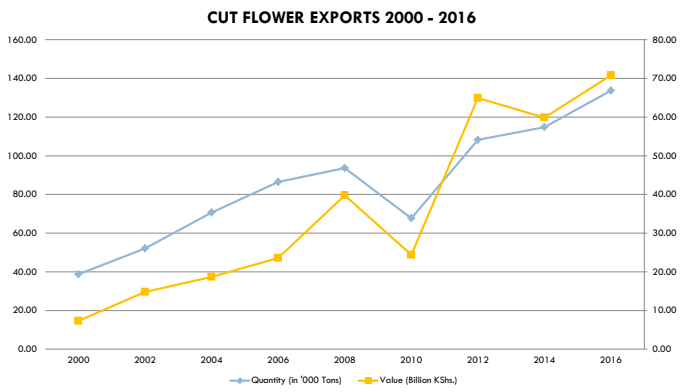
Source: Agriculture and Food Authority, Horticulture Crops Directorate

Impact of PVP in Kenya

Cut Flower Industry

- Kenya leads in the export of rose cut flowers to the European Union (EU) with a market share of about 38%.

Impact of PVP in Kenya



Impact of PVP in Kenya

Employment creation

- It is estimated that over 500,000 people (including over 90,000 flower farm employees) depend on the floriculture industry.

Plant Breeder's Rights Enforcement

31

- The enforcement of rights is by the owner of the rights.
- The Act has provision for the Plant Breeder whose rights are infringed to seek remedy in the courts of law by means of damages, injunction, account or otherwise.
- The Act also provides for Plant and Seed Tribunal to determine any dispute arising from PVP.
- Additionally, KEPHIS being the designated Authority for phytosanitary, seed certification and PVP matters, has the added advantage of helping the enforcement of PBR through the licensing and certification process

Going Forward

- Setting up of facilities to test ornamental varieties (which form the bulk of PVP applications)
- Review of PBR Regulations to facilitate implementation of reviewed aspects of the Seed Act such as the optional exemption.
- Increase stakeholder awareness on plant variety protection.
- Kenya will continue to support development of plant variety protection in the region.

[Annex IV follows]

ANNEX IV

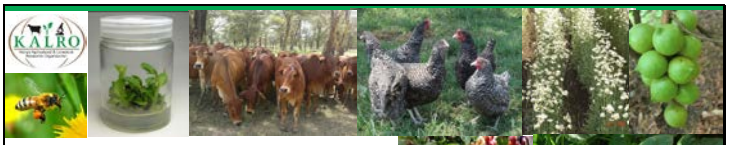
PRESENTATION BY DR. SAMSON KAMUNYA, CENTRE DIRECTOR, TRI-KALRO, ON "KALRO AT A GLANCE"

Kenya Agricultural & Livestock Research Organization

KALRO AT A GLANCE

Presentation to UPOV Visitors to TRI on 24th May, 2018

Samson Kamunya, PhD
Centre Director
Tea Research Institute



About KALRO

This is an umbrella body formed after merging the following former organizations:-

1. **Kenya Agricultural Research Institute (KARI)**
2. **Tea Research Foundation (TRF)**
3. **Coffee Research Foundation (CRF)**
4. **Kenya Sugar Research Foundation (KESREF)**

KALRO's mandate is to:

- **Promote, streamline, co-ordinate and regulate research in crops, livestock, genetic resources, biotechnology and animal diseases**
- **Expedite equitable access to research information, resources and technologies and promote the application of research findings and developed technologies in the field of agriculture and livestock**

KALRO's Vision & Mission

Vision -"Excellence in agricultural and livestock research towards transformed livelihoods"

Mission -"To conduct agricultural research through application of science, technology and innovation to catalyze sustainable growth and development in agriculture and livestock product value chains"

Functions of KALRO

- Development of knowledge, information and technologies/innovations that enhance agricultural productivity
- To generate Socio-economic information that support agricultural product value chains
- To undertake marketing research and policy analysis

KALRO 17 Research Institutes

Livestock Research Institutes	Crops Research Institutes	Cross-cutting Research Institutes
1. Dairy	1. Food Crops	1. Bio-Technology
2. Goats and Sheep	2. Horticulture	2. Genetic Resources
3. Non Ruminants	3. Tea	3. Arid & Rangelands Resources
4. Beef	4. Coffee	4. Mechanization
5. Apiculture	5. Sugar	
6. Veterinary	6. Industrial Crops	
	7. Miraa	

Institutes & Centres

The 17 Institutes, 51 Centres & Sub-centres

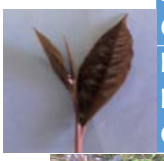
- **Strategically located in the country to enable KALRO meet farmers demands**
- **On-farm, adaptive research and outreach**
- **2713 staff (548 Scientists)**

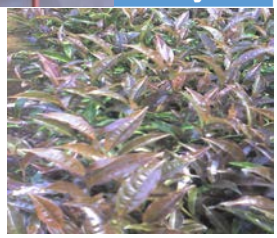
Tea Research Institute

Research Themes

- **Crop Improvement and Protection**
- **Natural Resources Management and Agro-Biodiversity**
- **Tea Processing, Product Diversification and Value Addition**
- **Knowledge, Information Management and Outreach**

Centers
Kericho County*
Kangaita, Kirinyaga County





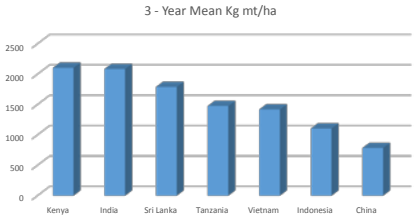
OVERVIEW: Kenya Tea Industry

- Tea is produced in 52 countries in the world which comprise of mainly tropical and sub-tropical countries;
- In Kenya it is grown at attitudes ranging from 1500 to 3000m;
- Kenya is the third largest producer of tea in the world after China and India; world's largest exporter of high quality black CTC tea;
- Tea cultivation and manufacturing: 18 of Kenya's 47 counties and impacts a large proportion (10%) of Kenya's over 40 million people;
- Over 60% of Kenyan tea is grown by smallholders, managed by KTDA;
- It is the largest single export commodity and major foreign exchange earner for Kenya;
- In 2017 for example, Kenya exported 415.7 million kilograms of made tea, which resulted to over KES 129 (**USD 1.26b**) billion foreign earnings. This represents about **26%** of the total export earnings, and about **4%** of Kenya's GDP.

KENYA TEA EXPORT DESTINATIONS IN 2017

Global Performance of the Tea Industry

- Although Kenya is ranked third in annual tea production after China and India with tea produced in Kenya accounting for about 10% of the world production and about 24% of the export share, productivity is highest in Kenya.
- This is attributable to deployment of appropriate Research and Development outputs in the production value chain and favorable weather.

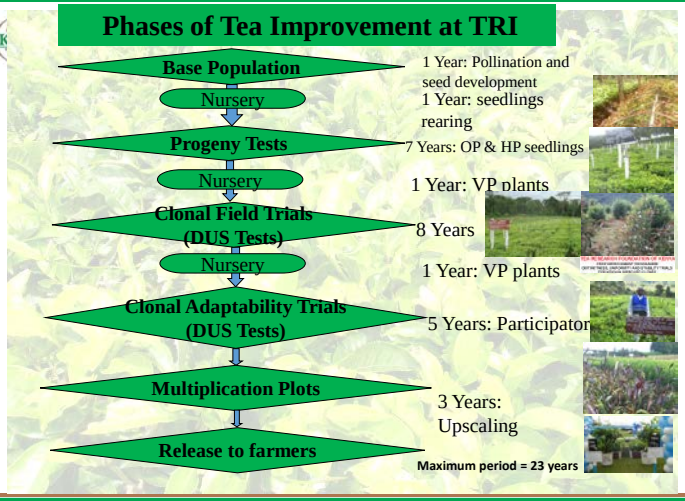


Tea productivity (KgMT/ha/yr) in major producing countries in 2016
(Source: International Tea Committee: Annual Bulletin of Statistics – 2017)

Introduction – Tea Improvement

- The cultivated taxa comprise of three groups and their hybrids
  - ➢Assam type that has the biggest leaves
  - ➢China type with the smallest leaves and
  - ➢Cambod type with leaves size in-between Assam and China type
- Tea is propagated either through seeds or cuttings
- Seed-grown plants are distinct genotypes and tend to show high degree of variability
- Thus, the uniformity and sustainability (stability) in yield and quality is not attainable
- Elite varieties are vegetatively propagated using single whole-leaf cuttings

Phases of Tea Improvement at TRI



SOME SPECIALTY TEAS

KEY: (1) white, (2) green orthodox tea (3) purple orthodox tea (4) yellow orthodox (5) black orthodox (6) brick-pu-erh (7) pu-erh orthodox tea, (8) Black CTC tea

Challenges Associated with Kenyan Tea Industry

- There still exists a wide gap in productivity per unit area between smallholders and large estate growers;
- Global over-production of black CTC teas leading to declining auction prices;
- High cost of inputs and labour resulting in poor net income often below break-evening point.

Challenges Associated with Kenyan Tea Industry

- **Climate change**: Extreme weather events due to global warming pose serious threats to the socio economic development of tea growing counties.
- Changes in weather patterns particularly the increasing drought, frost and hailstorm incidences have presented more challenges to farmers, which manifest in emergence of new diseases and pests and increasing severity of existing ones.

A pile of hailstones that occurred in Kericho (outside TRI offices)

Effects of hail on tea.

It takes up to 3 months for tea to recover from hail damage

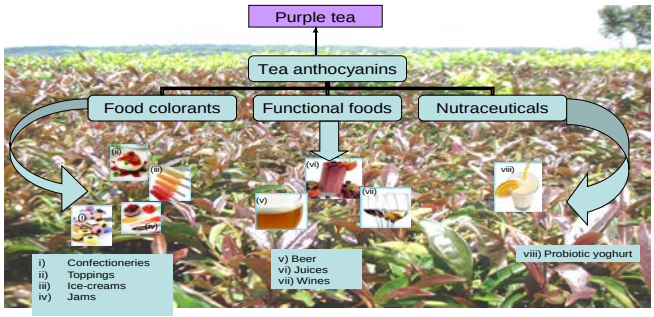
Opportunities in Kenyan Tea Industry

- Exploration of markets for Kenyan specialty teas, while maintaining the market share for black CTC tea. **Consumers need to try high quality Kenya orthodox purple, green, oolong, white and black teas.**
- Tea is a health drink and there is need to persuade more people to drink it within and outside the country for betterment of their health.
- Availability of improved novel varieties at TRI with high functional components such as specific **catechins, flavanols, anthocyanins, theanine, b-carotene, caffeine-free/low/high, theobromine and tea seed oil** leading to processing of high value diversified tea products.
- Assist the Kenyan tea growers mitigate and adapt to the impacts of climate change; TRI has adopted integrated breeding strategies in order to develop novel tea varieties tolerant to drought, frost, hail damage and emerging pests and diseases.

TEA SEED OIL

VALUE ADDITION & PRODUCT DIVERSIFICATION

POTENTIAL FOR TEA PRODUCT DIVERSIFICATION USING ANTHOCYANIN RICH TEA VARIETIES



Equipping of TRI R4D Factory

- **Exploring partnership in equipping the TRI R4D Factory to conduct cutting edge research on technologies for diversification of value added tea products with increased competitiveness in the global tea arena.**

RECENTLY RELEASED CULTIVARS FOR HIGH VALUE DIVERSIFIED TEA PRODUCTS

TRFK 371/8 | TRFK 306 | TRFK 597/1 | TRFK 704/2

"To safeguard your health, take a cup of Kenyan tea every two hours without sugar and milk"

THANK YOU

[Annex V follows]

ANNEX V

LIST OF LEADING EXPERTS

DRAFT TEST GUIDELINES TO BE SUBMITTED TO THE TECHNICAL COMMITTEE IN 2018

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

before July 6, 2018

Species	Basic Document(s)	Leading expert
*Castor Bean (*Ricinus communis* L.)	TG/RICIN(proj.4)	Mr. Adriaan de Villiers (ZA)
*Oats (*Avena sativa* L. & *Avena nuda* L.) (Revision)	TG/20/11(proj.4)	Mr. Antonio Escolano (ES)
*Quinoa (*Chenopodium quinoa* Willd.)	TG/CHENO(proj.5)	Mr. Erik Lawaetz (DK)

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWA/48
(* indicates possible final draft Test Guidelines)

Guideline date for Subgroup draft to be circulated by Leading Expert: **June 7, 2019**
Guideline date for comments to Leading Expert by Subgroup: **July 5, 2019**

New draft to be submitted to the Office of the Union
before August 2, 2019

Species	Basic Document	Leading expert	Interested experts (countries/organizations) [2]
Ginseng (*Panax ginseng* C.A. Mey) (Revision)	TG/224/2(proj.2)	Mr. Wonsig Lee (KR)	JP, ISF, Office
*Red Clover (*Trifolium pratense* L.) (Revision)	TG/5/8(proj.3)	Mr. Donovan Sonnenberg (ZA)	AR, AU, BR, CA, CZ, DE, DK, ES, FI, FR, GB, IT, JP, NZ, PL, QZ, RO, SK, TZ, UY, ZA, CLI, ESA, ISF, Office
Rice (*Oryza sativa* L.) (Revision)	TG/16/9(proj.2)	Mr. Kohei Imamura (JP)	AR, AU, BR, CN, ES, FR, IT, KE, KR, MX, QZ, TZ, US, CLI, ESA, ISF, Office
Rye (*Secale cereale* L.) (Revision)	TG/58/6	Ms. Beate Rücker (DE)	BR, CA, CZ, DK, ES, FI, FR, GB, IT, KR, NZ, PL, QZ, SK, ZA, CLI, ESA, ISF, Office
Soya Bean (*Glycine max* (L.) Merrill) (Revision)	TG/80/7(proj.4)	Mr. Alberto Ballesteros (AR)	AR, AT, AU, BR, CA, CN, CO, ES, FR, HU, IT, JP, KR, NL, PL, PY, QZ, SK, US, UY, VN, ZA, CLI, ESA, ISF, Office
Sunflower (*Helianthus annuus* L.) (Revision)	TG/81/7(proj.1)	Mr. Zoltan Csuros (HU)	AU, AR, BR, CA, CN, DE, ES, FR, IT, JP, KE, QZ, RO, SK, ZA, ISF, ESA, CLI, Office
Tea (*Camellia sinensis* (L.) Kuntze) (Revision)	TG/238/2(proj.1)	Mr. Simeon Kibet Kogo (KE)	AR, AU, BR, CN, KR, JP, TZ, US, Office
Timothy (*Phleum pratense* L.) (Revision)	TG/34/6	Mr. Lubomir Basta (SK)	CA, CZ, DE,FI, FR, IT, JP, NL, NZ,QZ,ESA, ISF, Office
Triticale (x*Triticosecale* Witt.) (Revision)	TG/121/4(proj.1)	Mr. Tanvir Hossain (AU)	AR, AT, BR, CA, CZ, DE, DK, ES, FR, GB, HU, IT, KE, KR, NL, NZ, PL, QZ, RO, SK, CLI, ESA, ISF, Office

[2] for name of experts, see list of participants

DRAFT TEST GUIDELINES TO POSSIBLY BE DISCUSSED IN 2020

Species	Basic Document(s)
Finger millet (*Eleusine coracana* (L.) Gaertn.)	New
Rape Seed (*Brassica napus* L. *oleifera*)	TG/36/6 Corr.

[End of Annex V and of document]