

Enlarged Editorial Committee

TC-EDC/Mar18/14

Geneva, March 26 and 27, 2018

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THE COMBINED-OVER-YEARS UNIFORMITY CRITERION (COYU)

Document prepared by the Office of the Union

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EXECUTIVE SUMMARY

1. The purpose of this document is to report on developments concerning the improved method of calculation of the Combined-Over-Years Uniformity Criterion (COYU). The current method of calculation of the COYU criterion is described in document TGP/8 “Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability”.

2. The COYU Criterion is used for the assessment of uniformity with quantitative characteristics, when observations are made on a plant basis over two or more cycles and when there is quantitative variation between plants of a variety.

3. The TC-EDC is invited to:

(a) note that the TWF suggested to conduct a survey among members of the Union to assess the number of authorities using the COYU method for each crop sector, in order to assess how best to present information in relation to COYU to the TWPs;

(b) note that the TWC agreed to invite the expert from the United Kingdom to report on further improving the software using the new method of calculation of COYU, at its thirty-sixth session; and

(c) propose to the TWC to formulate a proposal for consideration by the TC, at its fifty-fourth session, on the new method of calculation of COYU.

4. The structure of this document is as follows:

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5. The following abbreviations are used in this document:

- TC: Technical Committee
- TWA: Technical Working Party for Agricultural Crops
- TWC: Technical Working Party on Automation and Computer Programs
- TWF: Technical Working Party for Fruit Crops
- TWO: Technical Working Party for Ornamental Plants and Forest Trees
- TWPs: Technical Working Parties
- TWV: Technical Working Party for Vegetables

BACKGROUND

6. The background to this matter is provided in document TC/53/16 "Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, Section 9: The Combined-Over-Years Uniformity Criterion (COYU)".

DEVELOPMENTS IN 2017

Technical Committee

7. At its fifty-third session, the TC considered document TC/53/16 "Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, Section 9: the Combined-Over-Years Uniformity Criterion (COYU)" (see document TC/53/31, paragraph 111).

8. The TC noted that (see document TC/53/31, paragraph 112):

(a) the Office of the Union had issued UPOV Circular E-16/098 to invite UPOV members' experts to provide to the United Kingdom, by May 27, 2016, data sets including at least 100 candidate varieties, with a possibility that data for those 100 varieties could be derived from several years;

(b) the TWC had received a report by an expert of the United Kingdom that a data set on red fescue had been submitted by Slovakia and that Denmark had agreed to submit a data set on spring and winter canola later in 2016;

(c) the TWC had received offers from China and France to submit data sets on maize and fescue, respectively;

(d) the TWC had agreed to invite the expert from the United Kingdom to report on progress during the thirty-fifth session of the TWC;

(e) the TWO had noted that COYU was not commonly used for DUS examination of ornamental plants;

(f) the TWV had received offers by the experts from France and the United Kingdom to provide data on pea and field pea, respectively;

(g) the TWA had received a report by the expert from Denmark that the software provided by the United Kingdom had been tested and that a data set on oilseed rape varieties would be provided to support the development of probability levels for the new method of calculation of COYU; and

(h) the expert from the United Kingdom had no new developments to report to the TC and would report on the progress of development of the new method of calculation of COYU to the TWC at its thirty-fifth session.

Comments by the Technical Working Parties

9. The TWA, the TWV, the TWO, the TWF and the TWC considered document TWP/1/13 "The combined-over-years uniformity criterion (COYU)". The TWC also considered document TWC/35/6 "Method of calculation of COYU: practical exercise, probability levels, extrapolation and software" and received a presentation by the United Kingdom, a copy of which is provided in document TWC/35/6 Add. (see documents TWA/46/10 "Report", paragraph 24; TWV/51/16, paragraph 34; TWO/50/14 "Report", paragraph 32; TWF/48/13 "Report", paragraphs 37 and 38; and TWC/35/21 "Report", paragraphs 81 to 84).

10. The TWA, the TWV, the TWO and the TWF noted the report on developments concerning the improved method of calculation of the Combined-Over-Years Uniformity Criterion (COYU), as set out in document TWP/1/13. The TWA noted that the expert from the United Kingdom would report on the progress of development of probability levels for the improved method of calculation of COYU to the TWC, at its thirty-fifth session.

11. The TWF agreed to suggest to the TC to conduct a survey among members of the Union to assess the number of authorities using the COYU method for each crop sector, in order to assess how best to present information in relation to COYU to the TWPs, especially when not relevant for the crop sector.

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

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

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

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

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

15. *The TC-EDC is invited to:*

(a) note that the TWF suggested to conduct a survey among members of the Union to assess the number of authorities using the COYU method for each crop sector, in order to assess how best to present information in relation to COYU to the TWPs;

(b) note that the TWC agreed to invite the expert from the United Kingdom to report on further improving the software using the new method of calculation of COYU, at its thirty-sixth session; and

(c) propose to the TWC to formulate a proposal for consideration by the TC, at its fifty-fourth session, on the new method of calculation of COYU.

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