

# Technical Working Party for Fruit Crops

TWF/56/3

## Fifty-Sixth Session

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## NUMBER OF GROWING CYCLES AND CONCLUDING EXAMINATION OF FRUIT CROPS

*Document prepared by an expert from Canada*

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

1. Purpose of this paper: to investigate possibilities to improve the standard wording mostly used in Test Guidelines in the fruit sector.

### BACKGROUND

2. Examination authorities face the continuous challenge to improve the cost efficiency of DUS testing procedures, taking into account the following recent developments:

- Recent case law in the UPOV world ('Nadorcott' case in the EU) underlines the difficulty for breeders to control material of their variety from unauthorized use during the application procedure, especially in the fruit sector. That procedure is particularly long in the fruit sector taking into account the need for the establishment of perennial crops.
- The turnover of varieties may be quicker in the future with the implementation of new technologies in the breeding process, the application process should adapt to make varieties quickly available to the market
- The DUS testing for fruits is particularly expensive taking into account its duration, this may constitute an impediment to the release of new varieties.

3. One of the core reasons for the creation of UPOV was to support international cooperation. Therefore, during TWP meetings, it is crucial to include language that allows all authorities to function optimally in issuing plant variety protection.

4. The standard wording in Test Guidelines for many fruit species reads:

"3.1 Number of Growing Cycles

"3.1.1 The minimum duration of tests should normally be two independent growing cycles.

"3.1.2 The two independent growing cycles may be observed from a single planting, examined in two separate growing cycles.

"3.1.3 In particular, it is essential that the trees produce a satisfactory crop of fruit in each of the two growing cycles.

"3.1.4 The growing cycle is considered to be the duration of a single growing season, beginning with the dormancy period followed by bud burst (flowering and/or vegetative), flowering and fruit harvest and concluding when the following dormant period starts.

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

5. Taking into account the above, preliminary discussions during the 2024 session of TWF revealed that some authorities interpret paragraph 3.1.6 in such a way that if the competent authority can determine with certainty the outcome of the test, less than two independent growing cycles may be necessary.

6. However, paragraph 3.1.1 suggests that this interpretation deviates from normality and is below the minimum duration, generating some possible contradictions, as “normally” gives the impression that anything outside this timeline is “abnormal”. Many varieties can be successfully trialed and examined within one growing cycle. If a conclusion is reached after one growing cycle, one could interpret that paragraphs 3.1.1 and 3.1.6 are somehow in contradiction.

7. Additionally, we agree that the statement in 3.1.6 “*The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test.*” is located too far below the main sentence (3.1.1). We believe that 3.1.6 should be included as part of the guidance in 3.1.1 or, at the very least, placed immediately thereafter to give it more prominence within the guidance.

8. The agreed conclusion of discussions reads (see document TWF/55/9 “Report”, paragraph 37):

“37. The TWF agreed to invite the experts from France with the support of Canada, European Union, Germany, New Zealand, Republic of Korea and CIOPORA to develop proposals on the number of growing cycles for fruit crops, such as reducing the duration of tests to one growing cycle for fruit crops and the meaning of ‘a satisfactory crop of fruit’.”

#### As to the meaning of “a satisfactory crop of fruit”

9. What should be considered as a satisfactory crop of fruit needs to remain under the judgement of the examiner/competent authority. Some further guidance may be developed to that purpose, elaborating on the aspect of the quality of fruits and their quantity.

10. Quality covers in particular the context where for perennial plants, the phenotype of fruits may be affected by the juvenile stage of the trees or shrubs.

11. Within breeder cooperation testing systems, the variety is not “under examination” until the plants (candidate and reference(s)) are well established and a complete collection of data for the test guidelines can be completed. The data is collected, and the examination is conducted by a PBR examiner, when the plant/tree is of suitable maturity to observe all characteristics outlined in the test guidelines, i.e. the fruit is mature, therefore there is rarely, if ever, a requirement for a 2<sup>nd</sup> growing cycle. The candidate and similar variety(ies) are established plants and therefore one growing cycle is sufficient.

12. It is clear that observations necessitate the availability of a minimum number of fruits deemed to be representative of the variety, excluding for example fruits located at the top of the tree.

13. The requirement for a satisfactory crop of fruit may need to be more stringent if data is collected in one growing cycle compared to two growing cycles. For example, after only one year of establishment, apple trees may bear a significant number of fruits which may be considered satisfactory where observations could be confirmed during a second growing cycle. However, this may not be the case in the absence of this second growing cycle.

14. In some cases, trials are grown by breeders/experts of the candidate variety, and its most similar variety(ies), who are familiar with the expression of their characteristics under specific conditions in advance of the varieties being “under examination”. The DUS test is conducted by the breeder/expert and usually they already have trees of the candidate variety and similar varieties established in an orchard when they conduct the test. The breeder is generally knowledgeable of the new variety and its most similar varieties.

#### Possible options

15. A first option could be to use the first possibility of ASW 2 in fruit Test Guidelines (see document TGP/7 “Development of Test Guidelines”):

##### “ASW 2 (Chapter 3.1) – Number of growing cycles

##### “(a) Single growing cycle

“The minimum duration of tests should normally be a single growing cycle.”

“(b) Two independent growing cycles

“The minimum duration of tests should normally be two independent growing cycles.”

16. The wording in 3.1.2 would no longer be recommended (“*The two independent growing cycles may be observed from a single planting, examined in two separate growing cycles*”), while 3.1.3 would instead specify that a satisfactory crop of fruit is necessary during that growing cycle (“*In particular, it is essential that the trees produce a satisfactory crop of fruit in each of the two growing cycles*”).

17. Lastly, current guidance in 3.1.3 is pertinent to each growing cycle but there should be additional guidance on when to start the evaluation. For fruit crops, a useful physiological marker is time of first fruiting: “Testing of a variety should begin in the following growing cycle after trial trees have had at least one crop of fruit”. Such wording would allow testing on trees after first fruiting or on trees that have fruited for several years.

Final proposed wording for Test Guidelines of fruit species using ASW 2- Option (a) (similar to vegetatively propagated ornamentals)

18. Final proposed wording for Test Guidelines of fruit species using ASW 2- Option (a):

### 3.1 Number of Growing Cycles

3.1.1 The minimum duration of tests should ~~normally~~ be a single growing cycle.

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

3.1.3 In particular, it is essential that trees produce a sufficient quantity of fruit for testing purposes and are representative of the variety in any growing cycle. Testing of a variety should begin in the following growing cycle after trial trees have had at least one crop of fruit.

3.1.4 The growing cycle is considered to be the duration of a single growing season, beginning with the dormancy period, followed by bud burst (flowering and/or vegetative), flowering and fruit harvest and concluding when the following dormant period starts.

19. The proposed wording would trigger the following amendments to document TGP/7 “Development of Test Guidelines:

## ANNEX 1: TG STRUCTURE AND UNIVERSAL STANDARD WORDING

### 3. Method of Examination

#### 3.1 *Number of Growing Cycles*

The minimum duration of tests should normally be:

{ **ASW 2** (Chapter 3.1(.1)) – number of growing cycles }

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

{ **GN 8** (Chapter 3.1.2) – explanation of the growing cycle }

{ **ASW 3** (Chapter 3.1.2) – explanation of the growing cycle }

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

## ANNEX 2: ADDITIONAL STANDARD WORDING (ASW)

ASW 2 (Chapter 3.1) – Number of growing cycles

(a) *Single growing cycle*

“The minimum duration of tests should ~~normally~~ be a single growing cycle.”

(b) *Two independent growing cycles*

“The minimum duration of tests should normally be two independent growing cycles.”

ASW 3 (Chapter 3.1.2) – Explanation of the growing cycle

[...]

(d) *Fruit species*

In the case of Test Guidelines covering fruit species, the following sentence may be added in Chapter 3.1:

“In particular, it is essential that the [trees] / [plants] produce a ~~satisfactory crop~~ sufficient quantity of fruit for testing purposes and are representative of the variety in any in each of the two growing cycles. Testing of a variety should begin in the following growing cycle after trial trees have had at least one crop of fruit.”

20. *The TWF is invited to consider:*

(a) *the proposed duration of tests for fruit species to be one independent growing cycle, as set out in paragraph 18 of this document; and*

(b) *amending guidance in document TGP/7 “Development of Test Guidelines”, as set out in paragraph 19 of this document.*

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