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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

TECHNICAL WORKING PARTY ON AUTOMATION AND COMPUTER PROGRAMS

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POPULATION STANDARDS USED FOR ASSESSING UNIFORMITY BY OFF-TYPES ON THE BASIS OF MORE THAN ONE SAMPLE

Document prepared by experts from Germany, the United Kingdom and the Office of the Union

1. At its twenty-second session, held in Tsukuba, Japan, from June 14 to 17, 2004, the Technical Working Party on Automation and Computer Programs (TWC) agreed to produce a questionnaire to seek information on population standards used in the assessment of uniformity by off-types, in particular when tests from more than one year were used.

2. At the twenty-fifth session of the TWC, held in Romania, from September 3 to 6, 2007, the TWC discussed the draft questionnaire on off-types contained in document TWC/25/18. The TWC noted that the questionnaire was intended to address only situations where uniformity by off-types was assessed on the basis of more than one sample, or on a sub-sample of a single sample and agreed that the title of the questionnaire should be amended accordingly. The TWC agreed that the results of the questionnaire should be reviewed with the view to incorporating guidance in TGP/8, Part II, "I. The Method of Uniformity Assessment on the Basis of Off-Types".

3. The proposed draft questionnaire is presented in the Annex to this document.

[Annex follows]

ANNEX

Population standards used for assessing uniformity by off-types on the basis of more than one sample

1.1 Please complete the following tables and return to UPOV by e-mail to upov.mail@upov.int:

Country/Organization:	
Person completing the form	
Name:	
E-mail:	
Tel. No.:	
Fax No.:	

1.2 The acceptable number of off-types tolerated in samples of various sizes is often based on a fixed "population standard" and "acceptance probability". The "population standard" is the maximum percentage of off-types to be accepted if all individuals of the variety could be examined. The "acceptance probability" is the minimum probability of accepting a variety with the population standard of off-types.

1.3 The UPOV Test Guidelines recommend the population standard and acceptance probability and provide the maximum acceptable number of off-types for an appropriate sample size. In some cases, the proportion of off-types in a variety may be assessed in more than one sample (e.g. one growing cycle with more than one sample per growing cycle, one sample per growing cycle with two growing cycles, etc.). Some of the possible situations are described in document TGP/10 draft 7 Examining Uniformity, Section 6. Furthermore, in some cases, to examine uniformity in an efficient manner, a strategy of sequential sampling may be used. In cases where uniformity is assessed on the basis of more than one sample, clear decision rules need to be defined for the varieties concerned.

1.4 This survey is intended to collect information on how uniformity is assessed by off-types for such cases.

An example for wheat is given in the following table:

Country: XXXX	Species: Barley (*Hordeum vulgare* L. sensu lato) Test Guidelines: TG/19/10.
I - For the assessment of uniformity of characteristics observed on a sample size of 2000 plants or part of plants. Sample size: 2000 plants Population standard: 0.1 % Acceptance probability: 95 % Uniformity standard: the number of off-type plants or parts of plants should not exceed 5 in 2000.	
II - For the assessment of uniformity of characteristics observed on a sample size of 100 plants or part of plants Sample size: 100 plants or parts of plants Population standard: 0.1 % Acceptance probability: 95 % Uniformity standard: First step, 20 plants or parts of plants are observed. - No off-type plants in 20 plants = the variety is declared uniform. - More than 3 off-type plants = the variety is declared non uniform. - 1 to 3 off-type plants = go to second step Second step: further 80 plants or parts of plants are observed - 3 or less off-type plants in 100 (20 of step 1 + 80 of step 2) plants = the variety is declared uniform. - More than 3 off-type plants in 100 (20 of step 1 + 80 of step 2) plants = the variety is declared non uniform.	
Decision rule: A variety is accepted if, in 2 out of 3 years, the uniformity standard is met in all samples.	

[End of Annex and of document]