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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

COUNCIL

**Twenty-second Ordinary Session
Geneva, October 18 and 19, 1988**ADDENDUM TO THE
PROGRESS REPORT ON THE WORK OF THE TECHNICAL COMMITTEE AND
THE TECHNICAL WORKING PARTIESprepared by the Office of the Union

WORKSHOP ON THE USE OF NEW TECHNOLOGY IN THE EXAMINATION OF NEW VARIETIES

1. On September 27 and 28, 1988, at the National Institute of Agricultural Botany (NIAB) at Cambridge, United Kingdom, a Workshop on the Use of New Technology in the Examination of New Varieties was held jointly by UPOV and the British authorities. It comprised two sessions dealing with Biochemistry, two sessions dealing with Computer Technology and one final panel discussion. Each of the sessions contained one or more keynote papers followed by a general discussion.
2. In Biochemistry Session I, under the chairmanship of Dr. M.S. Camlin, Department of Agriculture for Northern Ireland, a keynote paper on "Electrophoresis of autogamous species" given by Dr. R.J. Cooke, NIAB, was followed by discussions on "Cereal cultivar identification, standard ISTA reference methods and further evaluation by UPOV, integration of electrophoretic data into morphology-based schemes". Another keynote paper on "Electrophoresis of outbreeding and vegetatively propagated species" given by Dr. T.J. Gilliland, Department of Agriculture for Northern Ireland, was followed by discussion on "Methods for grasses, onions and other species for which morphological characters for distinctness are of limited resolving power. UPOV views on applicability."
3. In Biochemistry Session II, under the chairmanship of Mrs. V. Silvey, Deputy Director of NIAB, a keynote paper on "DNA probes for cultivar identification: the future" given by Dr. C. Ainsworth, Wye College, London University, was followed by discussions on "Implications of DNA probe technology for the future of Plant Breeders' Rights, patents, intellectual property rights" and two further keynote papers on "Novel chromatographic applications" by Dr. A.G. Morgan, NIAB, and "Possible application of chlorophyll fluorescence testing in DUS" by Dr. A. McMichael, Department of Agriculture for Northern Ireland, were followed by discussions on those subjects.

4. In Computer Technology Session I, under the chairmanship of Dr. J.K. Doodson, Deputy Director, NIAB, two keynote papers on "Machine vision for the characterisation and identification of cultivars" given by Dr. S. Draper and on "An integrated varietal-identification approach for carnations using modern methods" given by Mr. M. Jay, University Claude Bernard, Lyon, France, were followed by discussions on "Use of machine vision for DUS".

5. In Computer Technology Session II, under the chairmanship of Mrs. V. Silvey, Deputy Director, NIAB, a keynote paper on "Integrated interactive databases" given by Mr. F.G. Pullen, NIAB, was followed by discussions on "Computer systems within the UPOV context".

6. In a panel discussion, under the chairmanship of Mr. G. Harvey, Controller, PVRO and with the following panel members: Mrs. V. Silvey, Deputy Director, NIAB; Dr. M.S. Camlin, Department of Agriculture, Northern Ireland; Dr. J.K. Doodson, Deputy Director NIAB; Mr. B. Greengrass, Vice Secretary-General, UPOV; and Mr. G.J. Urselmann, COSEMCO, a general discussion took place on "The wider implications: PBR patents, minimum distances, legal and financial aspects."

7. The workshop was opened by Dr. G.M. Milbourn, Director of the NIAB, followed by an introduction and explanation of the program given by Dr. S.R. Draper, Chief Officer, Official Seed Testing Station, NIAB. The workshop was closed by Mr. J. Harvey, Controller of the PVRO. Responsibility for the arrangements was in the hands of Mr. J. Ardley, Deputy Controller of the PVRO.

8. The workshop participants had the opportunity to watch demonstrations on the application of electrophoresis, on the use of machine vision for the distinguishing of seed of wheat varieties and onion bulbs and on interactive computerized databases on mini and micro computers, including data queries to a remote site, organized by Dr. Cooke, Dr. P.D. Keefe, Mrs. A. Campbell and Mr. A.J. Eade, all from the NIAB.

9. The workshop was most successful. It allowed a fruitful exchange of views between breeders and government experts on a subject which will have considerable impact on the future of the testing and protection of plant varieties. It was also noteworthy that among approximately 130 participants, a considerable percentage came from the legal field. The second of a series of a total of five workshops, it gave an insight into the question of minimum distances which acquires added significance from the ability of the new technologies to detect smaller differences between varieties.

10. Some participants in the workshop repeated the arguments raised in the first workshop that it was desirable that differences established by these technologies have a relationship to the utility of the variety. It seemed that some breeders preferred broad minimum distances while others wished to be certain that their variety would be protected even if it differed only by a minor characteristic; varieties distinguished only by minor morphological characteristics could be very different in performance. The workshop also discussed the possibility of introducing an inventive step to the plant variety system; voices warned of the implication these measures might have. "Invention" is not relevant to most plant breeding where objectives are frequently obvious. An alternative way of deterring plagiarism and strengthening the rights granted was a system of dependency; the existing distinctness rules with rather close minimum differences meet the need for the protection of the products of original breeding while dependency meets the need to inhibit

plagiaristic breeding approaches. Some participants warned that it was not desirable to allow every difference detectable with the new methods as the basis for distinctness. That could undermine the breeders' right system although dependency might lessen or eliminate the danger.

11. It became clear that the application of the new technologies for PVR purposes depended less on solving the outstanding technical problems than on the interpretation of the results, on the concept of what was a variety, and on what was valid breeding and what was not. Here more discussion with breeders was felt to be necessary in order to reach a common understanding and agreement on what should justify protection. Policy makers will have to set guidelines on which technical experts will base the minimum distances which should be established species by species.

12. The following observations by individual participants were particularly pertinent:

(i) In future more importance should be given to checking differences in the genotype instead of looking at the phenotype. Some of the new methods like DNA probes offered help in that direction.

(ii) In the context of dependency, breeding history might have to be considered much more than in the past in the judgement whether a candidate variety should obtain protection; the new technologies would frequently enable the accuracy of such histories to be checked.

(iii) An open question was whether on any introduction of dependency, which might reduce the pressure on minimum distances and permit the acceptance of any difference which allowed a variety to be clearly distinguishable, the original breeder should receive only equitable remuneration or whether he should have the right to prohibit others from exercising rights in a dependent variety particularly when the dependent variety results from plagiaristic approaches.

(iv) Should the breeder be able to register lines or mutations around his variety in order to protect a larger range around his variety against use by others?

(v) If differences were accepted which were too small, the breeder might have difficulty in maintaining his variety within these narrow limits.

(vi) In all discussions concerning minimum differences breeders should be more involved. The information available to them should be used more, and they should be invited to more meetings aimed at reaching solutions.

(vii) In the future breeders should also be more involved in the testing of varieties. The national authorities would not be able to cover an increasing number of applications for more and more species.

(viii) Thought should be given whether characteristics obtained with the help of these new technologies could replace a large proportion of the morphological characteristics currently used.