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TWC/17/3
ORIGINAL: English
DATE: May 10, 1999

UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY ON AUTOMATION AND COMPUTER PROGRAMS

Seventeenth Session
Helsinki, June 29 to July 2, 1999

SUMMARY OF UPOV QUESTIONNAIRES CONCERNING DUS AND VCU DATABASES AND COMPUTER SYSTEMS

Document prepared by experts from Poland

SUMMARY OF UPOV QUESTIONNAIRES CONCERNING DUS AND VCU DATABASES AND COMPUTER SYSTEMS

Wieslaw Pilarczyk, Department of Mathematical and Statistical Methods, Agricultural University of Poznan,
and The Research Centre of Cultivar Testing, Slupia Wielka, Poland

1. Introduction

In many countries, member States and non-member States of UPOV, computers are used to store and process information concerning varieties of agricultural crops. In order to collect some general information about the extent of information stored in different countries and also about the kind of computers and software used, the idea of preparing a special questionnaire was brought up during the TWC meeting. Two such questionnaires were prepared by Poland and distributed by the UPOV Office in June 1998. The first questionnaire concerned information relating to distinctness, uniformity and stability testing (DUS testing), the second one concerned information related to the so-called VCU (value for cultivation and use) testing. This paper is a report of the information collated.

2. DUS related databases and systems

Answers from 16 countries were collected. From some countries more than one questionnaire from different institutions involved in DUS testing was received. In this case, the information for such a country was "averaged". The following countries supplied information: Australia, Austria, Denmark, England, Finland, France, Germany, Norway, New Zealand, Poland, Portugal, Russia, Scotland, South Africa, Spain and Sweden.

2.1 Design of experiment

In eleven countries the designs are formed by experimenters whereas in the rest it is the responsibility of research institutions.

2.2 Standard number of replicates

In the majority of countries just two replicates are used. But in some countries more replicates are applied: three in Germany, three to six in England and Finland, four in Spain and ten in New Zealand.

2.3 Maximum number of treatments

This question was not clear enough, since we received the answer from some countries that the maximum number of treatments is equal to 1 or 2, and from other countries there was no answer to the question. The upper limit for the number of treatments is equal to 50 in Spain, 100 in France, 500 in Germany and 1000 in Austria and in Poland. In fact it is a very technical constraint, independent of the merits.

2.4 Databases

In all countries databases for DUS (distinctness, uniformity and stability) testing and for VCU (value for cultivation and use) testing are independent. Only France and Poland have some of those elements in common. In Australia and Russia there are no computer based databases for DUS research.

2.5 Methods of transmission of data

Three different methods of data transmission were considered, namely: (a) on sheets, (b) on diskettes, (c) by direct connection.

In nearly all countries two or three methods of transmission are used. Only in Finland, Norway, Poland and Russia are sheets the only means of data transmission. In Austria and Spain only the method of direct connection is used. In Germany all three methods are in use.

2.6 Responsibility for correctness of data in database

In the majority of countries, experimenters are responsible for the correctness of data in the database. Only in Finland, France, Germany and Poland does it belong to the research institution.

2.7 Extent of data kept in databases

In eleven countries of the sixteen considered, measurements are kept in databases. In eight countries plot means are stored whereas in seven countries variety means are stored. In eleven countries detailed descriptions of varieties are stored.

2.8 Data management systems

In this respect there is full heterogeneity among countries. In some countries highly advanced relational databases are used such as ORACLE (in England and France), INFORMIX (Germany), ACCESS (New Zealand, Portugal, Spain and South Africa). In some other countries ordinary spreadsheets of e.g. type EXCEL are used. In several countries also the system DUST, prepared in Belfast, is used (e.g. in England and Poland).

2.9 Type of computer system

In three countries the databases are running on main-frame computers (England, Norway and Poland) whereas in eleven countries PC’s are used for this purpose. In England the database can also be run on PC.

2.10 Age of oldest data directly available

In four countries (Austria, New Zealand, Poland and Portugal) the results of the last three years are directly available. In Finland, Norway and Russia the results of five years are available, in France and Germany the results of last ten years are attainable whereas in five countries (Austria, Denmark, England, Spain and South Africa) all data are at hand.

2.11 Outliers

In eight countries non-typical observations (outliers) are kept in databases whereas in five countries (England, Denmark, Finland, France and Germany) such observations are removed.

3. VCU related databases and systems

The answers from 14 countries were received. Similar to the DUS questionnaire, from some countries more than one answer was collected and then "averaged". The answers from: Austria, Denmark, England, Finland, France, Germany, Ireland, Norway, Poland, Portugal, Russia, Spain, Scotland and Sweden were available for preparing this report.

3.1 Design of experiment

Only in one country (Denmark) does the total responsibility for the design of the experiment belong to the experimenter. In all other countries schemes of experiments are formed by research institutions, sometimes in co-operation with experimenters (Austria, England).

3.2 Standard number of replicates

In nearly all countries the standard number of replicates is four or sometimes three. A higher number of replicates is used in Austria (six). In Scotland and Norway two replicates are used.

3.3 Maximum number of treatments

Again, not in all countries was this question properly interpreted, so in some answers we found that the maximum number of treatments is equal to 1 or 2. Nevertheless the constraint concerning the number of treatments varies from 30 (Finland, Portugal), through 40 (France), 75 (Scotland), 90 (Poland), 120 (Germany) to 1000 (Austria). There is no limit for the number of treatments in England.

3.4 Type of experimental design

In the majority of countries only complete blocks are used. Incomplete blocks are used in England, Finland, Germany, Poland, Spain and Scotland.

3.5 Methods of transmission of data

Exactly the same methods of transmission of data as for the DUS trials were considered. In nearly all countries two or three methods of transmission of data are in use. Only in Norway, Poland and Portugal is the traditional method of sheets sent by post used. In England and Finland only direct connection method is used whereas in Ireland only sending data on diskettes method is used.

3.6 Responsibility for correctness of data in database

In the majority of countries responsibility for data correctness is assigned to the research institution. Only in Austria, Denmark and Ireland are experimenters responsible for the

correctness of data in databases. In England and Finland this responsibility is shared between experimenters and research institutions.

3.7 Extent of data kept in databases

In nearly all countries both plot data and treatment means are kept in databases. Only in Finland, Poland and Sweden are the plot data not kept. In ten countries detailed descriptions of experiments are also included in databases.

3.8 Data management systems

There is full heterogeneity between countries in this respect. Advanced relational databases such as ORACLE (France, Scotland), and INFORMIX (Germany) are used, and ordinary spread-sheets of EXCEL or FOXPRO type (Denmark and Portugal) and also home-made software (Austria and Russia) is used.

3.9 Type of computer

In five countries the databases are running on main-frame computers (England, Finland, Poland, Spain and Scotland). In Austria both types of computers are used. In eight countries databases are PC based.

3.10 Age of oldest data

In six countries (Denmark, France, Germany, Norway, Russia and Sweden) results from the last ten years are immediately available. In Ireland and Poland (planned) the results of only the last five years are directly available. For the other countries all data stored are available.

3.11 Outliers

In six countries (Austria, Finland, Ireland, Norway, Poland and Russia) outliers are stored in databases whereas in eight they are removed.

3.12 Relation with DUS databases

In all countries the databases for VCU and DUS purposes are independent. Only in France and Poland do they have some elements in common.

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