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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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EXCHANGEABLE SOFTWARE

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1. At its twenty-fourth session, held in Nairobi from June 19 to 22, 2006, the Technical Working Party on Automation and Computer Programs (TWC) agreed that the Office should circulate to the TWC a list of the exchangeable software, to be updated. On July 23, 2007, circular E-547 was sent to all TWC members, containing a list of exchangeable software to be updated. The Annex to this document contains the list of exchangeable software incorporating the information received in reply to circular E-547.

[Annex follows]

ANNEX

EXCHANGEABLE SOFTWARE

CZECH REPUBLIC

Program Name	Function	Programming Language	Available From
FTAB-MAX	Spreadsheet with statistical functions, for example: * Finding most similar varieties, based on euclidian distance from a target variety in a standardized multidimensional space; * Multidimensional grouping of varieties (hierarchical sorting) based on categorical descriptor values. Stops when distinction of all entries is reached; * Least Squares Analysis of nonorthogonal data, including least significant differences for average number of reps; * Simple statistics of specified rows or columns; * Multidimensional distinctness of measured variables of replicated entries (combined over environments); * Correlation matrices with indicated significance; * Two-dimensional scatter diagrams.	Compiled BASIC	Dr. E. Schwarzbach Brno

DENMARK

Program Name	Function	Programming Language	Available From
	Denmark uses SAS on Pcs for calculation of data from both DUS and VCU trials. Administrative data are stored and retrieved from a database developed in FOXPRO (Dbase IV-like) on Pcs. Macros in SAS are available which convert SAS datasets to files which can be read by DUST and related programs. Procedures using SAS can be copied by other SAS users.	SAS	K. Kristensen Denmark
SAS-SUMMARY	Calculates summary measures.		
SAS-ANOVA	Calculates analyses of variance, variety means and SLD values.		
SAS-GLM			
SAS-PLOT	Residual plots and plots of standard deviations against plot number and/or means.		
SESENS	Convert SAS-files to ascii-files which can be used as input for UNIF3 (Fortran uniformity program supplied by M Talbot).		
SESSELV	Convert SAS-files to ascii-files which can be used as input for TVAL and TSUM (Fortran distinctness programs which are part of the DUST program supplied by S T C Weatherup).		

FRANCE

Program Name	Function	Programming Language	Available From
GAIA	Software with a built-in database and a window user interface. Computes pair comparison on sets of varieties and shows where two varieties have different observed values. Crop experts define weights for observed differences per characteristic. These individual weights and their sum are used to provide assistance to crop expert in finding varieties which are close and need special attention, and varieties which are extremely different and do not need to be further compared in field trials. GAIA helps in management of reference collection.	Windev	Cristophe.chevalier@geves.fr
LCDMV	LCDMV is a SAS program using SAS-STAT and SAS-IML packages. LCDMV computes genetic distances between varieties when biochemical or molecular markers are available. Markers can be dominant or co-dominant. Varieties can be described with results from groups or from individual plants. Distances can be computed which takes into account the position of the marker on the chromosome (chromosome number, and position on chromosome)	SAS	Cristophe.chevalier@geves.fr

GERMANY

Program Name	Function	Programming Language	Available From
SAS - COY - D	Distinctness tests for candidate varieties with 3, 2 or 1 year of trial results. Calculation of ANOVA summary statistics, MJRA, LSD-values, outlier checking, residual plots, summary table of distinctness results, similar varieties. Options: long range LSD values, robust estimate of error mean square.	SAS	Bundessortenamt, Hanover
SAS - COY - H	Homogeneity test for candidate varieties with 3 and 2 years of trial results. Functions and output as described in document TC/30/4 (COY-U).	SAS	Bundessortenamt, Hanover
VERA	Generates randomized designs for variety trials with up to 225 entries: complete blocks, with entries arranged in groups (e.g. maturity), split plots (2 factors), split plots where subplots are arranged in an alpha design.	SAS	Bundessortenamt, Hanover

JAPAN

Program Name	Function	Programming Language	Available From
KIRI	General data base software which contains information on applications (such as name and address of applicant, genera and species of variety, proposed denomination, date of application etc.) and registration (denomination, date of registration, characteristics of registered variety etc.).	C	Plant Variety Protection and Seeds Division, MAFF, Tokyo, Japan

NETHERLANDS

Program Name	Function	Programming Language	Available From
Hand held terminal	Programs on hand held terminals Husky FS/2 for field observations with checks on data.	MS-DOS Turbo Pascal VAX Fortran	Gerard Middendorp CPRO-DLO, PO Box 16 6700 AA Wageningen The Netherlands
CIS	Oracle database with applications for DUS and VCU trials data storage and analysis.	Designer 2000	Gerard Middendorp CPRO-DLO
Genstat Procedures	A suite of dedicated procedures for analysis of variety data from the CIS database.	Genstat 4.1	Gerard Middendorp CPRO-DLO
SCIL-Image	Image analysis package with C-command interpreter, menu's, easily expandable large library of imaging functions.	C	Gerie v.d Heijden CPRO-DLO

POLAND

Program Name	Function	Programming Language	Available From
POWT3	Analysis of categorial data; the difference between all pairs of varieties are tested.	FORTRAN F1	W.Pilarczyk COBORU Poland
POWT5	Analysis of variance for cumulative observations over a period of time. Program can be used, for example, for the analysis of heading dates and for so called "dynamics of flowering".	FORTRAN F1	

RUSSIAN FEDERATION

Program Name	Function	Programming Language	Available From
ZAJVKA	Information on applications (name and address of applicant, proposed denomination, date of application etc) and registration (denomination, date of registration)	SQL Windows	Chief of IT Department Valentin Sherbina Moscow, (495) 207-6826
OOS	General database software for programming and DUS-analysis of data of plant varieties trials	SQL Windows	Chief of IT Department Valentin Sherbina Moscow, (495) 207-6826
PLOD_PLAN	Database software for DUS-analysis and programming of data of fruit- and berry- DUS trials	SQL Windows	Chief of IT Department Valentin Sherbina Moscow, (495) 207-6826
ISS (SPRAVKA)	Software for report, calculate and analyze data from plant varieties trials for last 10 years	Borland C (DOS) VBA (In formation)	Chief of IT Department Valentin Sherbina Moscow, (495) 207-6826

SLOVAKIA

Program Name	Function	Programming Language	Available From
ANALIST 1.1	Identification of wheat varieties using Image Analysis of 16 morphometrical parameters of wheat seeds, compare morphometrical parameters of tested sample with standard parameters of reference varieties (from catalogue), compute the similarity of varieties and ranking of varieties by level of homology of their shapes.	PASCAL 6.0	Mr.Lubomír Horváth Fax:0042 07 821763 Slovakia
ANALIST 2.1	Identification of bean varieties using Image analysis of 16 morphometrical parameters of bean seeds, compare morphometrical parameters of tested sample with standard parameters of reference varieties (from catalogue), compute the similarity of varieties and ranking of varieties by level of their homology of shapes.	PASCAL 6.0	
ANALIST 3.1	Identification of individual species of plant seeds and admixtures in tested samples using 5 morphometrical parameters.	PASCAL 6.0	
SPECTRUM 1.1	Identification of varieties using electrophoresis and densitometric data. Standardization of electrophoretic spectra by 3 reference bands, compute relative homology of tested and catalogized spectra and ranking of spectra by level of relative weighted homology.	CLIPPER 5.0	

UNITED KINGDOM

Program Name	Function	Programming Language	Available From
DUST	General program for analysis of data from DUS trials. Includes facilities for COY analysis and a wide range of multivariate analysis techniques. The software package is currently available in a DOS-based version (DUST9) and in a Windows 95/NT version (DUSTNT). The DUST Software Package The DUST system was developed specifically to meet the needs of DUS (Distinctness, Uniformity and Stability) testing stations for software, to organize, analyze and report data from DUS field trials. DUST is in routine use at several DUS centers for the management of data from trials of grasses, legumes, vegetables and fodder crops. It incorporates many of the UPOV-recommended statistical procedures for these crops. The DUST package handles data through the stages of collection, storage, single-year summary, and multi-year summary. As well as providing the UPOV-recommended procedures, it includes facilities for: • identifying most similar varieties based on observations from a number of characters; • producing variety descriptions. The DUSTNT system will run on Pentium PCs. The minimum specification of PC needed to run the software is a 486 DX processor with 36 mbyte of memory. For further information and details of availability please contact:	FORTRAN 90	Dr. Sally Watson, Biometrics Branch, Agri-Food & Bioscience Institute, Newforge Lane, Belfast BT9 5PX, UK Tel: (44) 2890 255 292 Fax: (44) 2890 255 008 Email: sally.watson@afbini.gov.uk

UKRAINE

Program Name	Function	Programming Language	Available From
Microsoft SQL-Server 7.0	Database. Contains administration information and results of DUS & VCU trails.	TRANSACT-SQL	Alex Iluchenko ias@sops.gov.ua
MS Access	Database management system.	MS Visual Basic	
ARM-SORT	Client application for DUS & VCU trails data storage and analysis using statistic methods.	Delphi, MS Visual Basic	

DATABASE MANAGEMENT SYSTEMS IN USE

Name	Hardware - OS	Data used	Interface
Oracle	Vax II - VMS (NL) Dec Alpha - VMS (UK) Sequent - Dynix (UK) Sun - Solaris (UK) Axil - Solaris (FI) PC - Windows NT (F,UK)	Variety (F, FI, NL, UK) Seed Cert (FI, NL, UK) Administrative (F, NL, UK) Photo/slides/herbarium (NL)	Fortran,Pascal,Cobol,C, SQL/NT Servers, Developer 2000, VBA, Access, WP packages
Informix	Hewlett-Packard - HP UX (D)	Admin+Technical (D)	Fortran, C, SAS; VBA links to Word/Excel
dBase III+	PC - Dos (ES) PC (SK)	Technical (ES, SK) Admin (ES, SK)	Assembly Language only
Fox Pro 2	PC - Windows(CZ)	Admin+variety (CZ)	MS Office, dBase,Fortran
Visual Fox Pro	PC - Windows NT(CA) PC - Windows (DK)	Admin (CA) Admin+variety (DK)	WordPerfect,MS Office FoxExpress
RDB	VAX 4300 - VMS (F)	Admin+Technical (F)	-
IDSMA	ICLS39 VME (PL)	Admin+Variety (PL)	COBOL Application Master
Progress	Axil - Solaris (FI)	Admin (FI)	Sylk
MS Access	PC - Windows (D, F, SK, UK)	Variety (UK) Technical (D, F, SK, UK) Admin (F, SK, UK)	-
MS Excel	PC - Windows (HU)	Admin+Tech+Variety (HU)	VBA

[End of Annex and document]