TWC/34/30
ORIGINAL: English
DATE: June 2, 2016

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
Geneva

TECHNICAL WORKING PARTY ON AUTOMATION AND COMPUTER PROGRAMS

Thirty-Fourth Session
Shanghai, China, June 7 to 10, 2016

A RING-TEST COMPARING THREE DIFFERENT SOFTWARE PACKAGES FOR COYD

Document prepared by an expert from China

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The Annex to this document contains a copy of a presentation on "A ring-test comparing three different software packages for COYD" that will be made at the thirty-forth session of the Technical Working Party on Automation and Computer Programs (TWC).

Abbreviations:
    CAAS Chinese Academy of Agricultural Sciences
    GB   The United Kingdom
    CN   China
    DE   Germany

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[Annex follows]

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A ring-test comparing three different software packages for COYD

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Shanghai, China, June 7-10, 2016

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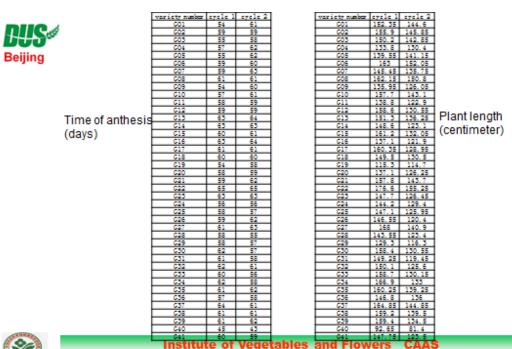
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Data used for COYD

- 45 varieties of Sorghum with two cycles, last five are candidate varieties:

✓ **Time of anthesis**, one datum for each cycle

✓ **Plant length**, twenty data for each cycle

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Time of anthesis (days)

variety number	cycle 1	cycle 2
C01	54	61
C02	59	59
C03	55	58
C04	57	62
C05	55	62
C06	59	60
C07	59	63
C08	61	61
C09	54	60
C10	57	61
C11	58	59
C12	59	59
C13	63	64
C14	63	63
C15	60	61
C16	63	64
C17	61	61
C18	60	60
C19	54	58
C20	58	59
C21	59	62
C22	65	65
C23	63	63
C24	56	56
C25	58	57
C26	59	62
C27	61	63
C28	58	55
C29	58	57
C30	62	57
C31	61	58
C32	62	61
C33	60	58
C34	62	58
C35	61	62
C36	57	58
C37	64	61
C38	61	61
C39	61	62
C40	45	43
C41	60	59

Plant length (centimeter)

variety number	cycle 1	cycle 2
C01	152.35	144.6
C02	155.9	145.85
C03	150.2	142.85
C04	153.8	150.4
C05	139.55	141.15
C06	163	152.05
C07	145.45	135.75
C08	162.15	150.8
C09	135.95	126.05
C10	157.7	143.1
C11	138.8	122.9
C12	158.6	150.55
C13	151.3	138.25
C14	148.5	123.1
C15	161.2	132.05
C16	157.1	121.9
C17	160.35	128.95
C18	149.5	130.5
C19	115.3	114.7
C20	137.1	126.25
C21	157.8	143.7
C22	176.6	155.25
C23	147.7	128.45
C24	144.2	129.4
C25	147.1	125.95
C26	146.55	120.4
C27	168	140.9
C28	143.55	123.4
C29	109.3	116.3
C30	158.4	130.55
C31	149.25	119.45
C32	150.1	125.6
C33	158.7	130.15
C34	166.9	155
C35	160.25	139.25
C36	146.8	136
C37	164.85	144.85
C38	159.2	139.5
C39	159.4	134.5
C40	92.65	81.4
C41	147.75	125.5

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Statistical tools

- DUST software, created by the United Kingdom (GB) in 1998, written by FORTRAN 90 language.

- SAS software, data collected by a Visual Basic (VB) software created by Germany (DE).

- DUSTC software, created by China in 2012, written by Pascal language in Delphi plantform.
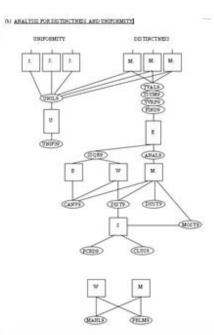
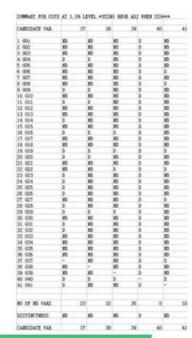**Institute of Vegetables and Flowers   CAAS**   5

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DUSTN——GB

afbi
DUST Analysis System

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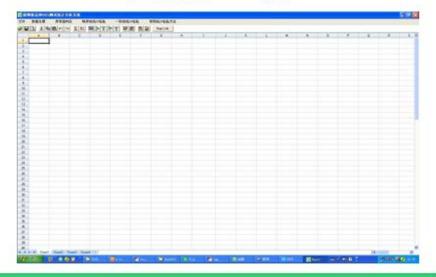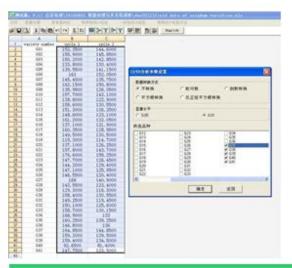Institute of Vegetables and Flowers CAAS

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open an excel document with field data

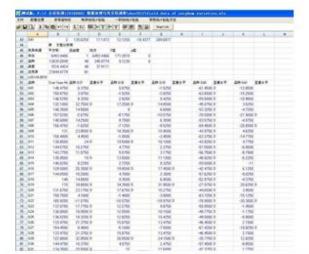Institute of Vegetables and Flowers CAAS   9

select data zone, click parameters board to select method to convert original data, significance level, candidate varieties

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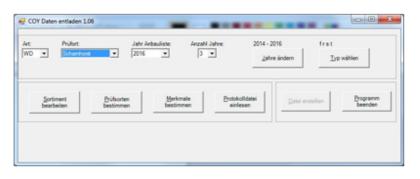
results will be showed in another sheet

SAS——DE

In the first step we choose species, trial-station and time-period

In the second step we choose the candidate-varieties:

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In the third step we choose the characteristics:

In the last step we choose the probability-levels:

COY-Parameter

COYU Ablehnung nach 2 Jahren : 0.002	COYD Unterscheidung : 0.01
COYU Annahme nach 2 Jahren : 0.02	COYD 3 Jahre : 0.05
COYU Ablehnung nach 3 Jahren : 0.002	COYD Unterscheidung (einj.) : 0.01
	COYD weiteres Jahr (einj.) : 0.15
	COYD 1. Ausreißerniveau : 0.05
	COYD 2. Ausreißerniveau : 0.01
	COYD Anzahl nicht unterscheidbarer Sorten : 70
	COYD Anzahl ähnliche Sorten : 10
	COYD MURA : 0.01

OK   Abbrechen

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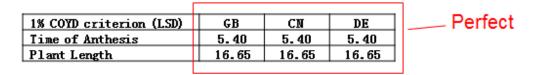| Kenn-Nr.	Sorte	37	38	39	40	41
1	Sorte 01	1J	NU	1J	2U	1J
2	Sorte 02	NU	NU	NU	2U	1J
3	Sorte 03	1U	1J	1J	2U	NU
4	Sorte 04	1U	1U	1J	2U	NU
5	Sorte 05	2J	NU	NU	2U	NU
6	Sorte 06	NU	NU	NU	2U	1U
7	Sorte 07	1J	NU	NU	2U	NU
8	Sorte 08	NU	NU	NU	2U	1U
9	Sorte 09	2U	1U	2J	2U	NU
10	Sorte 10	NU	NU	NU	2U	1J
11	Sorte 11	1U	1U	1J	2U	NU
12	Sorte 12	NU	NU	NU	2U	NU
13	Sorte 13	NU	NU	NU	2U	1J
14	Sorte 14	1U	1J	NU	2U	NU
15	Sorte 15	NU	NU	NU	2U	NU
16	Sorte 16	1U	1U	1U	2U	1J
17	Sorte 17	NU	NU	NU	2U	NU
18	Sorte 18	1J	NU	NU	2U	NU
19	Sorte 19	2U	1U	2U	2U	1U
20	Sorte 20	1U	1U	1J	2U	NU
21	Sorte 21	NU	NU	NU	2U	1J
22	Sorte 22	NU	1U	1U	2U	2U
23	Sorte 23	1U	NU	NU	2U	NU
24	Sorte 24	2U	2J	1U	2U	NU
25	Sorte 25	1U	1J	1J	2U	NU
26	Sorte 26	1U	1J	1J	2U	NU
27	Sorte 27	NU	NU	NU	2U	1U
28	Sorte 28	2U	2J	2J	2U	NU
29	Sorte 29	1U	1U	1U	2U	1J
30	Sorte 30	NU	NU	NU	2U	NU
31	Sorte 31	1U	1J	1J	2U	NU
32	Sorte 32	1U	NU	NU	2U	NU
33	Sorte 33	1J	NU	NU	2U	NU
34	Sorte 34	NU	NU	NU	2U	1J
35	Sorte 35	NU	NU	NU	2U	1J
36	Sorte 36	2J	NU	1J	2U	NU
37	Sorte 37	-	NU	NU	2U	1U
38	Sorte 38	NU	-	NU	2U	1J
39	Sorte 39	NU	NU	-	2U	NU
40	Sorte 40	2U	2U	2U	-	2U
41	Sorte 41	1U	1J	NU	2U	-
.	Anz. NU/3J	16	23	23	0	23
.	Unter./3J	nein	nein	nein	ja	nein

1J: further test year necessary in one characteristic (difference between test and candidate variety is lying between least significant difference for the first (1%) and for second (5%) limit)

2J: further test year necessary in two characteristics (difference between test and candidate variety is lying between least significant difference for the first (1%) and for second (5%) limit)

1U: there is a difference in one characteristic

2U: there is a difference in two characteristics

NU: there is no significant difference

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Results

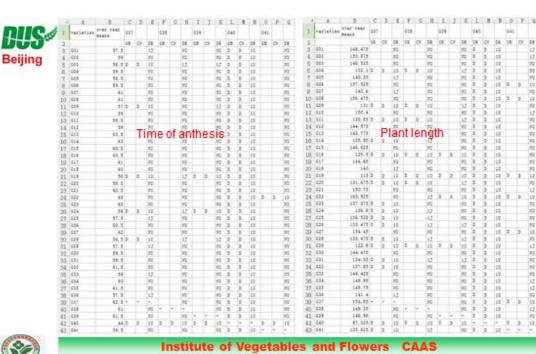| 1% COYD criterion (LSD)	GB	CN	DE
Time of Anthesis	5.40	5.40	5.40
Plant Length	16.65	16.65	16.65

— Perfect

- GB, CN and DE have the same result of criterion.

- DE produces a integrated result which is different from GB and CN.

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[End of Annex and of document]