

**Technical Working Party for Vegetables**

**TWV/56/12 Rev.**

**Fifty-Sixth Session**

**Virtual meeting, April 18 to 22, 2022**

**Original:** English

**Date:** April 20, 2022

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## **EXCHANGE AND USE OF SOFTWARE AND EQUIPMENT**

*Document prepared by an expert from China*

*Disclaimer: this document does not represent UPOV policies or guidance*


The annex to this document contains a copy of a presentation “A Statistical Analysis Software: DUSCEL4.0”, made by an expert from China, at the fifty-sixth session of the TWV.

[Annex follows]



IVF CAAS  
Institute of Vegetables and Flowers  
Chinese Academy of Agricultural Sciences

**DUS**  
Beijing



## A STATISTICAL ANALYSIS SOFTWARE : DUSCEL3.5

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**Yang Kun**  
Deputy director of Beijing Sub-center of New Plant Variety Tests, MARA, China

**TWV56, Virtual meeting, April 18 to 22, 2022**

## CONTENTS

- 1. History
- 2. Features
- 3. Functions
- 4. Future

## HISTORY

1. 2017-2019, EXCEL+VBA+UI=DUSCEL
2. 2019, V1.0, 12 sheets and 46 functions, reported in TWC37.
3. 2020, V2.0, 6 sheets and 55 functions, reported in TWC38.
4. 2021, V2.5, 7 sheets and 52 functions, reported in TWA50.
5. 2021, V3.0, 5 sheets and 42 functions, reported in TWC39.
6. 2022, V3.5, 8 sheets and 35 functions, reported in TWV56.
7. 2022, V4.0, 8 sheets and 20 functions, reported in TWM1.

# TWV52 BEIJING, 2018.9.19

# New DUS Statistical Analysis Tool

## FEATURES

1. How to save and manage data easily? **DUSCEL is Excel.**
2. How to analyze data efficiently? **One data for all analysis.**
3. How to make decision effectively? **Fixed data leads to fixed result.**

### 1. IT'S AN EASY NEW SOLUTION: DUSCEL IS EXCEL.

DUSCEL3.5 20220419.xlsm - Excel

登录

🔍 共享

文件开始插入页面布局公式数据审阅视图开发工具帮助负载测试团队百度网盘DUS操作说明搜索

OpenTGOpenTaskENJCNValidMeanCOVUCOVDHtoVQnFrDisVtoHDistEditGroupDistMinkDistEDVGetFilesShowPhotoReportPhExtrDatOpenDataCalibBxPhOffTypeCOVSDatatoMSChSqTrialDesignCorrelChDistDiffCorrelVrReportRenFilesComPhotosAnaPhotosExtrRatOpenCKRenewStdDevRelVarTTESTDatatoVSExFactNTtoCKQnFrDisDistHoldJaccardCKInsPhotosListPhotosDelPhotosDelResultToolImage

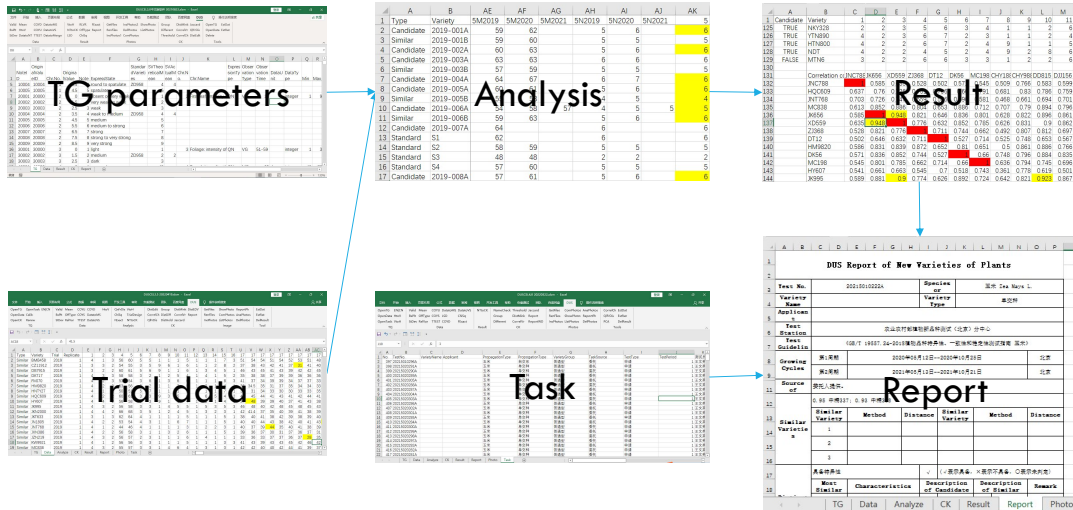
AC18

41.5

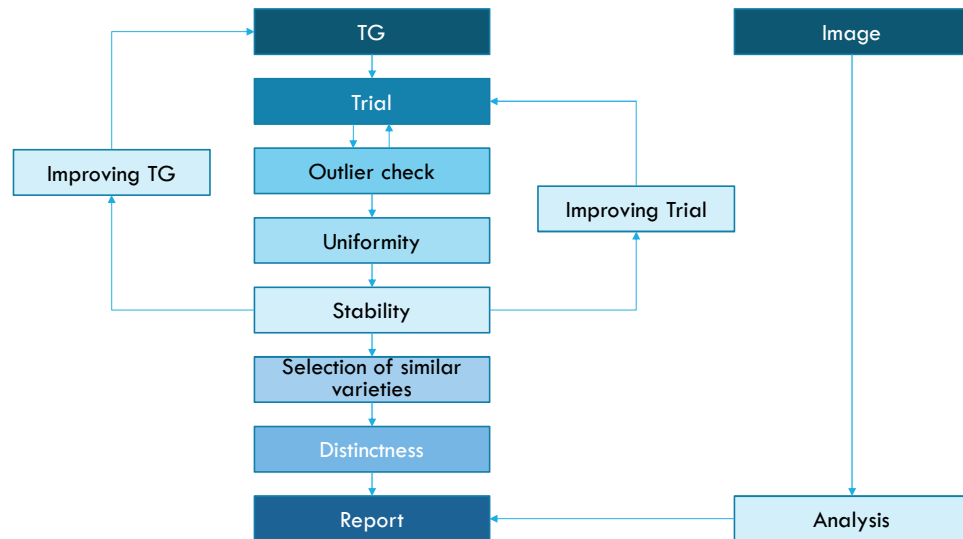
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC		
1	Type	Variety	Trial	Replicate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17	17	17	17	17	17	17	17		
2	Similar	BMB458	2019		1	4	1	3	56	60	5	5	1	1	1	5	1	1	1	7	3	51	54	54	51	54	52	53	51	48	
3	Similar	CZ11912	2019		1	3	3	2	54	55	3	5	9	6	1	6	1	1	2	8	2	37	38	43	42	41	37	31	41	40	
4	Similar	DB7915	2019		1	3	2	2	60	61	5	6	9	1	1	6	1	3	4	5	1	46	43	45	41	43	39	42	42	45	
5	Similar	DK717	2019		1	4	3	3	58	58	3	2	1	2	5	4	1	4	1	5	2	35	38	38	37	39	39	36	36	36	
6	Similar	FMJ70	2019		1	4	2	3	53	54	3	6	1	3	6	6	1	1	1	8	3	41	37	34	39	39	34	37	37	33	
7	Similar	HM9820	2019		1	4	2	2	53	56	3	2	1	1	2	5	1	2	1	4	1	38	34.5	35	31	37	35	34	34	33	
8	Similar	HNTY27	2019		1	4	1	2	50	51	5	7	1	1	1	5	1	1	1	7	1	35	31	34	33	30	30	33	33	35	
9	Similar	HQC609	2019		1	4	2	2	60	61	3	3	9	3	5	6	1	6	5	4	2	41	45	44	41	43	41	42	44	41	
10	Similar	HY607	2019		1	4	4	2	56	58	2	3	9	1	1	4	1	2	1	4	1	34	48	39	39	40	37	41	43	38	
11	Similar	JK995	2019		1	4	3	2	56	58	3	3	1	4	5	5	1	5	3	5	3	46	48	40	42	48	45	48	45	43	
12	Similar	JKN2000	2019		1	4	4	2	66	68	3	5	1	2	4	5	1	3	2	3	1	42	41.4	37	35	40	39	41	38	39	
13	Similar	JKT633	2019		1	3	1	3	62	64	4	1	1	1	1	1	5	1	1	1	5	1	38	40	41	38	42	39	38	39	40
14	Similar	JN1805	2019		1	4	2	2	53	54	4	3	1	1	6	7	1	1	1	5	1	40	40	44	43	38	42	40	41	43	
15	Similar	JNT768	2019		1	4	1	2	44	46	4	1	1	1	1	3	1	2	2	3	1	40	37	39	44	35	40	41	38	39	
16	Similar	JXN386	2019		1	4	2	2	56	58	3	1	1	3	2	6	1	1	1	5	1	39	36	37	30	31	37	36	37	31	
17	Similar	JZN219	2019		1	4	3	2	56	57	2	3	1	1	1	6	1	4	1	1	1	33	36	33	37	37	36	37	28	35	
18	Similar	KW9921	2019		1	4	1	2	56	56	3	3	1	1	1	5	1	1	1	3	3	41	43	39	43	43	45	42	46	42	
19	Similar	MC838	2019		1	4	3	2	55	57	3	3	1	4	6	4	1	3	1	3	1	42	42	40	40	42	44	41	39	37	

TGDataAnalyzeCKResultReportPhotoTask

## 2. IT'S AN EFFICIENT NEW TOOL : ONE DATA FOR ALL ANALYSIS.

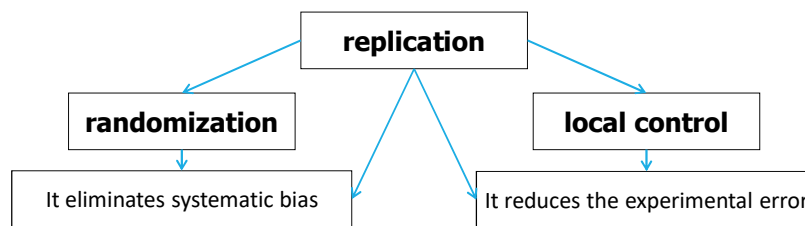


## 3. IT'S AN EFFECTIVE NEW FLOW : FIXED DATA LEADS TO FIXED RESULT.

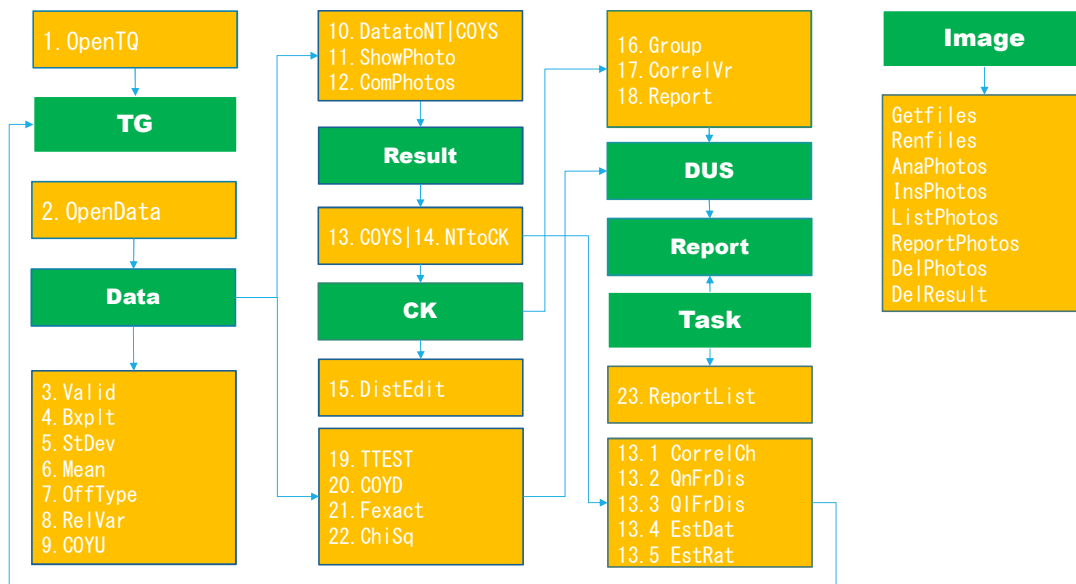


### 3. IT'S AN EFFECTIVE NEW FLOW : FIXED DATA LEADS TO FIXED RESULT.

DUS testing is based on field growing trial. **Minimum distance of DUS is determined by error I and error II of field growing trial.** Quality of field growing trial is influenced by replication, randomization and local control.



## FUNCTIONS



## FUNCTIONS

- Methods for Batch renaming, compressing, labeling, checking photo files.
- Checking abnormal data by Valid, BxPlt and StDev.
- Analysis of uniformity by off-type, relative variance, COYU.
- Converting measured data to notes by fixed scale and changed standard varieties' actual value. Analysis of stability by COYS for varieties or characteristics.
- Methods for verification of characteristics or trial by CorrelCh, QnFrDis, QlFrDis, EstDat and EstRat.
- Selection of similar varieties by Group, CorrelVr, DistMink, DistDiff, etc.
- Analysis of distinctness by T-test, LSD, COYD, ChiSq, Fexact, Etc.
- Report automatically.

# WHOLE SOLUTION FOR CHECKING ABNORMAL DATA

D:\USC16\3_20240419\data - Excel																													
搜索																													
操作列的快捷菜单																													
文件	开始	插入	公式	数据	审阅	开发工具	帮助	名称管理器										团队		视图		DDE							
OpenTg	OpenTask	ENCHN	Valid	Mean	CORU	COYO	Hov	OnOff	VSho	DistdEt	Group	DistMnk	DistOV	GetFiles	ShowPhoto	ReportPh	EstatDat												
OperData	Calc		BaPr	OFFType	COYS	DataToMS		ChEq	TrialDesign	CoreRefC	DistDirH	CorrVnR	Record	RenFiles	ComPhotos	AnaPhos	EstatDef												
OperCb	Review		SDev	RelVar	TEST	DataToVS		Fixact	NTrfCK	ClFOF	DistLstP	Japon	CK	InPhotos	LstPhotos	DePhotos	Tool												
						Data			Analysis						Image														
ACB																													
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	
1	Type	Variant	Trial	Replicate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17	17	17	17	17	17	17	
2	Similar	BMB458	2019	1	4	1	3	56	60	5	5	1	1	1	5	1	1	3	1	3	51	54	54	51	54	52	53	51	
3	Similar	CT11912	2019	1	3	3	2	54	55	3	5	9	6	1	6	1	1	2	8	2	37	38	43	42	41	37	31	41	
4	Similar	DG7915	2019	1	3	3	2	56	61	5	6	9	1	1	6	3	4	1	5	1	46	43	45	41	43	39	42	42	
5	Similar	DK171	2019	1	4	3	58	58	3	2	1	2	5	4	1	4	1	5	2	35	38	38	37	39	39	36	36		
6	Similar	FMJ70	2019	1	4	2	3	53	54	3	6	1	3	6	6	1	1	1	8	3	41	37	34	39	39	34	37	33	
7	Similar	HM9820	2019	1	4	2	2	53	56	3	2	1	1	2	5	1	2	1	4	1	38	34	35	31	37	35	34	33	
8	Similar	HTY27	2019	1	4	1	2	50	51	5	7	1	1	1	5	1	1	7	1	35	31	34	33	30	30	33	33		
9	Similar	HC609	2019	1	4	2	2	50	51	3	3	3	3	5	5	1	4	5	4	32	34	31	41	41	41	41	41		
10	Similar	HY607	2019	1	4	2	2	56	58	2	3	1	1	1	4	2	1	4	1	34	34	36	39	40	37	41	43	38	
11	Similar	JK995	2019	1	4	3	2	56	58	3	3	1	4	5	5	1	5	3	5	46	48	40	42	48	45	48	45		
12	Similar	JKN2000	2019	1	4	4	2	56	68	3	5	1	2	4	5	1	3	2	3	1	42	41	37	35	40	39	41	38	
13	Similar	JKT633	2019	1	3	1	3	62	64	4	1	1	1	1	1	5	1	1	5	1	38	40	41	38	42	39	39	40	
14	Similar	JN1805	2019	1	4	2	2	53	54	4	3	1	1	6	7	1	1	1	5	1	40	40	44	43	38	42	40	41	
15	Similar	JNT760	2019	1	4	2	2	54	55	2	1	2	1	1	1	3	2	2	3	1	40	37	39	44	45	40	41	38	
16	Similar	JKN386	2019	1	4	2	2	56	58	3	3	1	1	3	2	6	1	1	1	5	1	39	36	37	30	31	37	36	31
17	Similar	JZN219	2019	1	4	3	2	56	57	2	3	1	1	1	6	4	1	1	1	3	36	33	37	37	36	37	26	35	
18	Similar	WK9921	2019	1	4	1	2	56	56	3	3	1	1	1	5	1	1	1	3	3	41	43	39	43	45	42	46	42	
19	Similar	MC388	2019	1	4	3	2	55	57	3	3	1	4	6	4	1	3	1	3	1	42	40	40	42	44	41	39	37	

Off-type



## MEAN AND NOTE

	A	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	Type	Variety	5M2019	5M2020	5M2021	5N2019	5N2020	5N2021								
2	Candidate	2019-001A	59	62		5	6		6	6M2019	6M2020	6M2021	6N2019	6N2020	6N2021	6
3	Similar	2019-001B	59	60		5	5		5				3	4		4
4	Candidate	2019-002A	60	63		5	6		6				2	3		3
5	Candidate	2019-003A	63	63		6	6		6				2	3		2
6	Similar	2019-003B	57	59		5	5		5				2	2		2
7	Candidate	2019-004A	64	67		6	7		6				3	3		3
8	Candidate	2019-005A	60	61		5	6		6				3	3		3
9	Similar	2019-005B	55	58		4	5		4				3	3		3
10	Candidate	2019-006A	54	58	57	4	5	5	5				4	4	3	4
11	Similar	2019-006B	59	63		5	6		6				3	3		3
12	Candidate	2019-007A	64			6			6				2			2
13	Standard	S1	62			6			6				2			2
14	Standard	S2	58	59		5	5		5				3	3		3
15	Standard	S3	48	48		2	2		2				4	3		4
16	Standard	S4	57	60		5	5		5				3	3		3
17	Candidate	2019-008A	57	61		5	6		6				2	2		2

Comparison of grape varieties 2018-2191A and 2018-2808A.

**Top Comparison (2018-2191A vs 2018-2191A):**

- Left image: 2018-2191A (2019)
- Right image: 2018-2191A (2020)

**Bottom Comparison (2018-2808A vs 2018-2808A):**

- Left image: 2018-2808A (2019)
- Right image: 2018-2808A (2020)

The images show the leaves and fruit of the grape varieties, with a ruler for scale.

## COYS

	A	B	C	D	E
131	Type	Variety	Number of trials	Note-2019: 2020	
249	Candidate	YTN890	2	0.938038724	
250	Candidate	Z013	2	0.929210603	
251	Candidate	ZHT1931	2	0.883684001	
252	Candidate	ZHT1932	2	0.858238962	
253	Candidate	ZHT1941	2	0.615646481	
254	Candidate	ZHT1942	2	0.551816801	
255	Candidate	ZJ368	2	0.960838943	
256	Candidate	ZNT808	2	0.940061813	
257	Candidate	ZNT828	2	0.948459018	
258	Candidate	ZR1	2	0.607362311	
259	Candidate	ZT192	2	0.890731315	
260		Min		0.531928187	
261		Mean		0.886030597	
262		Max		0.983729219	
263	Type	Chr.	Mean2019: 2020	Note2019: 2020	
264	VG	1 First leaf: shape of apex		0.395970904	
267	MG	4 *Tassel: time of anthesis	0.914650448	0.845777949	
268	MG	5 Ear: time of silk emergence	0.908648888	0.752215479	
308		Min	0.715572857	0.091140749	
309		Mean	0.844120009	0.728106606	
310		Max	0.950703848	1	

## SELECTION OF SIMILAR VARIETIES

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Type	Variety	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
125	Candidate	ZJ368	4	4	3	4	2	3	4	1	2	2	6	1	5	1	4	1	6	6
126	Candidate	ZNT808	4	1	3	2	1	6	5	1	1	1	5	1	1	1	4	1	6	5
127	Candidate	ZNT828	4	1	3	1	1	5	5	1	1	1	5	1	1	1	5	1	4	3
128	Candidate	ZR1	4	6	2	4	1	3	2	5	2	4	4	1	4	3	6	2	8	6
129	Candidate	ZT192	4	4	2	2	1	4	2	1	1	2	6	1	2	1	4	2	6	6
130																				
131		Correl	BM380	BM4192	BM492	BTN1888	CHY188	CHY988	CZ1091	DB1943	DB240	DB2916	DB6910	DD806	DD815	DJ1156	DK193	DK229	DK56	DLN901
132		BM8458	0.85781	0.84337	0.86101	0.6726	0.21364	0.5805	0.60427	0.29	0.73184	0.51042	0.8289	0.55508	0.63202	0.52713	0.47714	0.70548	0.42294	0.61165
133		CZ11912	0.4735	0.49742	0.4847	0.50005	0.28569	0.42324	0.85576	0.84538	0.65748	0.87855	0.64611	0.2349	0.30204	0.25405	0.56314	0.38413	0.14786	0.2505
134		DB7915	0.51853	0.57046	0.52297	0.40592	0.32887	0.59756	0.66966	0.65467	0.59908	0.88869	0.74082	0.40156	0.37452	0.33721	0.68758	0.41808	0.18591	0.39757
135		DK17	0.44913	0.52183	0.41804	0.62383	0.66821	0.84675	0.41984	0.18614	0.54484	0.31261	0.59843	0.85768	0.89632	0.86645	0.6458	0.86876	0.89445	0.82487
136		FMJ70	0.68288	0.73318	0.6863	0.87037	0.24768	0.40343	0.6196	0.39106	0.69606	0.50362	0.68124	0.49656	0.52447	0.45529	0.33838	0.50061	0.3982	0.43356
137		HM9820	0.59935	0.64556	0.57723	0.52071	0.53812	0.8575	0.38273	0.17398	0.5365	0.31789	0.64228	0.8214	0.86874	0.76966	0.65948	0.8736	0.80031	0.87606
138		HNTY27	0.88961	0.92575	0.90802	0.62584	0.08786	0.4137	0.5905	0.24863	0.68919	0.50051	0.76145	0.42544	0.47599	0.36648	0.29168	0.51611	0.27353	0.46653
139		HQC609	0.3508	0.40252	0.31625	0.367	0.69955	0.81767	0.40663	0.41962	0.4353	0.49681	0.52876	0.77001	0.78106	0.77427	0.81062	0.73395	0.64222	0.72313
140		HY607	0.66658	0.66253	0.59552	0.39163	0.36184	0.73875	0.4912	0.42538	0.48297	0.58149	0.64441	0.50573	0.57138	0.46722	0.74828	0.62913	0.43447	0.54499
141		JK995	0.5792	0.57565	0.51151	0.53332	0.65084	0.80131	0.41214	0.1673	0.55045	0.26972	0.58771	0.80892	0.90814	0.85798	0.61543	0.88093	0.85299	0.89713
142		JKN2000	0.44249	0.58098	0.45864	0.78667	0.42191	0.52907	0.49016	0.30429	0.55497	0.45347	0.63593	0.69955	0.58053	0.55832	0.47265	0.5742	0.55009	0.45169
143		JKT633	0.72201	0.77186	0.71504	0.67841	0.26381	0.60098	0.47263	0.29101	0.62965	0.39329	0.68938	0.61149	0.67154	0.5705	0.50705	0.70779	0.4717	0.58555
144		JN1805	0.66499	0.74599	0.69072	0.83198	0.33554	0.53038	0.53226	0.33156	0.63499	0.48052	0.70614	0.61949	0.64907	0.55824	0.43365	0.52286	0.51856	0.49386
145		JNT768	0.60473	0.62017	0.58313	0.32911	0.54829	0.71576	0.40466	0.13736	0.52752	0.35071	0.64649	0.60463	0.71836	0.73504	0.49982	0.72781	0.61807	0.80353

# REPORT

Chr.No.	Chr.Name	性状名称	JK656-2019	XD559-2019	Diff差异	JK656-2020	XD559-2020	Diff差异
1	1	First leaf shape of apex	4	4		4	4	
2	2	First leaf intensity of anthocyanin color	4	4		4	5	1
3	3	Foliage: intensity of green color	3	3		3	3	
4	4	Tassel: time of anthesis	56	56		59	58	1
5	5	Ear: time of silk emergence	58	57	1	60	60	
6	6	Leaf: angle between blade and stem	2	3	1	2	3	1
7	7	Leaf: curvature of blade	2	1	1	2	1	1
8	8	leafanthocyanin coloration of margin	1	1		1	1	
9	9	Ear: intensity of anthocyanin coloration	2	2		2	2	
10	10	Tassel: intensity of anthocyanin coloration	5	6	1	5	6	1
11	11	Tassel: density of spikelets	5	5		5	5	
12	12	Tassel: intensity of anthocyanin coloration	1	1		1	1	
13	13	Tassel: intensity of anthocyanin coloration	5	5		5	5	
14	14	Tassel: intensity of anthocyanin coloration	1	1		1	1	
15	15	Tassel: angle between main axis and lateral branches	5	6	1	5	6	1
16	16	Tassel: curvature of lateral branches	1	1		1	1	
17	17	Tassel: length of main axis above lower	37.9	43.65	5.75	41.22	45.015	3.795
18	18	Tassel: length of main axis above higher	27.95	27.95		30.195	30.765	0.57
19	19	Tassel: number of primary lateral branches	12	15.35	3.35	12.7	14.05	1.35
20	20	Tassel: length of lateral branches	24.075	27.05	2.975	26.925	28.6	1.675
21	21	Stem: degree of zig-zag	1	1		1	1	
22	22	Stem: intensity of anthocyanin coloration	4	3	1	4	3	1




	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	DUS Report of New Varieties of Plants																	
2	Test No.		20210102226							Species or		国家玉米中心						
3	Variety Name									Variety Type		单交种						
4	Applicant																	
5	Test Station		北京市农作物品种测试中心(北京)分中心															
6	Test Guideline		(GB/T 19897-2007) 24-2019 植物品种测试方法(玉米)															
7	Growing Cycles		第1周期: 2020年05月10日—2020年10月20日							北京								
8			第2周期: 2021年05月10日—2021年10月20日							北京								
9	Source of		相似品种:															
10			0.95 中亲227; 0.95 中亲205															
11																		
12																		
13	Similar Varieties		Similar Variety		Method		Distance		Similar Variety		Method		Distance					
14			1						2									
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## ANALYSIS OF DISTINCTNESS——COYD

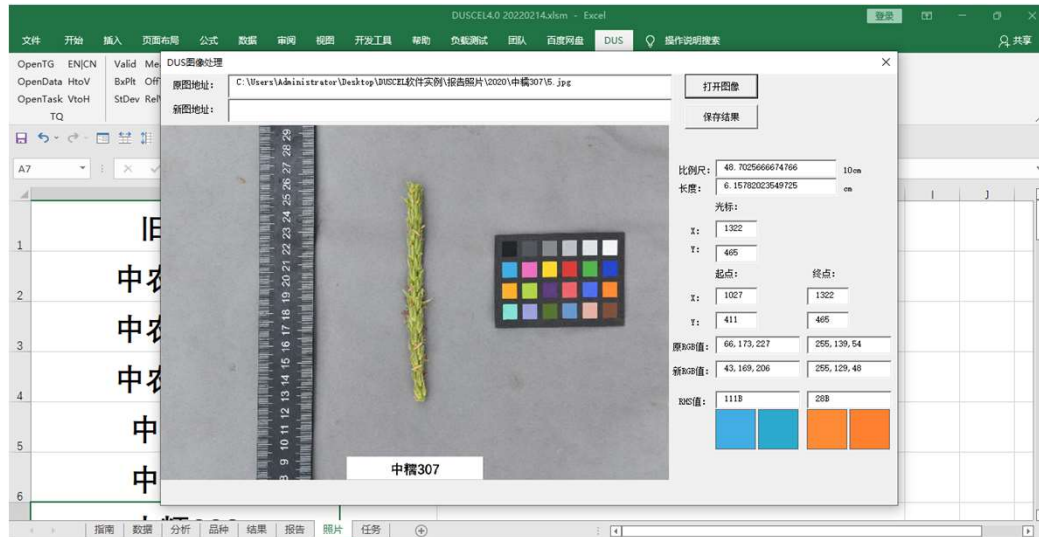
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
1	品种	品种	评价数量	4	4	5	5	17	17	18	18	19	19	20	20	23	23	24	24	26.2	26.2	27.2	
2	品种	BM458	2	56	57	60	61	51.85	52.15	33.65	34.775	20.9	19.05	31.275	32.1	89.75	92.55	11.51	30.3	115.4	108.65	275.4	
3	品种	CL21912	2	54	55	55	58	40.225	42.04	24.95	24.715	16.8	18	24.1	25.605	71.85	76.55	10.775	9.665	102.75	82.45	227.15	
4	品种	DBP15	2	60	57	61	60	43.8	50.845	26.95	31.475	12	11.1	28.475	35.115	71.85	87.315	9.95	10.825	86.4	104.75	223.85	
5	品种	DK17	2	58	59	59	59	37.675	40.72	27.4	30.74	10.4	10.6	24.1	27.38	82.95	97.22	10.325	11.54	106.8	130.25	285.8	
6	品种	FM70	2	53	53	54	56	36.95	37.615	23.05	24.44	20.95	21.05	17.9	20.90	74.2	83.135	10.655	10.195	88.6	91.15	219.35	
7	品种	HMR920	2	53	56	56	57	34.85	36.71	26.9	29.935	5.5	5.8	22.325	24.183	78.95	86.10	10.5	9.915	85.45	96.8	226.35	
8	品种	HN1727	2	50	51	51	53	32.25	30.825	22.1	20.175	19.65	20.45	17.85	20.875	80.45	81.05	9.975	9.6	72.4	73.65	206.45	
9	品种	HQCO69	2	60	61	61	62	41.125	41.075	30.325	29.24	8.1	7.85	25.35	25.115	87.35	96.87	11.35	11.405	119.75	133.63	303.15	
10	品种	HY607	2	56	52	58	54	38.8	42.23	28.15	30.375	7.5	7.8	23.75	26.085	70.3	87.485	9.47	9.84	64.9	75.55	188.7	
11	品种	JP995	2	56	59	58	60	43.975	46.07	32.45	35.705	7.55	7.95	27.3	30.185	82	87.305	10.325	11.09	104.75	100.3	262.8	
12	品种	JKN2000	2	66	62	68	63	38.49	39.295	25.13	25.1	19.15	19.3	20.79	22.265	84.185	91.515	11.015	11.495	144.55	172.25	286.95	
13	品种	KT633	2	62	65	64	69	40.7	42.6	25.75	25.915	20.15	17.35	25	26.05	89.3	96.185	13.23	12.115	109.55	129.55	296.05	
	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
135	品种名称	12S COVID	BM380	BM41912	BM492	BTN168	CH135	CH190	CH2581	CH2919	CH3493	CH3840	CH3916	CH4691	CH5086	CH5615	CH6193	CH6229	CH656	CH6960	CH642101	CH7119	
136	品种名称	14 BM458	11	13	11	6	4	6	5	7	10	7	8	5	8	6	5	6	5	6	5	7	9
137	品种名称	2 CL21912	8	7	6	7	6	5	6	7	9	3	4	5	6	6	6	11	9	7	7	4	7
138	品种名称	2 DBP15	6	6	8	7	6	5	6	7	10	7	8	5	8	6	5	6	6	5	6	4	7
139	品种名称	2 DK17	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
140	品种名称	2 FM70	11	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3
141	品种名称	2 HMR920	10	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
142	品种名称	2 HN1727	6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
143	品种名称	2 HQCO69	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
144	品种名称	2 HY607	6	7	6	7	4	5	6	5	4	5	6	4	5	7	6	4	5	6	5	4	5
145	品种名称	2 JP995	8	9	6	5	6	5	4	5	6	5	4	5	6	5	4	5	6	5	4	5	6
146	品种名称	2 JKN2000	13	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	品种	评价数量	

## CHECKING AND RENAMING PHOTO FILES

	A	B	C	D	E	F
	OldName	Type	Address	NewName	Photo1	Photo2
1						
2	1.jpg	文件	D:\西葫芦\2020\2017-0971A			
3	2.jpg	文件	D:\西葫芦\2020\2017-0971A			
4	3.jpg	文件	D:\西葫芦\2020\2017-0971A			
5	4.jpg	文件	D:\西葫芦\2020\2017-0971A			



## ANALYSIS OF PHOTOS



## VERIFICATION OF CHARACTERISTICS AND TRIAL

Estimate sample size by normal data

Estimation of sample size for normal data 常规数据样本含量估计

显著水平

标准差

Δ均值差

☒ 错误

Default 默认值

☒ Est. of Population Mean 总体均值估计

☐ Est. of two sample mean 两样本均值差估算

☐ Power est. of Population Mean 总体均值带功效估计

☐ Power Est. of two sample mean 两样本均值差带功效估算

Minimum sample size 最小样本容量

Estimate sample size by rate data

Estimation of sample size for percentage value 百分率数据样本容量估计

显著水准  $\alpha$

处理1百分率  $p_1$

处理2百分率  $p_2$

百分率差  $\Delta$

☒ 错误  $\beta$

Default 默认值

☐ Est. of total percentage 总体百分率估算

☒ Power est. of total percentage 总体百分率带功效估计

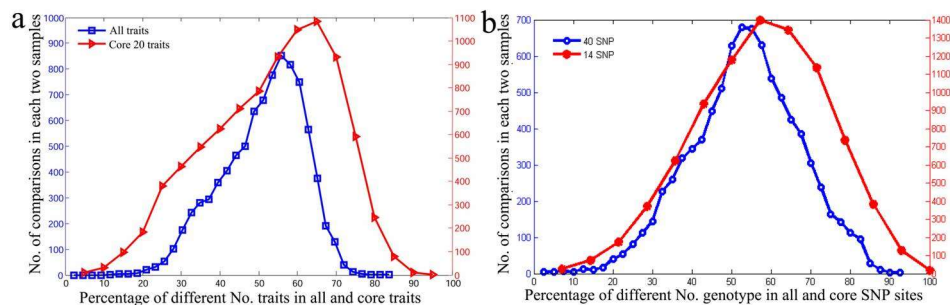
Minimum sample size 最小样本容量

## FUTURE

- ◆ 1. to develop DUSCEL4.0 for TWM1 meeting.
- ◆ 2. to reduce data analysis functions and increase image analysis functions.
- ◆ 3. to write a book on DUS theory based on field growing trial.
- ◆ 4. to draft a test guideline on trial design and data analysis on DUS.
- ◆ 5. to draft a protocol on image taking and analysis.

## FUTURE

- ◆ 6. Explore forecast model between molecular distance and morphological distance.

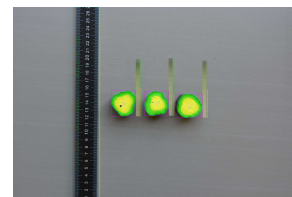
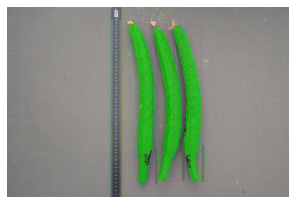
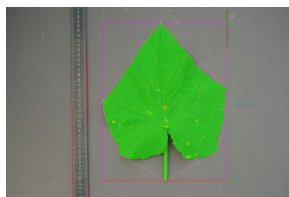


# FUTURE

## ◆7. Developing a big data platform for DUS Examination (4.0).

分析部位: ☐ 幼苗 ☒ 叶 ☐ 果实

品种	品种类型	图片	分析结果图片	分析结果
HG申请品种1	申请品种			图像名: aee8a40d-1d2f-49c6-a5d6-f322736f37ab.jpg; red: 0; orange: 171; yellow: 17876; green: 3870274; cyan: 0; blue: 0; purple: 0; 叶片长度 (像素): 2938; 叶片长度 (mm): 303.277; 叶片面积 (平方mm): 41597.9
HG申请品种2	申请品种			图像名: ddab3cf8-ed70-48ab-bd5a-311e3ce0e8b8.jpg; red: 0; orange: 171; yellow: 17876; green: 3870274; cyan: 0; blue: 0; purple: 0; 叶片长度 (像素): 2938; 叶片长度 (mm): 303.277; 叶片面积 (平方mm): 41597.9



THANK YOU FOR YOUR  
ATTENTION!

Yang Kun  
yangkun@caas.cn  
+86-10-8210 5623  
+86-(0)1391 1259 308