



PVP Database in China

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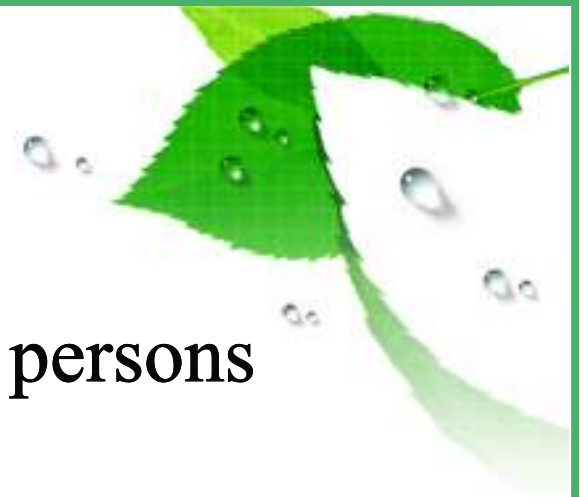


History



- ❖ Tools used to manage and process data:
 - ❑ 1999~2004 Ms Word and Excel
 - ❑ 2004~2011 Several small tools, including Report Producing System made by Ms Excel, PVP DUS management database made by Ms Access respectively, Special programs used to generate official documents made by VB, etc.
 - ❑ 2008~2011 Developing a new database
 - ❑ 2011~2014 Application of the unified Database

History 2008-2011



- ❖ Project started from 2008
- ❖ A work team composed by 20 key persons
- ❖ PVP database has four parts:
 - ❑ Application Management System (AMS)
 - ❑ Variety Description Database (VDD)
 - ❑ Data Analysis System (DAS)
 - ❑ Image Analysis System (IAS)

Application Management System



- ❖ Developed by an agricultural software company
- ❖ Written by .Net and SQL
- ❖ Online operation
- ❖ Used by all relevant units of PVP

植保办公系统 - Microsoft Internet Explorer

文件(F) 编辑(E) 查看(V) 收藏(A) 工具(T) 帮助(H)

地址(0) http://www.cnvpv.cn/pvps/default.aspx

← 输入关键字 直接搜索 → 转到

农业部植物新品种保护审查系统

桌面 | 帐户信息 | 注销 | 帮助

审查管理 | **测试管理** | 品种测试 | 品种保藏 | 复审处理

测试管理

- 任务管理
- DNA检测
- 繁殖材料
- 试验管理
- 测试报告
- 测试指南
- 已知品种
- 综合统计
- 字典管理
- 导入导出

Reception and Examination | DUS Testing | Trial | Seeds Storage | Re-examination

Welcome...

tasks

农业部植物新品种保护审查系统



Main functions of AMS



- ❖ Role definition
- ❖ Task reminding
- ❖ Input new data and mistake check
- ❖ Calculate or convert data automatically
- ❖ Output in batches
- ❖ Inquiring, reporting and statistical analysis
- ❖ Message exchange

Variety Description Database



- ❖ Developed by an agricultural software company
- ❖ Written by .Net and SQL
- ❖ Online operation
- ❖ Used by DUS Testing Division and 14 sub stations
- ❖ So far, it contains 93 TGs (176 versions), 12899 Varieties

Login interface



Structure of VDD



Basic information

Accession	Fragment size (bp)	Marker	Band intensity	Marker position (bp)	Marker size (bp)
Accession 1	24	Marker 1	100	100	100
Accession 2	18	Marker 2	100	100	100
Accession 3	12	Marker 3	100	100	100
Accession 4	8	Marker 4	100	100	100
Accession 5	6	Marker 5	100	100	100
Accession 6	4	Marker 6	100	100	100
Accession 7	3	Marker 7	100	100	100
Accession 8	2	Marker 8	100	100	100
Accession 9	1	Marker 9	100	100	100
Accession 10	1	Marker 10	100	100	100

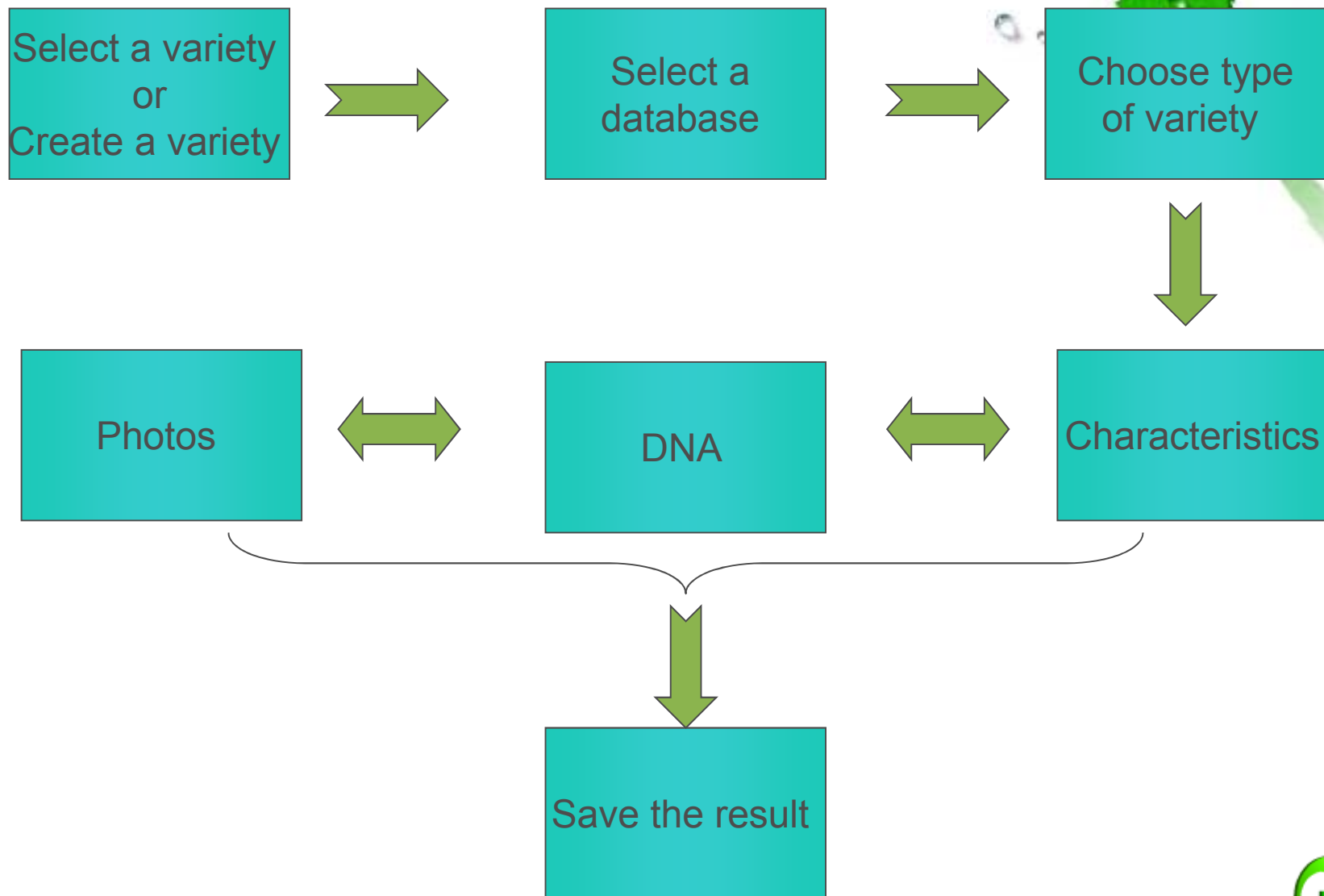
DNA fingerprint

Accession	Sample name	Parent	Marker	Marker position (bp)	Marker size (bp)
Accession 1	Sample 1	Parent 1	Marker 1	100	100
Accession 2	Sample 2	Parent 2	Marker 2	100	100
Accession 3	Sample 3	Parent 3	Marker 3	100	100
Accession 4	Sample 4	Parent 4	Marker 4	100	100
Accession 5	Sample 5	Parent 5	Marker 5	100	100
Accession 6	Sample 6	Parent 6	Marker 6	100	100
Accession 7	Sample 7	Parent 7	Marker 7	100	100
Accession 8	Sample 8	Parent 8	Marker 8	100	100
Accession 9	Sample 9	Parent 9	Marker 9	100	100
Accession 10	Sample 10	Parent 10	Marker 10	100	100

Description



to select similar varieties



to select similar varieties



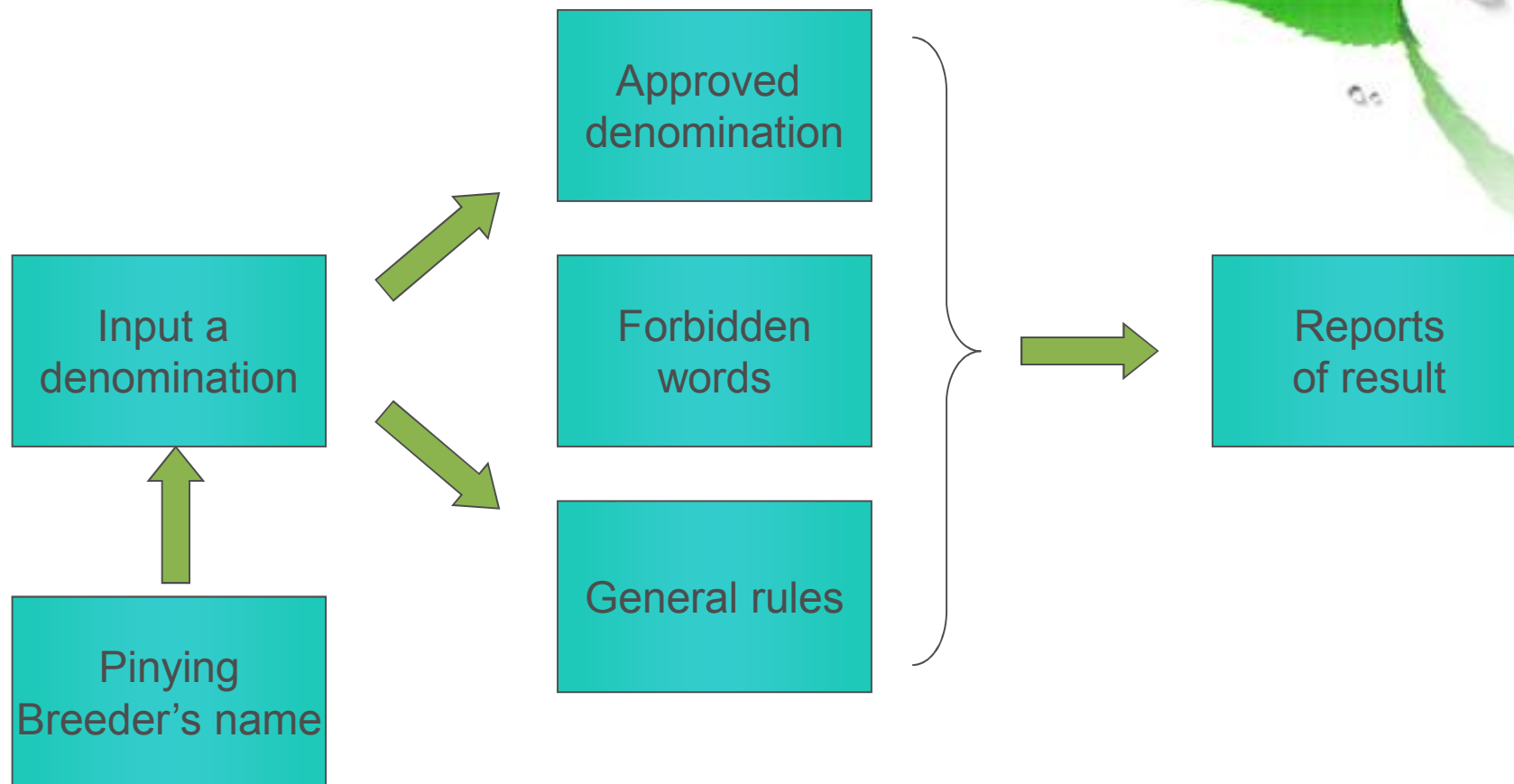
The software interface displays four different views for selecting similar varieties:

- Top Left:** A sidebar menu on the left lists various categories. The main area shows a table with columns for 'Variety', 'Parent', and 'Similarity'. A list of varieties is shown on the right.
- Top Right:** A table with columns for 'Variety', 'Parent', and 'Similarity'. It displays a list of varieties and their parent varieties.
- Bottom Left:** A table with columns for 'Variety', 'Parent', and 'Similarity'. It displays a list of varieties and their parent varieties.
- Bottom Right:** A table with columns for 'Variety', 'Parent', and 'Similarity'. It displays a list of varieties and their parent varieties. A large image of a corn cob is shown on the right side of the table.

The interface includes a search bar and various filters to refine the selection process.



to check denomination



to check denomination



农业植物已知品种数据库

品种信息 对比筛查 近似品种初选 DRA筛选 **命名审查** 标准品种选取

当前位置: 对比筛查 >> 命名审查筛选

品种名称关键字: 植物种类: 品种名称拼音: 拥有者:

限制名称的筛选结果 (5)

限制名称	命名规范	限制类型	拥有者
仅一个汉字组成	国内地名		国家
女圣区	国家名称		国家
圣露西亚岛	国家名称		国家
圣马力诺	身份误解		山东省水稻研究所
圣稻			

批准名称的筛选结果 (26)

批准名称	植物种类	申请号	申请人	审定号	报审单位
圣香192	水稻	20120051.0	山东省水稻研究所		
圣香985	水稻	20120050.1	山东省水稻研究所		
圣稻2572	水稻	20120049.5	山东省水稻研究所		
圣稻101	水稻	20120048.6	山东省水稻研究所		
圣稻068	水稻	20111241.0	山东省水稻研究所		
圣稻172	水稻	20111240.1	山东省水稻研究所		

技术支持: 北京派得伟业科技发展有限公司

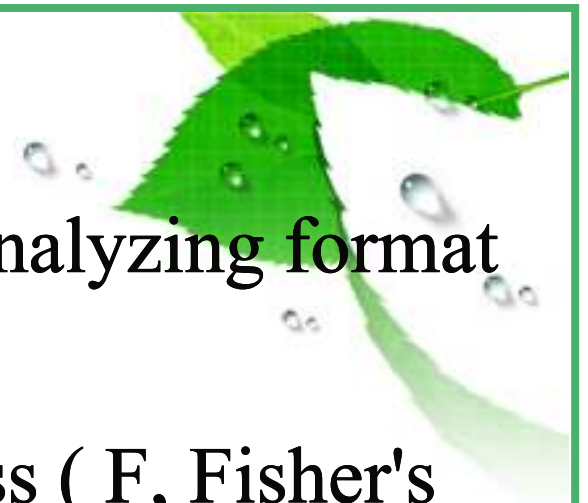
Data Analysis System



- ❖ Developed by a statistical expert
- ❖ Written by Delphi
- ❖ Green software in PC
- ❖ Used by sub-stations



Main functions of DAS



- ❖ Converting from raw data to pre-analyzing format
- ❖ Detecting abnormal datum
- ❖ Methods for examining distinctness (F, Fisher's exact, LSD, COYD)
- ❖ Methods for examining uniformity (off-types, COYU)

Main functions of DAS



文件(F) 原始数据整理(W) 异常值判定(A) COYD-COYU 异型株法(Y) 生成报表(B)

作物: [] 地点: [] 年份: 1995 到 2009 性状: []

	A	B	C	D	E	F	G	H	I
1	1	1	1	43	80				
2	2	2	1	53	79				
3	3	1	1	50	72				
4	4	7	1	43	68				
5	5	2	9	69	72				
6	6	1	1	96	72				
7	7	1	1	51	70				
8	8	2	8	64	63				
9	9	1	1	44	62				
10	10	2	1	49	62				
11									
12									
13									

异常值判定



Form2

品种名: abc 样本量: 200 异性株数: 3

总体标准: 1 % 接受概率: 95 % 确定 清空

品种名	样本量	总体标准	异性株数	允许最大异性株数	接受概率	一致性判断
	n	p		k	1-alpha	
abc	200	0.01	3	5	0.95	一致

异型株法

测试版: D:\软件\异株-2 测试3--技术报告\dus2012\COYU.DUS

文件 数据处理 异常值判定 特异性统计检验 一致性统计检验 常用统计检验方法

	A	B	C	D	E	F	G	H
1	计算结果	当前日期: 2014/5/13 15:59:05						
2	品种	平均	Adj. LnSD+1	年份 1	年份 2	年份 3		
3	R1	58	2.2732	2.3890	2.1001	2.3043		
4	R2	64	2.1151	2.3460	1.9955	2.0038		
5	R3	68	2.1387	2.5265	1.9955	1.8941		
6	R4	71	2.1343	2.5536	1.8719	1.9774		
7	R5	72	2.1723	2.6392	1.9838	1.8941		
8	R6	74	2.1027	2.5173	1.7000	2.0908		
9	R7	75	2.1044	2.5973	1.9955	1.7204		
10	R8	76	1.9840	2.5143	1.4730	1.8546		
11	R9	78	2.3062	2.6714	1.9720	2.2751		
12	R10	78	2.2295	2.4795	1.9955	2.2138		
13	R11	80	2.0508	2.4601	1.6016	2.0908		
14	C1	52	2.1935	2.3254	2.0844	2.1708		
15								
16	ANOVA Table							
17	变异来源	SS	df	MS	F-value	p-value		
18	年份	2.5052	2	1.2526	11.9319	0.0001		
19	品种	0.2754	10	0.0275	0.2623	0.9852		
20	误差	0.5788	20	0.0289				
21	总计	3.3594	32	0.1050				
22								
23	n=33952 UCP=2.4909							
24	C1	52	2.1935	2.4909				
25								

测试版: C:\Documents and Settings\yk\桌面\dus2012\COYD.DUS

文件 数据处理 异常值判定 特异性统计检验 一致性统计检验 常用统计检验方法

	A	B	C	D	E	F	G	H
1	计算结果	当前日期: 2012-01-11 9:19:29						
2	Class	Count			Percent			
3		Y1	Y2	Y3	Y1	Y2	Y3	
4	1	92	86	95	12.4400	11.8400	11.3800	
5	2	115	105	94	14.2100	13.5200	12.9900	
6	3	62	63	57	8.2400	7.8400	7.5300	
7	Heterogeneity	Chi-Square=1.7049	df=4	p=0.7898				
8	候选品种	适合度平方	F值	自由度	p值			
9	Candidate 1-1	122.3725	143.5511	2	4	0.0069		
10	Candidate 1-1	365.8517	429.1686	2	4	0.0023		
11	Candidate 1-1	1614.8946	1894.3794	2	4	0.0005		
12	Candidate 1-1	263.3179	308.8896	2	4	0.0032		
13	Candidate 1-1	6.0728	7.1238	2	4	0.1231		
14	Candidate 2-1	152.0083	178.3159	2	4	0.0056		
15	Candidate 2-1	457.8833	537.1277	2	4	0.0019		
16	Candidate 2-1	2004.5975	2351.5270	2	4	0.0004		
17	Candidate 2-1	330.8902	388.1563	2	4	0.0026		
18	Candidate 2-1	5.0435	5.9163	2	4	0.1446		
19								



Image Analysis System



- ❖ developed by a professional company
- ❖ written by VB
- ❖ secured in PC
- ❖ used by sub-stations

Image Analysis System



登录农业部植物新品种保护图像分析系统

农业部植物新品种保护图像分析系统

DUSP V1.0 T20120907-X1149

☐ 进入系统时启动色彩校正系统参数（推荐）？

登录界面

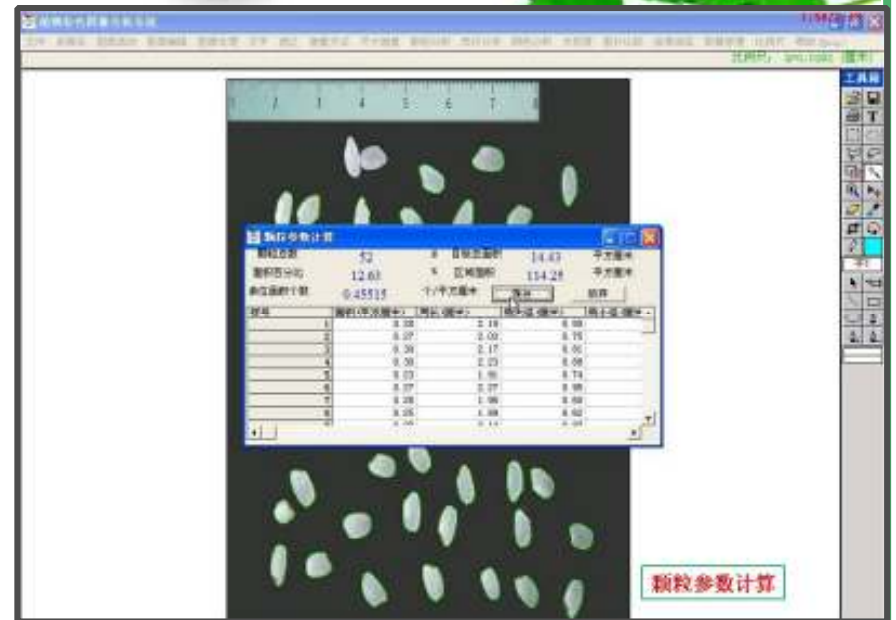
  

请输入密码:



Main functions of IAS

- ❖ Shape analysis
- ❖ Color analysis
- ❖ Image comparison
- ❖ Image storage
- ❖ Data storage



Hard wares of IAS



Costs



- ❖ 1. Development fee: 2,039,000 RMB
 - ❑ 1.1 AMS: 849,000 RMB
 - ❑ 1.2 VDD: 150,000 RMB
 - ❑ 1.3 DAS: 200,000 RMB
 - ❑ 1.4 IAS: 240,000 RMB
 - ❑ 1.5 Hardware of IAS 600,000RMB
- ❖ 2. Maintance fee: 300,000 RMB /year

Benefits



- ❖ 1. Made our work transparent, accurate and efficient.
- ❖ 2. Expanded the scope of known varieties for selecting similar varieties
- ❖ 3. Harmonized the TGs
- ❖ 4. Harmonized the key data among different units and made the exchange of data much easier

Future plan



- ❖ To enhance the speed of AMS and VDD
- ❖ To develop online application system
- ❖ To harmonize the four parts to work together
- ❖ To shorten the manual steps of IMS according to certain pictures
- ❖ To create English version of last three softwares

Appreciations



- ❖ We have learnt a lot from UPOV and it's members' experience, especially from The Netherlands, Japan, Germany, France, UK...
- ❖ Thank you for your sharing and help!
- ❖ Thank you for your attention!