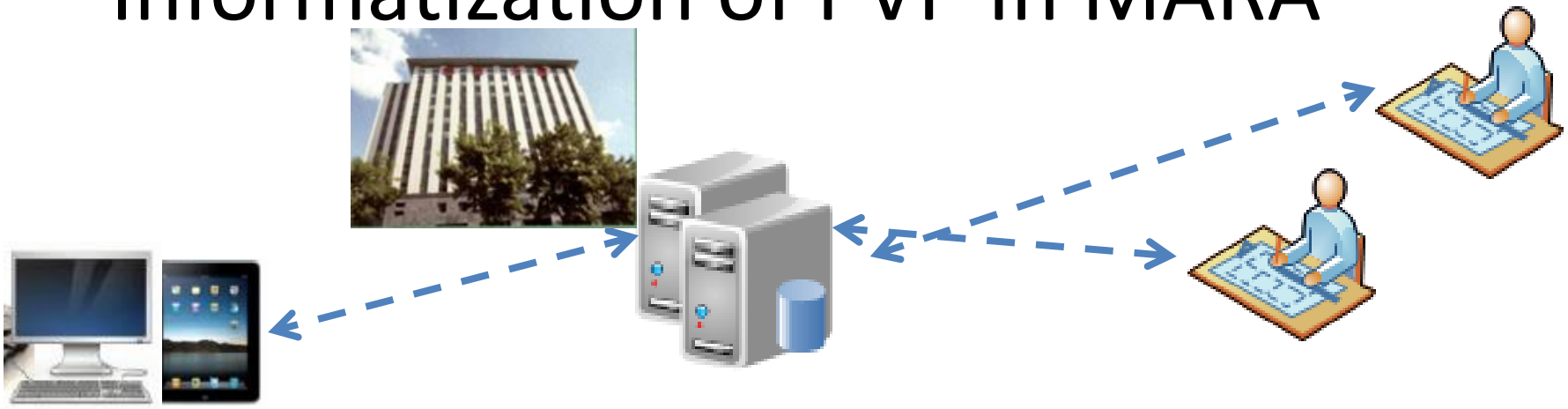
The Development Report on Informatization of PVP In MARA



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Development Center of Science and Technology, MARA, P. R. China

Online workshop, EAPVP Forum , 29 Sep. ,2022

Contents

1. General situation of plant variety protection

Chinese government is attaches great importance to the protection of intellectual property rights

- To amend and improve laws and regulations related to the protection of new varieties of plants

The seeds law had been amended in 2015 and enforced from January 1, 2016

- To improve the legal status of plant varieties protection
- To increase the punishment for counterfeiting and infringement on breeder's rights
- To strengthen breeders' confidence to PVP

The seeds Law had been amended in 2021 and enforced from March 1, 2022

- To establish EDV system
- To expand the range of breeders' rights from propagating material to harvest materials of new plant variety

  produce, reproduce, handle, promise to sell, sell, import, export, store

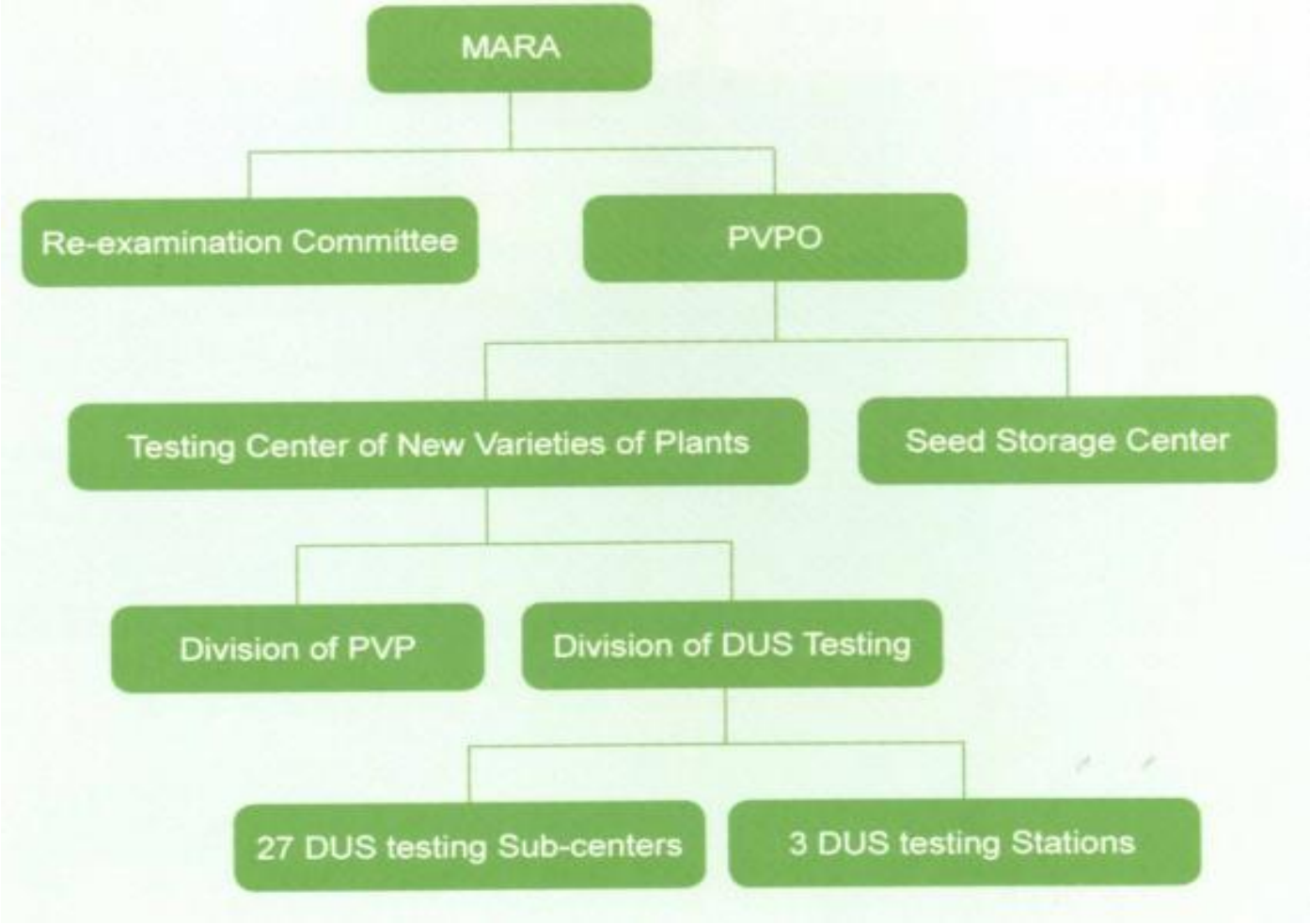
- All charges for plant varieties protection have been cancelled from April 2017

- The number of applications for variety rights is increasing

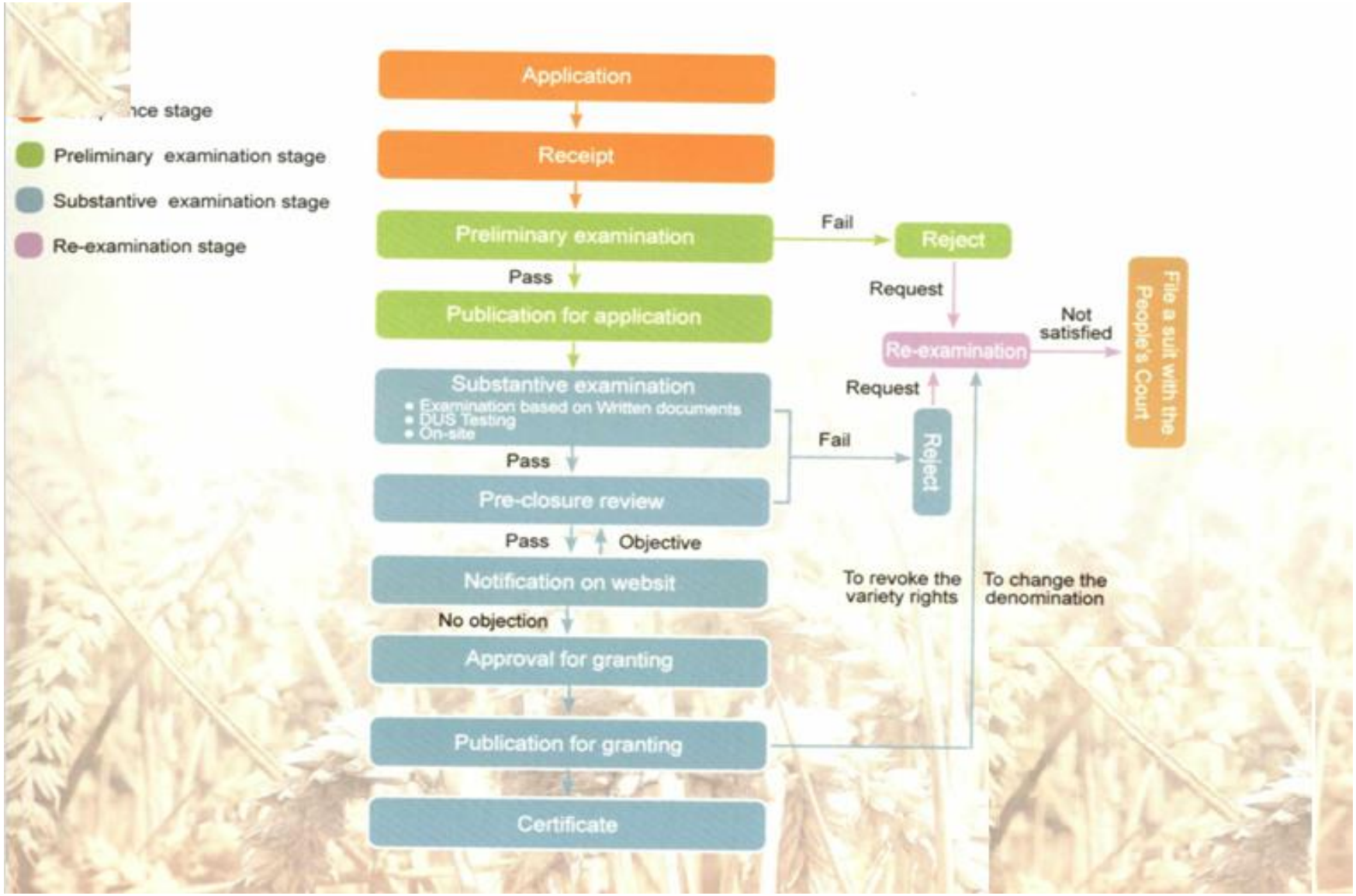
- The funding for testing is insufficient

  Due to the impact of COVID-19, the financial budget for variety protection is reduced

Organization of PVP in MARA



Work Procedure for PVP in MARA



➢ **MARA issued the 11th batch list of PVP On February,2019**

- Total list of protection : 191 genera or species

➢ **The DUS testing institutions have been expanded from 2016**

- 1 Headquarter s
- 27 test sub-centers
- 3 test stations(3 new)
- about 300 test examiners

- **Diversified DUS testing techniques and methods are used**

Issued:

- **DUS test guidelines** :250 genera or species
- **DNA fingerprinting standards**: 16 genera or species

  To assist in selecting similar varieties in DUS test

- **To accelerate investment and construction of informatization for protection of new varieties of agricultural plant from 2007**

2. Introduction on PVP information system in MARA

➢ Website of PVP

- http://www.moa.gov.cn,
- http://www.nybkjfzzx.cn
- http://202.127.42.145/home/indexWhole process electronic

➢ Information systems of PVP , Whole process electronic inculding appliaction,acception,examination,DUS test and identification,granting for PVP, ect. by online

- 2007: The office automation system
- 2019: The application system
- 2019: The examination management system
- 2019: The plant variety testing information data service platform

(1) Integrating information resources of PVP

The original independent website of new variety protection of agricultural plants was transferred two Websites

- To be part of the Seed Industry Big Data Platform, Information Network in MARA

  http://202.127.42.145/home/index

- To be two sub-columns of plant varieties protection and DUS test in the website of Development Center of Science and technology, MARA

  http://www.nybkjfzzx.cn

The Seed Industry Big Data Platform

公告类型 全部　作物种类　品种名称/暂定名称

申请号　申请日/授权日　至　申请人/品种权人

申请地区

查询　重置

序号	申请号	作物种类	品种名称/暂定名称	申请日/授权日	公告类型	申请人/品种权人	品种推广	性状描述
1	20191000840	玉米	维甜1号	2019-03-11	申请公告	广州小草农业科技有限公司	暂无	暂无
2	20191000751	普通小麦	豫农803	2019-03-07	申请公告	河南农业大学	暂无	暂无
3	20191000702	水稻	赣恢R310	2019-03-07	申请公告	江西省农业科学院水稻研究所	暂无	暂无

http://202.127.42.145/home/index

Development Center for Science and Technology

http://www.nybkjfzzx.cn

(2)Developing online electronic application and examination system

➢ Online electronic application system of PVP of agriculture

- It was connected with the State Council's government service platform in 2019
- To realize the single sign-on of the variety rights granted matters
- User identity verification, and then registration, for variety right application
- To saved the cost of application, and improved the efficiency of examining and granting breeders' right

➢ Application documents

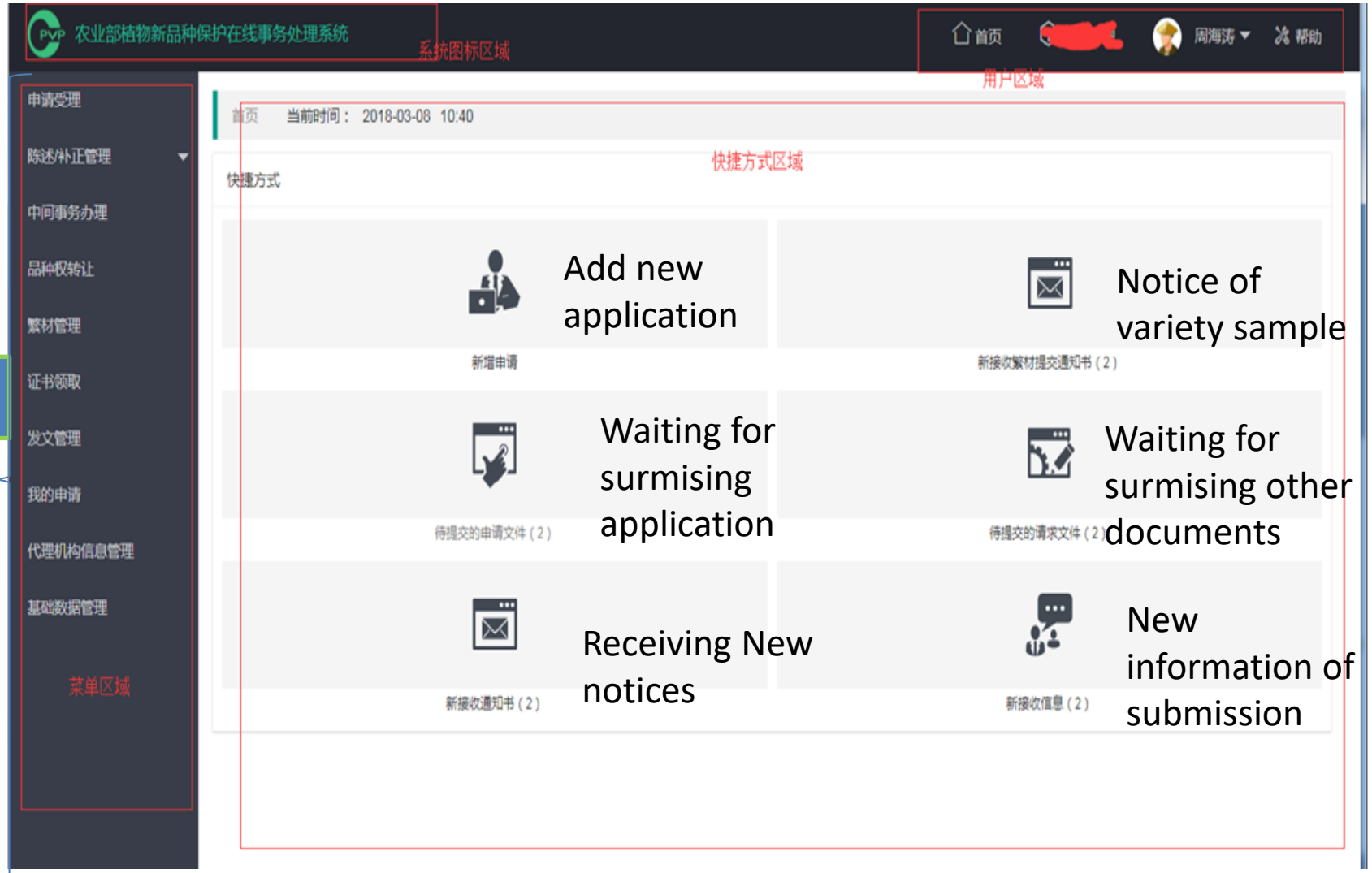
- Required documents: application form, instruction manual, photo and brief description, breeding pedigree, technical questionnaire, authenticity commitment letter
- Selected document: Power of Attorney

➢ Website: https://zwfw.moa.gov.cn/nyzw/index.html

https://zwfw.moa.gov.cn/nyzw/index.html

The Interface of Application

manual

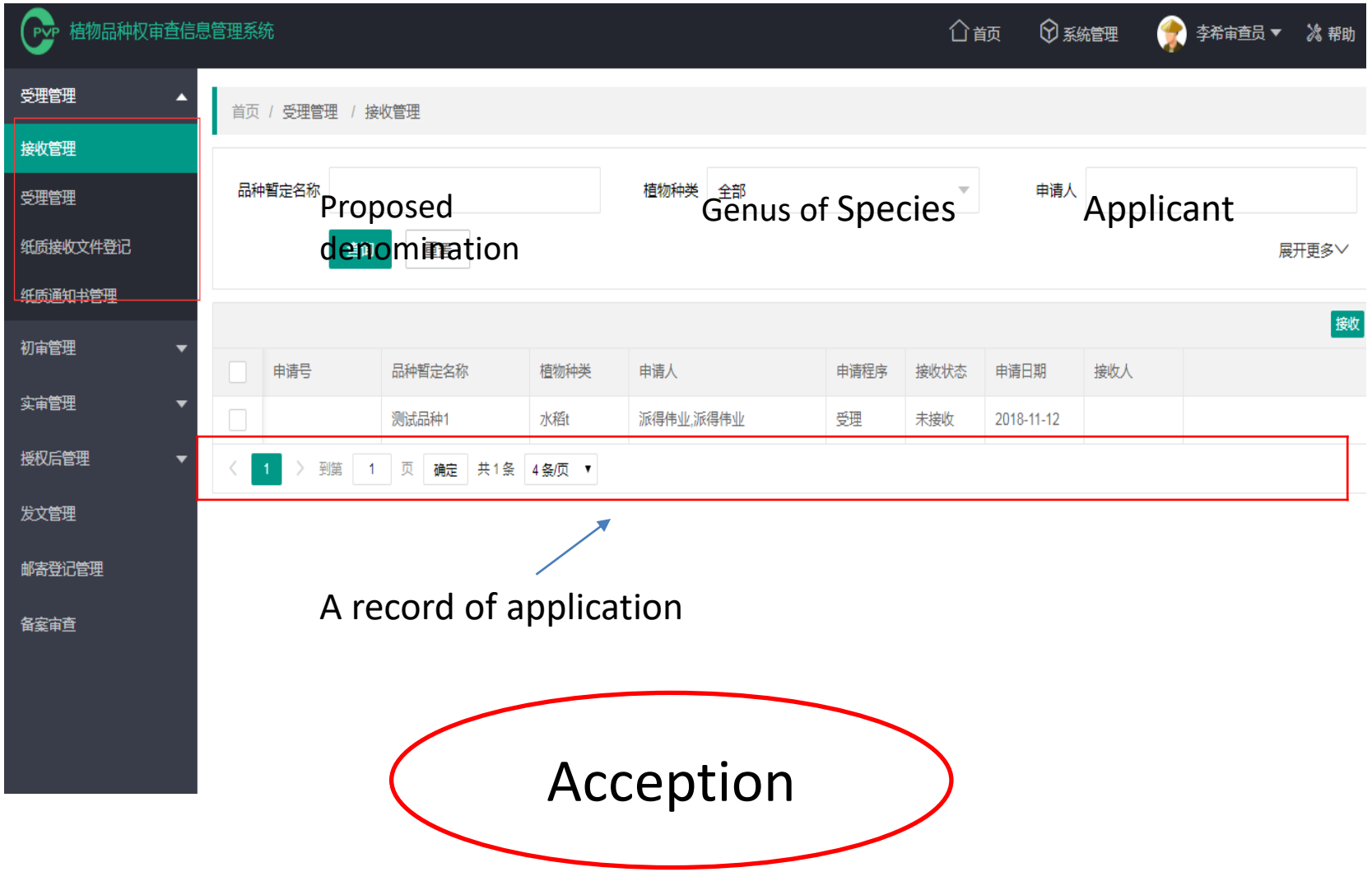


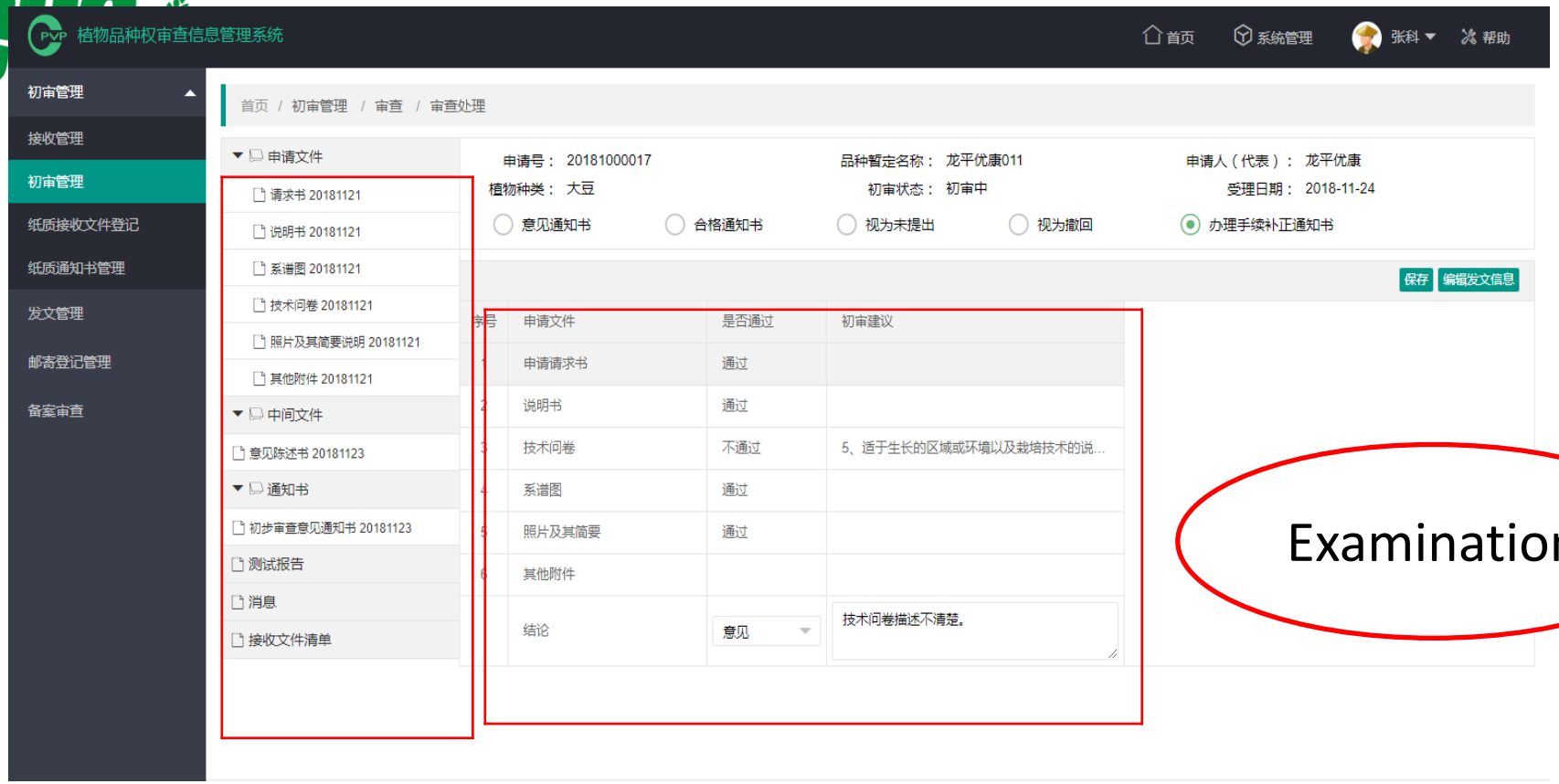
The examining system of PVP

- To be connected with the China Seed Industry Big Data Platform
- To realize the sharing of information on variety protection, approval and registration
- To regularly release granted variety information
- To provide information services for the issuance of seed business licenses, administrative law enforcement and rights protection, and improves variety management information.
- The level of industrialization has been improved, and the public service capacity of variety protection has been improved.

The Interface of examination

manual





Examination

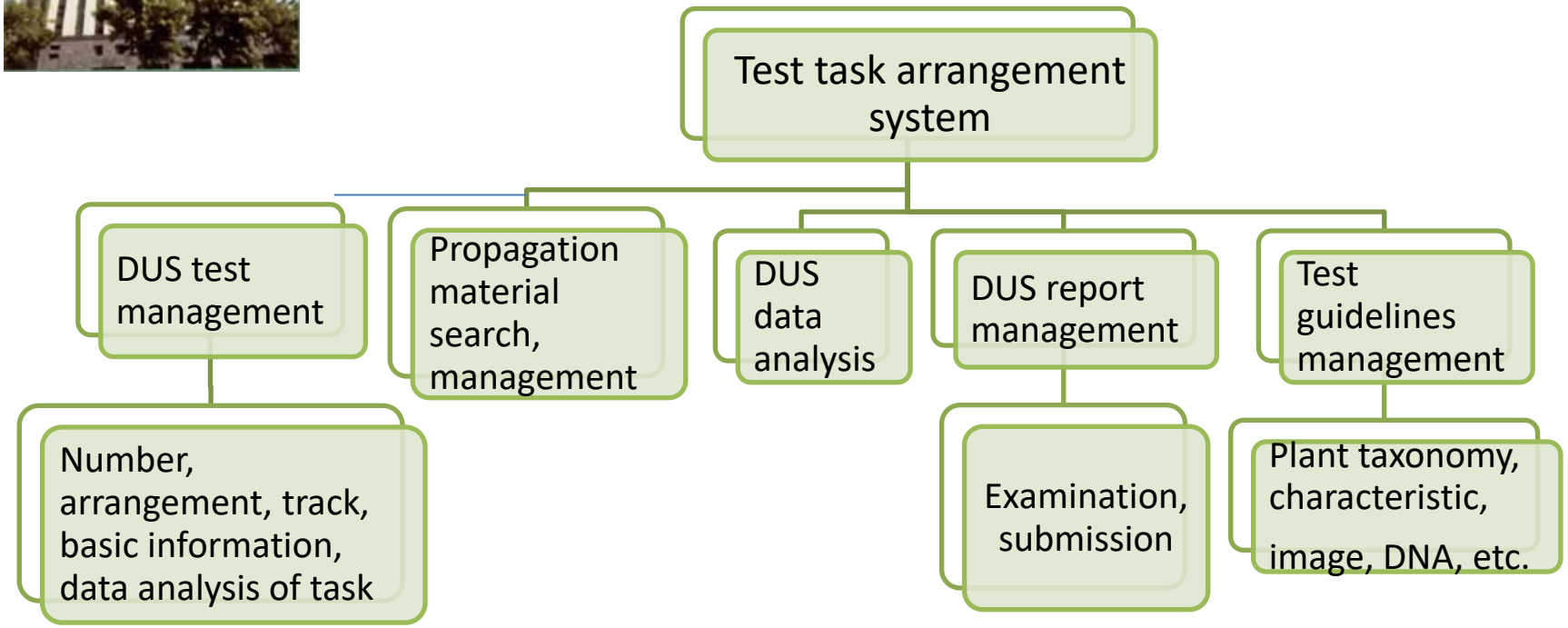
- To examine each item in the application documents
- To realize the electronic PVP work, which downloading, printing, uploading, mailing and registration of paper documents on application and examination.
- To have two-dimensional and bar code identification in each file
- To be foundation for keeping electronic files

(3)The project of DUS testing of Headquarters in MARA has been developing from 2016

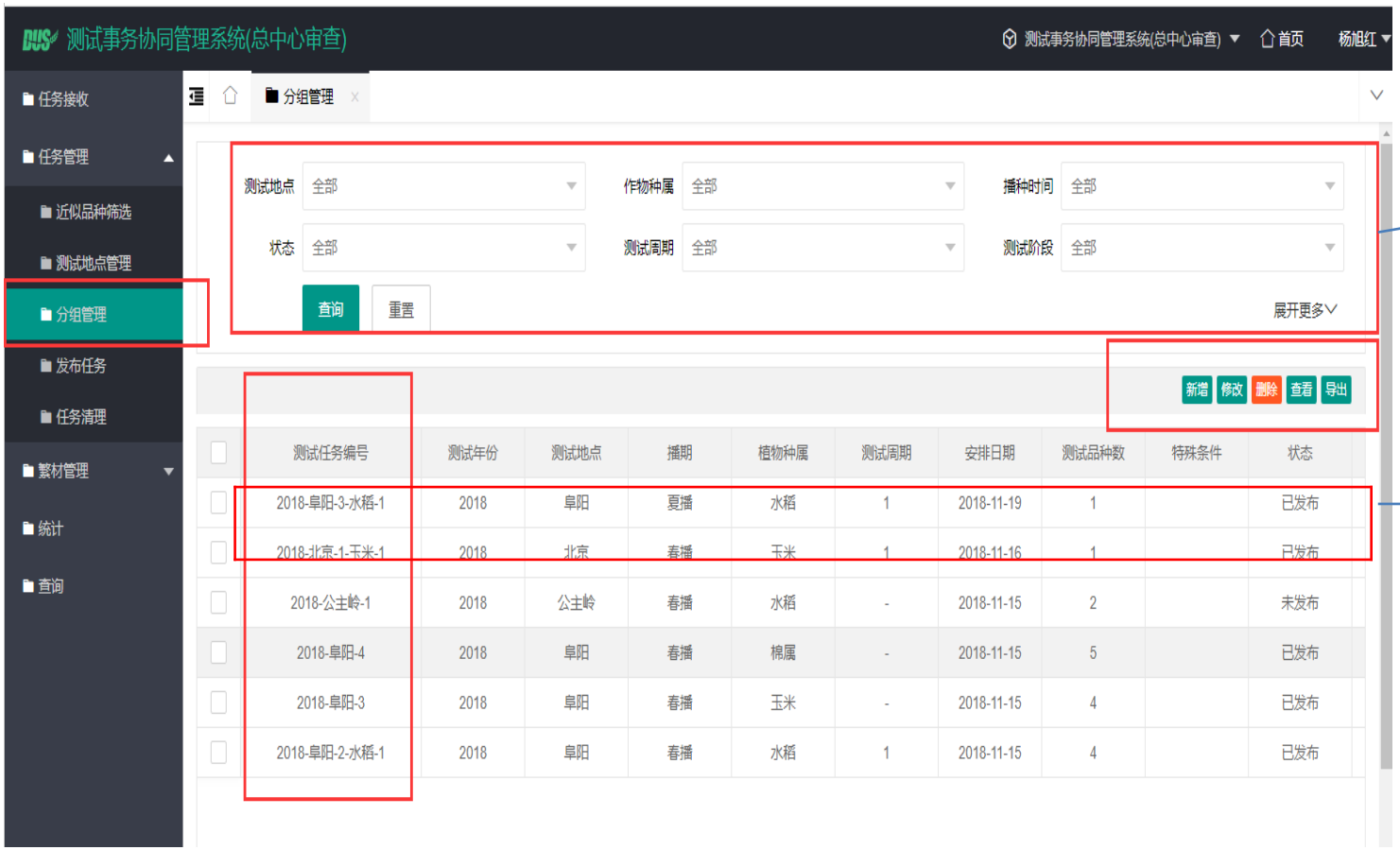
- Information data service platform for plant variety testing:
  - more than 6 million yuan
- User : DUS examiners, some applicants
- Targets:
  - Plant variety testing collaborative processing
  - Test data collecting and selecting
  - Test information sharing
  - Service precision for DUS test
- Structure: 32 modules
  - DUS test management
  - Propagation material management
  - Common knowledge varieties database
  - A transfer system of test information data

  ……

Module1: Headquarters of DUS Test



Interface of Headquarters of DUS Test

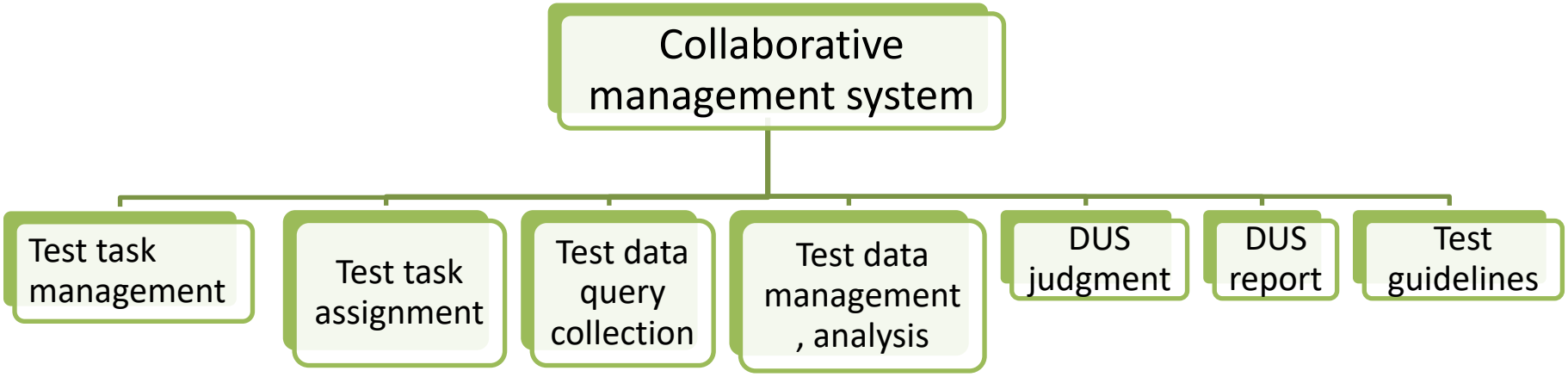


Test information

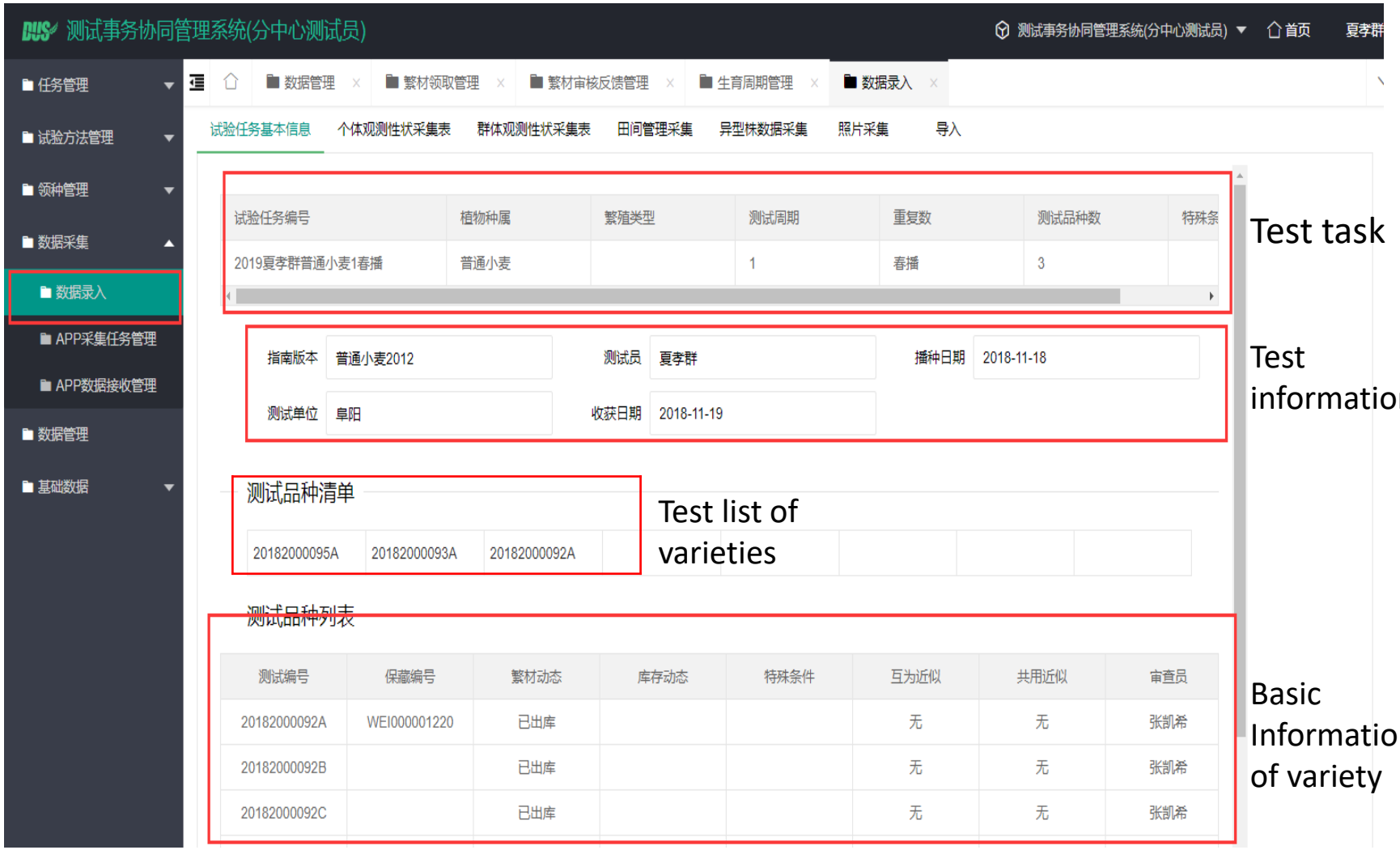
Test record

Management of Test task

Mould2: Sub-center and station of DUS test



Interface of Sub-center and station of DUS test



DUS examination report

植物品种特异性（可区别性）、一致性和稳定性审查报告

申 请 号	20191003384	品种名称	KLEDG18305
属 或 种	石竹属	品种类型	种苗
测试编号	20191003390A	测试指南	《植物品种特异性、一致性和稳定性测试指南 石竹属》GB/T 19557.23-2018
测试单位	云南省花卉技术培训推广中心		
生长周期	第 1 周期 2021 年 03 月 29 日--2021 年 12 月 31 日		
特异性（可区别性）	根据云南省花卉技术培训推广中心测试结果，判定具备特异性(可区别性)。		
一致性	根据云南省花卉技术培训推广中心测试结果，判定具备一致性。		
稳定性	根据云南省花卉技术培训推广中心测试结果，判定具备稳定性。		
结 论	√特异性(可区别性)√一致性 √稳定性（√表示具备，×表示不具备，○表示未判定）		
备 注			
测 试 中 心	审查员:（签名） 杨旭红 日期：2022 年 09 月 08 日	（盖章）：农业农村部植物新品种测试中心 2022 年 09 月 08 日	

DUS test report

植物品种特异性、一致性和稳定性测试报告

测试编号	20201001588A			品种名称	MIPEGB601			
植物属或种	矮牵牛(碧冬茄) *Petunia hybrida* Vilm.			品种类型	扦插苗			
测试指南	《植物新品种特异性、一致性和稳定性测试指南 矮牵牛》NY/T 2508-2013							
委托单位	农业农村部植物新品种保护办公室							
测试单位	农业农村部植物新品种测试（北京）分中心							
材料来源	申请人提供							
测试情况	测试周期	测试时间					测试地点	
	第 1 周期	2022 年 04 月 17 日--2022 年 06 月 30 日					北京	
有差异性状	近似品种名称	有差异性状		测试品种		近似品种		备注
		序号	性状名称	代码	描述	代码	描述	
	Shock Wave Yellow	23	花冠裂片：上表面主色	1B	黄色	155 D	白色	
	Shock Wave Yellow	30	花冠筒：内表面主色	145 A	淡绿色	151 B	绿棕色	
	Shock Wave Yellow	31	花冠筒：内表面脉的明显程度	2	极弱到弱	5	强	
	Shock Wave Yellow	32	花药:颜色	1	浅灰	2	黄白	
特异性（可区别性）	具备特异性							
一致性	具备一致性							
稳定性	具备稳定性							
结 论	√特异性(可区别性)√一致性 √稳定性（√表示具备，×表示不具备，○表示未判定）							
其他说明								
测试单位	测试员:王文英 日期:2022 年 08 月 11 日 测试员建议: 审核人: 日期: 审核人建议:	（盖章）： 年 月 日						

DUS test report

性状描述表

测试编号：	20201001588AMIPEGB601	测试员：	王文英
测试单位：	农业农村部植物新品种测试（北京）分中心		
性状	代码及描述		数据
1.植株:生长习性	1	直立	
2.植株:高度	9	极高	17.9cm
3.枝条:长度	9	极长	15.2cm
4.枝条:粗度	1	细	0.15cm
5.叶片:长度	2	极短到短	2.7cm
6.叶片:宽度	1	极窄	0.7cm
7.叶片:形状	5	菱形	
8.叶片:顶部形状	1	窄锐角	
9.叶片:斑	1	无	
10.仅适用无斑品种:叶片:上表面绿色程度	1	浅	1
11.叶片:泡状	1	无	
12.叶柄:长度	1	极短	0.7cm
13.花梗:长度	1	短	1.7cm
14.萼片:长度	1	极短	1.4cm
15.萼片:宽度	1	极窄	0.23cm
16.萼片:形状	6	匙形	
17.萼片:花青甙显色	1	无	
18.花:类型	1	单瓣	
19.花:直径	2	极小到小	2.9cm
20.花:形状	2	漏斗状	
21.花:脉的颜色	1	黄色	
22.花冠裂片:上表面颜色数量（不包括脉）	1	一种	
23.花冠裂片:上表面主色	1B	黄色	
24.仅适用于花冠裂片有两种或两种以上颜色的品种:花冠裂片:上表面次色			
25.仅适用于花冠裂片有两种或两种以上颜色的品种:花冠裂片:上表面次色分布			
26.仅适用于花冠裂片有两种或两种以上颜色的品种:花冠裂片:上表面第三色			
27.花冠裂片:上表面脉的明显程度	3	弱	3
28.花冠裂片:边缘波状强度	3	弱	3
29.花冠筒:长度	2	极短到短	2.0cm
30.花冠筒:内表面主色	145A	淡绿色	
31.花冠筒:内表面脉的明显程度	2	极弱到弱	2
32.花药:颜色	1	浅灰	

图像描述

图片描述：20201001588A_植株

图片描述：20201001588A_花

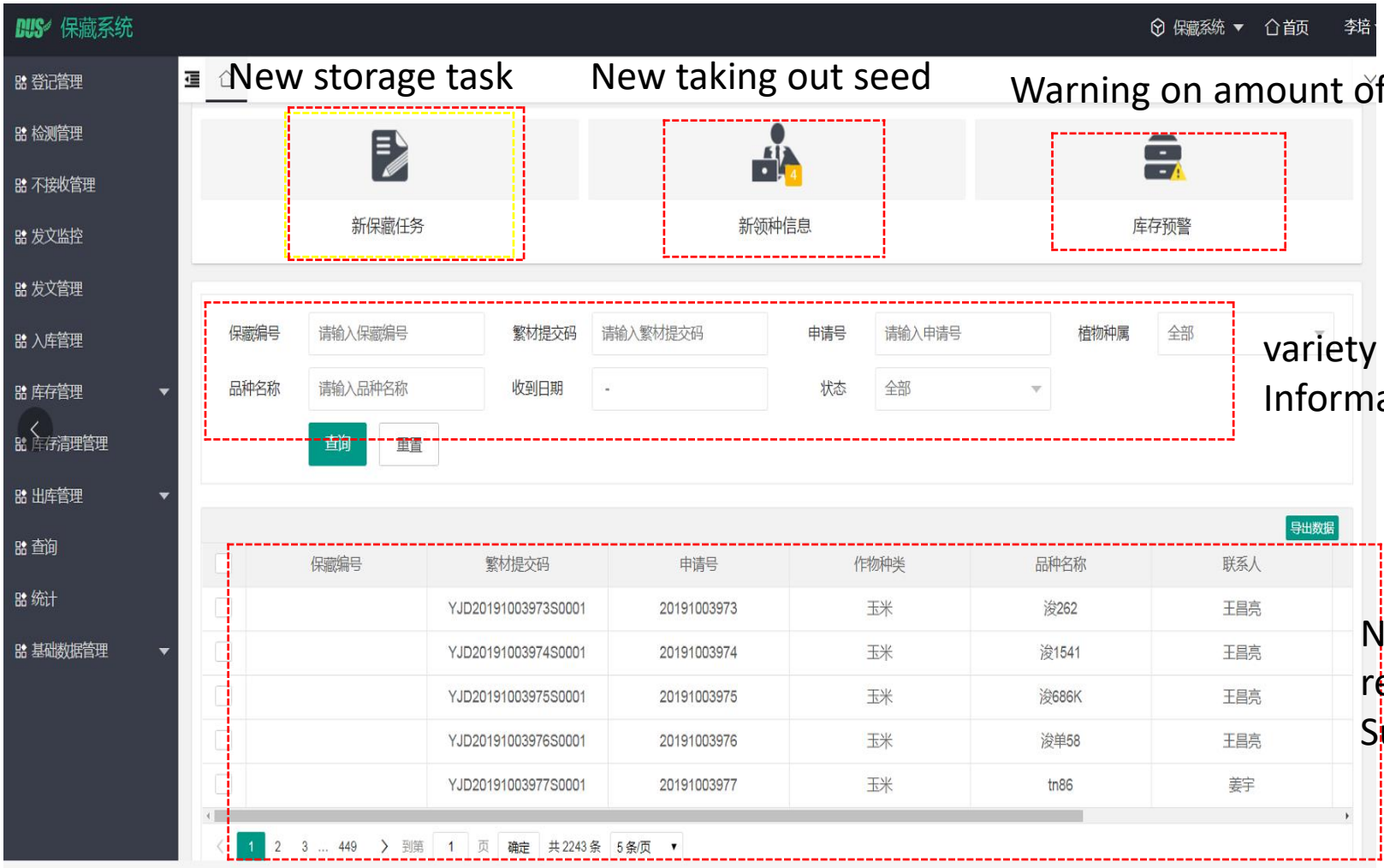
Module 3: Propagation material management

- All applications must be submitted propagation material sample

- Management department: Seed Storage Center
- Seed samples: to storage more than 60,000 from 1999

- Module Functions:
- Receiving, detecting, storage, early warning, deposit standard management of propagation materials, etc.
- Considering the differential management to sexual and vegetative propagation materials

The interface of propagation material management

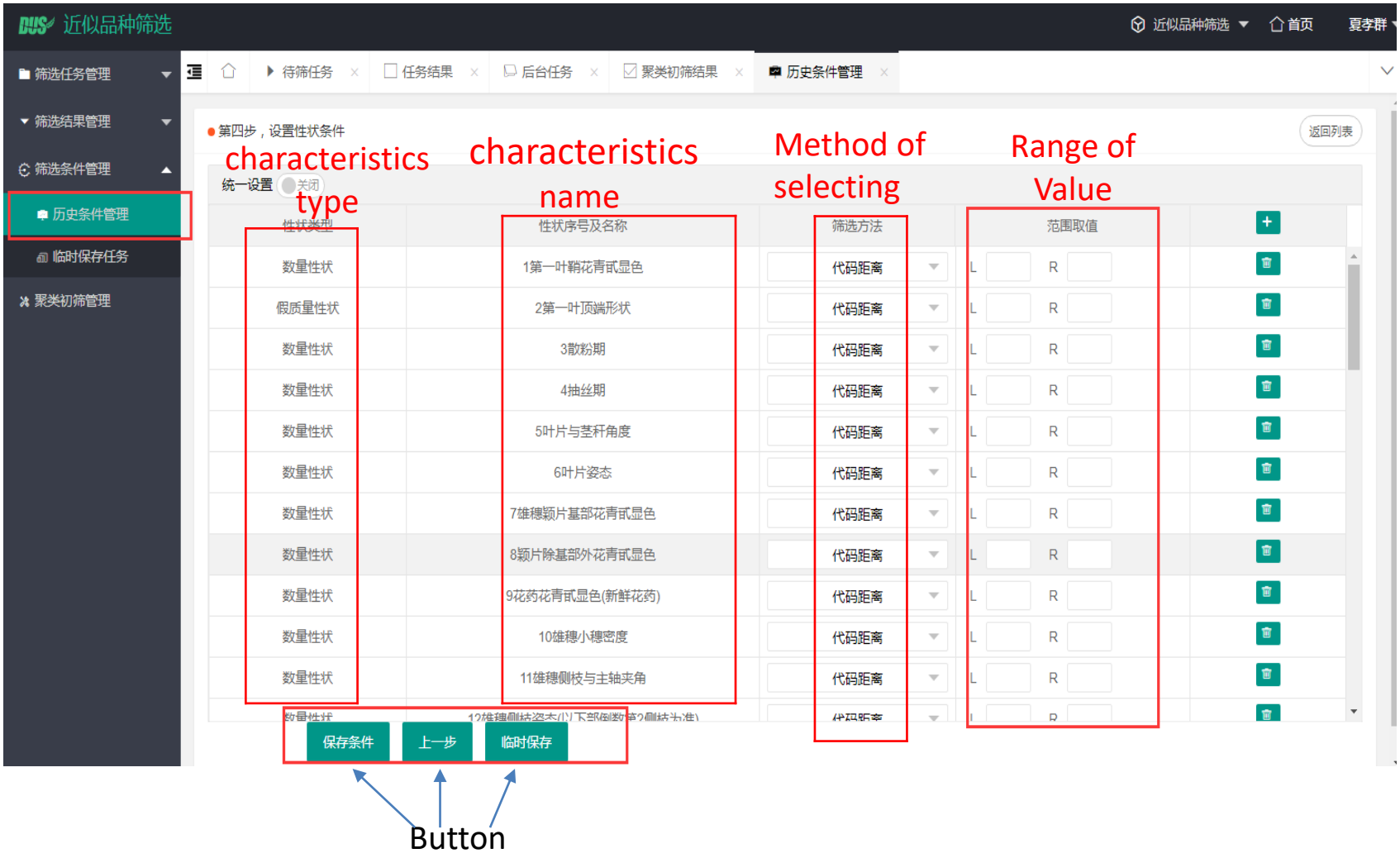


Module 4: Varieties database of common knowledge

- **Databases:** including database of characteristics, image and DNA fingerprints
- **Different crops:** building sub-database
- **Selection of similar variety :**

- To be based on database of characteristics, image ,and DNA fingerprint (if has)
- To support second selecting, background filtering, multi-tasking filtering,
- To set user filtering scope and permissions if needed

Selecting of similar Variety in Database



Situation of system data

In 2021,

- The system data was increased from 6.68G in 2020 to 9.98G in 2021
- The registered users for the Application System: 5,562
- The registered users of examination system :290

Application of system

➢ The numbers of applications and granting for PVP

- Up to 2021, the total number of applications is 50,510 cases
- The total number of granting breeders' rights is 19,726 cases

➢ The numbers of applications and granting for PVP by system since 2019

- The application 11,340 by the online application system
- Issued electronic acceptance notices 14,949
- Arranged test varieties 23,210 (including similar varieties),
- Examined DUS test reports 1,318
- Granted breeders' rights 3,218

➢ The dada are used

- The government releases information of PVP and formulates policies of PVP
- To provide UPOV with agricultural PVP data :15,000 records in 2021

Figure 1 Statistics on the numbers of application and granting of variety rights from 1999 to 2021 (automatically displayed by the system)

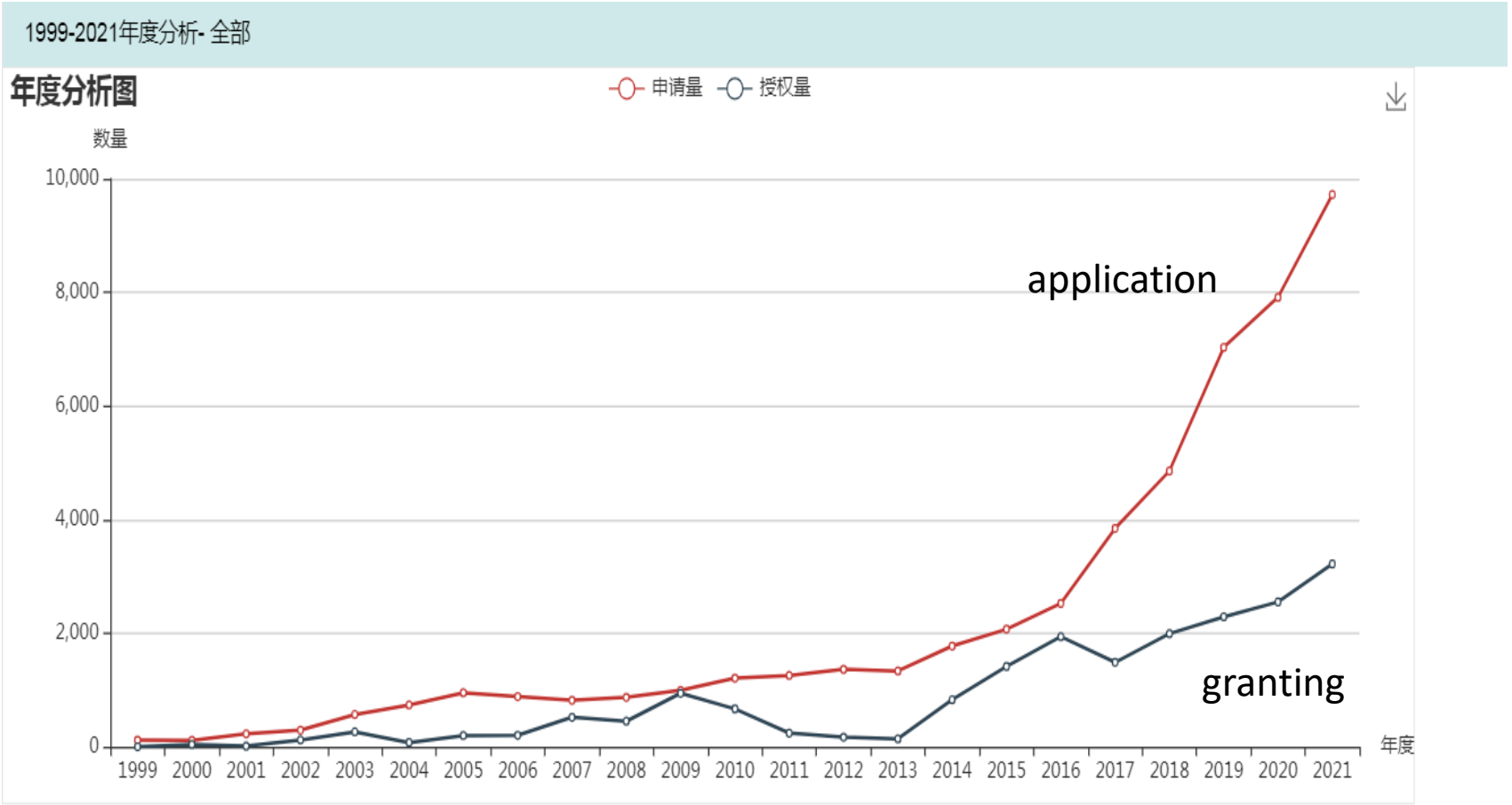
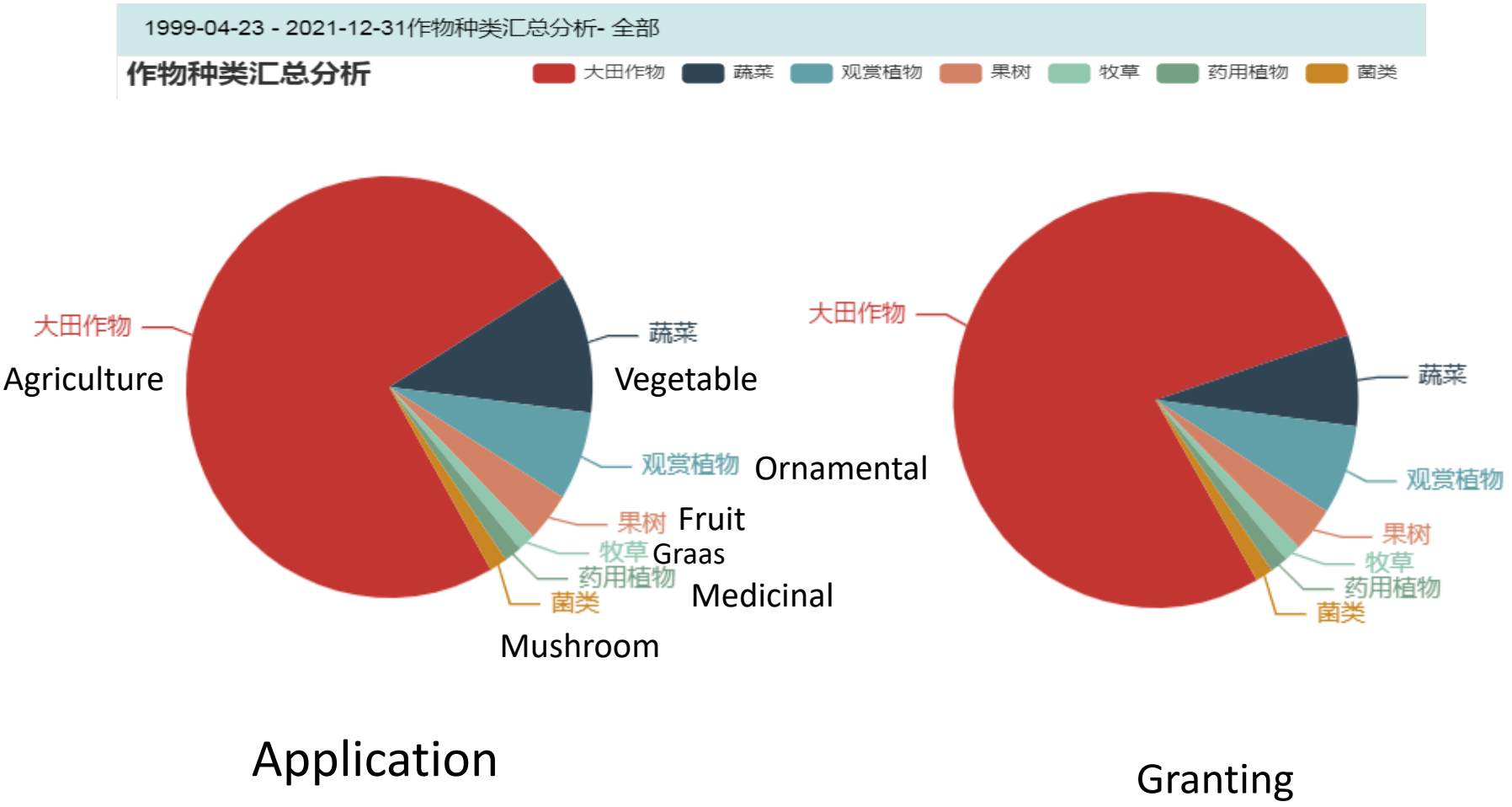


Figure 2 Statistics on the numbers of application and granting of variety rights depending on crops from 1999 to 2021 (automatically displayed by the system)



Application

Granting

3. To participate in UPOV informatization construction

- To participate in the meeting of UPOV TWC

  The Reports at the 37th UPOV TWC meeting in 2019

- The report of DUS test tool was made by Jinzhou sub-center, which filled area of UPOV's lacking of test tool research.

- The report "DUS Test Statistical Analysis Software - DUSCEL 3.0" by the Beijing sub-center was written in UPOV/INF/16 document

- To participate online meeting of the first TWM

The sub-centers of Beijing, Kunming and Jinzhou made the following 3 reports:

1) Development of Statistical Analysis Software: DUSCEL
2) Color Imaging Analysis System
3) DUS characteristics image processor

- To participate in the construction of the UPOV international variety rights application platform(PRESMA)

- In 2017, lettuce (MARA) was listed as the first batch to be included in the PRESMA
- In 2022, 10 new crops will be added to PRESMA, and had been issued to UPOV at August.

Table. 10 crops will be added to PRESMA by the MARA

Genera/species	Botanical name	Number of UPOV TG file
Anthurium	Anthurium Schott	TG/86/5
Guzmania	Guzmania Ruiz et Pav.	TG/182/4
Actinidia	Actinidia Lindl.	TG/98/7
Paprika	Capsicum annuum L	TG/76/8
Soya bean	Glycine max (L.) Merrill	TG/80/6
Sunflower	Helianthus annuus L.	TG/81/6
Tomato	Solanum lycopersicum L.	TG/44/11
Cucumber	Cucumis sativus L.	TG/61/7
Melon	Cucumis melo L.	TG/104/5
Morchella	Morchella Dill. ex Pers.	

4. The plan in future

- To further improve the level of informationization for the protection of new plant varieties.

1) To strengthen automatic monitoring to the legal time limit, such as the novelty, acceptance and examination, protection period and other matters for application.
2) To establish electronic files to reduce physical file storage space.
3) To strengthen information security measures to ensure that the existing system is running normally.

➢ To participate in UPOV informationization related work

1) To participation in TWM/EAF Working Group meetings

- learn and understand the informationization experience of UPOV members
- provide Chinese method for the informationization construction of UPOV

2) To participate in the PRESMA building

- have completed the translation of 10 crops test guidelines
- provide technical questionnaire to UPOV

3) To communicate with UPOV by bilateral or multilateral

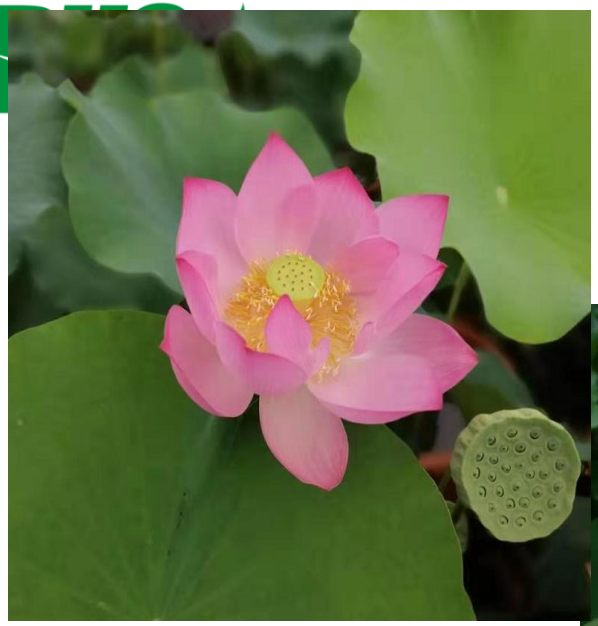
- mainly discusses the data exchange interface between the two parties
- The automatic exchange of information Application system to RPESMA

4) More and more Chinese genera or species will be opened to PRESMA

Conclusions

Introduce 4 items in above:

- General situation of PVP
- Introduction the information system of PVP for MARA
- Situation of participation in UPOV Informatization construction.
- The plan in future



Thank you attention

CONTACTION

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Website：http://www.nybkjfzzx.cn