
Crop Germplasm Resources (CGR) Information

Sharing in China

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Crop Germplasm Resources(CGR), the foundation of food and crop improvement, are most valuable resources for China. Now, there are more than 180 kinds of crops, over 450,000 accessions of CGR kept safely in National Crop Genebank(NGB) and other genebanks distributed all over China. Those CGR information has been managed and shared in Chinese Crop Germplasm Resources Information System(CGRIS) run by Institute of Crop Science(ICS), CAAS.

As the base of CGRIS, a national CGR data collaboration network was set up which involved 2,600 scientists and technical personnel from over 400 agricultural institutes. The data network consists of a national information center(in ICS), 20 sub-centers, 50 first class data source institutes and 400 second class data source institutes. The CGR databases of CGRIS have been established under a series of unified descriptors and data standards, 200 GB data in total.

The databases(sub-system) include:

1. Passport data
2. Characterization and evaluation
3. Images
4. Distribution and utilization
5. Germplasm introduction
6. Germplasm exchange
7. Regeneration
8. Viability monitoring
9. Genebanks management
10. Atlas and GIS

Most of the CGR data can be shared in CGRIS on the internet. The CGRIS website (<http://www.cgris.net>) is public and available to anyone, anywhere on the internet. Users can easily use the web query tools to search the database for the germplasm they want. All data in CGRIS are free of charge. The unified information systems with the same interface and data architecture were developed which have been deployed in different institutes, so the data can be easily transferred and exchanged among the systems and eventually gathered in the central databases of CGRIS.

The barriers in CGR information sharing and exchange:

1. Language. The data in the database are almost just in Chinese even the descriptors and standards.
2. Standards. Some international standards, such as IPGRI's and GRIN's, were considered when our standards have been made, but there are still many differences.
3. Policies. The national CGR policies strictly limit the CGR exchange and exportation, because about 81% CGR in China are indigenous. But in data sharing and exchange, there's no very explicit policy to follow. To avoid the policy and legal risk, it should be very careful to carry out the data sharing and exchange.

Here're some CGR data case study descriptions:

1. The CGR passport data, a catalog of all CGR with basic information.
Data type: Relational data
Subject scope: CGR preservation, crop diversity, new varieties breeding
Amount: 0.2GB
Ownership: ICS, CAAS, free access to all
Technical info: Follow the CGR descriptors and standards, sql sever/excel/dbf
2. The CGR characterization and evaluation data, a very specific description of observation about every CGR.
Data type: Relational data
Subject scope: CGR preservation, crop diversity, new varieties breeding
Amount: 2GB
Ownership: ICS, CAAS, free access to all
Technical info: Follow the CGR descriptors and standards, sql sever/excel/dbf
3. The CGR images data, images representing the diversity of CGR
Data type: Image
Subject scope: CGR preservation, crop diversity
Amount: 180GB
Ownership: ICS, CAAS, free access to all
Technical info: jpg format in file system.

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