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Organization , integration and shared utilization of forage germplasm resources

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Introduction Although China is rich in forage germplasm resources , and more than 10 ,000 accessions have been collected , only about 60% of them are conserved in the National Long-term Gene Bank of Germplasm (NLGBG) , National Medium term Gene Bank of Forage Germplasm (NMGBFG) and The National Nursery of Perennial Forage (NNPF) . About 40% of the collections are scattered in various agencies without proper conservation . As result , many valuable resources will be lost . Consequently , it is necessary to integrate resources across the country while organizing and integrating resources in NMGBFG and NNPF to achieve shared utilization of forage germplasm resources .

Conservation The NNPF has the most preserved accessions of perennial forages with 480 accessions representing 351 wild forages and 129 cultivars in 174 species , 48 genera , and 10 families that were collected from five counties and nine provinces (sections , cities) in northern China . NMGBFG has the potential to store 20 ,000 accessions of forage germplasm for the medium term , but presently stores 5 ,692 accessions representing 641 species , 222 genera and 36 families .

Organization and integration In NNPF , mutual data of 430 accessions had been organized and integrated , which covered 90% of preservation accessions , and organized data items were 11442 with 52% in total . Meanwhile , characteristic data of 350 accessions also had been organized and integrated with 73% and data items were 12473 with 29% in total . In NMGBFG , mutual data of 1700 accessions had been organized and integrated , which covered 30% and 44200 data items covered 17% . Simultaneity , their characteristic data covered 30% and 59500 data items covered 12% . 3000 scattered resources in 24 science researches had been organized and integrated , 2889 accessions mutual data , 2196 accessions characteristic data and 2351 accessions . Among them 2189 accessions were accepted by NMGBFG . Also 2130 accessions databases with 46 fields for mutual data and 2050 accessions with 89 fields for characteristic data both had been founded .

Shared utilization of forage germplasm Sharing of germplasm resources consists of two parts , material sharing and information sharing . Every year NNPF adds about 100 accessions to its collection . About 5 ,500 accessions in NMGBFG have been sent within China and abroad . The database has shared information on more than 2 ,000 accessions .

Problems and countermeasures Many germplasm resources that have been collected and preserved lack systemic evaluation and characterization . Organization and integration of forage germplasm resources takes considerable time to obtain common descriptor information and characterizations .

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