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Guowen Cui

Northeast Agricultural University, China

Gang Li

Northeast Agricultural University, China

Huiqing Liu

Northeast Agricultural University, China

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The master tasks of forage breeding in China

CUI Guo-wen ; LI Gang ; LIU Hui-qing

College of Animal Science and Technology , Northeast Agricultural University , Heilongjiang Harbin 150030 , China ,
E-mail xgw603@163 .com

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Background Since the National Forage Variety Approval Committee and Forage Breeding Committee were established in 1986 , we have gone through extraordinary 20 years of forage breeding work . In the initial development period of 10 years (1986-1995) , the total number of registered varieties was 163 , in which the number of new bred varieties was 55 , the number of local varieties was 37 , the number of the introduction of foreign varieties was 42 , and the number of wild cultivars was 29 . The main characteristics of this stage was that there were more bred varieties , local varieties and wild species but less foreign variety introductions ; new bred varieties included many kind of species and had strong regional character and adaptability . In the second development period 1996-2000 , 69 new bred varieties were registered , in which the number of new bred varieties was 38 , the number of local varieties was 2 , the number of introduced foreign varieties was 20 , and the number of wild cultivars was 9 . The main characteristics of this stage was that on the basis of solid work of old generation plant breeders the new generation of forage breeders improved and bred a series of new forage and fodder crop varieties , and the number of new bred varieties and introduced varieties was large and the number of local varieties and wild species decreased markedly . After 2001 , China's forage breeding work entered a rapid development period , the main characteristic of this stage was that the number of introduced varieties substantially increased , and the number of bred varieties , local varieties and wild species decreased , however , the total number of registered varieties rapidly increased , breeding technology and tools greatly developed , and the number of breeding organization and breeders increased significantly .

Master tasks Chinese forage breeding work was still in the initial stage of development , the existing forage and fodder crop varieties could not meet the requirement of the livestock and grass industries . At the current stage , the master task of forage breeding work was that firstly we should immediately purify and rejuvenate the original bred varieties and secondly we should adjust forage breeding objectives to adapt to social and economic development needs . The master tasks included :

1 . In order to meet China's agricultural structure adjustment and the needs of livestock development , it was necessary to enhance the breeding of the annual forage and fodder crops . At present , our forage research efforts were mostly concentrated in the breeding of perennial forage , and the breeding work of annual forage and feed crops were few . Although perennial legume forages have a lot of advantages , such as high nutritional value , good palatability , the restoration of soil fertility , edaphic improvement and fertilization etc . Considering the current cognitive level of the numerous people , the habit of planting and the yield of an annual forage in the establishment year , annual forages are more easily accepted by the majority of farmers and farming enterprises . It is not only suitable for the current Chinese situation , but also suitable for current Chinese stockbreeding development model with which promotes planting annual forage and fodder crops instead of perennial forage and fodder crops . With regard to the direction of annual forage and fodder crops breeding , we should focus on the following aspects :

(1) Silage corn (fodder corn) Breeding . Different areas in the country should have silage corn varieties which are adapted to the local climate .

(2) Breeding new varieties of forage for hay production . For example oat grass , barnyard , and soybeans . Hay is a necessary supplement to silage , which can improve the structure of feed and improve the benefit of breeding .

2 . To meet the need of food and forage rotation in agricultural area , we should breed high quality legume forage varieties which can grow rapidly in a short period of time .

3 . Based on different animal varieties , special varieties of fodder crops and forage should be bred . Different animal varieties have different preferences for forages . We should breed the corresponding forage varieties for the different animal varieties (cattle , sheep , geese , rabbits , fish , etc) .

4 . To breed resistant forage varieties to improve the natural environment . They should include the characteristics of resistance to salt , cold , drought , sandstorm damage , and disease and tolerance to waterlogging .

5 . Breeding special forage varieties that includes edible grass , big leaf alfalfa , big seed alfalfa (which will be planted easily) , virecence and beautification species , and domestication of wild grass etc . is also needed

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