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The 21st International Grassland Congress / 8th International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

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Domestication of *Leymus paboanus* (Claus) Pilger

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Key words :Hairy Spike Leymus ,Saline-alkali tolerance ,domestication of wild grass yield ,variety registration

Objective of cultivation and domestication

The wild species of Hairy Spike Leymus was cultivated and domesticated to gain high grass yield and high setting rate , and then use it in the reclamation of saline-alkali soil .

Domesticating process and ways

The wild species seed and tree seeding were collected from natural grassland to planting in 1984 . Found that there are greater difference between plants , in particular , setting rate between plants . They were evaluated in the aspects growing height , tillers , grass yield and seed yield and so on . Plants which have domesticating value was kept , then harvested mixed , until field traits became stability . Species comparison experiment was conducted from 1996 to 2002 , and production experiment was conducted in Hetao area and Saline-alkali soil of Tumochuan from 2002 to 2005 . The seeds of species were propagated in 2005 . The variety of wild species was approved to be registered as— "Hairy Spike Leymus" by the National Forage Varieties Examining Committee .

Results of domesticated

1 . Comparison of Domesticated species and wild species

Domesticated species plants were tidy and large . The height of them was higher 10-50cm than that of wild species , and hay yield of them obviously increased .

Table 1 Comparison of *Leymus paboanus* (Claus) Pilger .

Resource	Height (cm)	Leaves length(cm)	Leaves width(cm)	Spike length(cm)	Spike width(cm)	1000-grain weight(g)	Germination rate(%)	Hay (Kg/hm ²)	Seed (Kg/hm ²)
Domesticated species	100-150	30-60	8-10	20-25	10-15	3.5	90	5250	1250
Wild species	45-90	15-30	5-17	10-18	8-13	3.2	75	3500	350

2 . Comparison of nutrition components

The content of crude protein of domesticated species was 13.53% , and higher than that of wild species (12.38%) .

3 . Comparison of Setting rate

Domesticated species had higher setting rate than wild species .

Summary *Leymus paboanus* (Claus) Pilger is one of the best grasses tolerant to Saline-alkali soils and has ability to grow in the region whose soil pH is above 9 and alkalization is between 30-40 . It has drought tolerant , saline-alkali tolerant , high asexual propagation , high nutritive value and good palatability for domestic animals . It can be used in the reclamation of saline-alkali soils and improvement of natural grassland in cold and dry area of north china .