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## Biological and economical characteristics of *Galega orientalis* Lam

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**Key words** : *Galega orientalis* Lam , biological characteristics , artificial field fertilization

**Introduction** *Galega orientalis* is originally a wild perennial legume forage with high cold tolerance in Russia . It was imported to Inner Mongolia from Xinjiang Animal Husbandry academy in 2006 . The cultivation experiment was conducted to test whether it grew well in cold area , Huhhot and Hailaer cities of Inner Mongolia .

### Material and methods

1 . Experimental fields One of experimental fields was located at Babai village , huhhot city , at which the annual average temperature is 5.4°C , the temperature varies from 36.9°C to -33°C , the annual average rainfall is 400mm , and frost-free period is 140 day . The organic matter , alkaline-hydrolyzing nitrogen , organic phosphorus , effective potassium and pH of experiment field were 1.21% , 30.21mg/kg , 21.45mg/kg , 148.5 mg/kg , and 7.6 , respectively . Another experimental site was in Hailaer city , at which the average temperature -0.5°C , the highest and lowest temperatures are 33.9°C and -38.1°C , respectively , the annual rainfall is 271mm , and frost-free period is 113 days .

2 . Experimental design *Galega orientalis* was seeded in 12 plots with three randomized replications . The area of each plot was 20m<sup>2</sup> .

### Results and analysis

**Table 1** Biological characteristics and yield of *Galega orientalis* Lam .

Experiment place	Year	Seeding date (date/mon .)	Regreening (date/mon .)	Regreening rate %	Budding (date/mon .)	Blooming (date/mon .)	Pod (date/mon .)	Ripen (date/mon .)	Seed yield (kg/ha)	Yield of hay (kg/ha)
Huhhot	2006	20/5			25/8	8/9				1730.8
	2007		16/4	92	25/5	5/6	16/6	5/8	168	14538
Hailaer	2006	20/5								1020.5
	2007		2/5	85	28/6	20/7				7603.8

The results showed that plants regreened in the course of nature after winter or after transplant in these two cold places . The seed yield was 168 kg/ha in Huhhot in the second year after planting . Additionally , the hay yield was 7603.8 kg/ha in Hailaer in the second year after planting .

**Conclusions** Huhhot may be a suitable place for the seed breed base of *Galega orientalis* although its seed yield was 33.3kg/ha lower than that in Tubi county , Xinjiang . *Galega orientalis* hay was only 12% reduction in Hailaer compared to Tubi , Xinjiang . This implicated that *Galega orientalis* hay could be produced in Hailaer to meet the needs of legume forage in the local area . Therefore , planting *Galega orientalis* might be of important value in Inner Mongolia .

### Reference

Qingbing Zhang et al . Preliminary field experiment of *Galega orientalis* . *Chinese Grassland* , 2001 , (4) :17-21 . (in Chinese) .