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## Analysis of C-banding and karyotype of Chromosome of two *Galega* species

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**Key words :** *Galega orientalis* , *Galega officinalis* , Chromosome , C-banding , Karyotype

**Introduction** *Galega* is a perennial legume forage , *Galega orientalis* Lam . has gained a place of importance as a new legume pasture species with potential in the former Soviet Union , Northern Europe and Canada . It has high crop yield , high crude protein content , strong ecological adaptability , and sustainable persistence in pasture . There are many researchs about its biology value and cultivation technique , but the research about its cell biology is few . In order to promote the breeding and heredity development of *Galega* , we do research about its karyotype and C-banding .

**Materials and methods** *Galega orientalis* Lam . and *Galega officinalis* Linn . were introduced from Russia . The karyotype analysis of chromosome were conducted by squash method . The C-banding analysis was followed by HBSG (HCl-Ba(OH)<sub>2</sub>-SSC-Giemsa) method . The description of karyotype and C-banding were performed according to LI Mao-xue(1996) .

### Results and analysis

#### 1 karyotype analysis

The results showed that the number of chromosome of *Galega orientalis* Lam . was  $2n=2x=16=16m$  . According to Stebbins classification , it belonged to 1A type . Its AI(karyotype asymmetry index) was 2.55 . The number of chromosome of *Galega officinalis* Linn . was  $2n=2x=16=12m+4s$  , its karyotype was 1A type . Its AI(karyotype asymmetry index) was 1.77 . Two species have the same chromosome number . The karyotype formula is different , but they both have nearly median chromosome .

#### 2 C-banding research

The band formula of *Galega orientalis* Lam . was  $2n=16=10C+2I^+ + 2CI^+ + 2$  . The band formula of *Galega officinalis* Linn . was  $2n=16=8C+2I^+ + 2I_+ + 2CI^+ + 2CT_+$  .

**Discussion** Karyotype and C-banding can be used for the analysis of genome and chromosome . *Galega orientalis* Lam . and *Galega officinalis* Linn . were both symmetrical karyotype , which indicated that they were ancient and primal plants . Sometimes arm ratio is inaccurate due to unclear centromere of chromosome related to the degree of pressure . Therefore , it is difficult to obtain accurate results relying solely on the length of chromosome and the arm ratio characteristics to do the matching analysis . But for most plants , the result of C-banding is relatively steady and valued , so we analyse karyotype combine with the results of C-banding and get more accurate result of karyotype analysis .

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