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## Genetic relationships among domestic and introduced varieties of alfalfa

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**Key words** : alfalfa , introduced variety , domestic variety , genetic diversity , genetic relationship , RAPD

**Introduction** Genetic resources of alfalfa are the basis for breeding and genetic diversity . The rapid developing molecular marker technology has provided effective way for research on genetic relationship . Especially RAPD , which is based on PCR , is more effective on reflecting genetic diversity than isoenzyme and RFLP . This paper describes preliminary results of genetic diversity of alfalfa with RAPD markers .

**Materials and methods** Thirty varieties of alfalfa from China and abroad were selected as experimental materials . RAPD markers and cluster analysis were used to probe their genetic relationship .

**Results and discussion** The results showed that there are close genetic relationship between Deft and Eureka ; Dingxi and Jiamusi ; Ladak and Derby ; Sitel and Altai ; Beijiang and Wudi ; Zhungeer and Baoding ; Yuxian and Aohan ; and among Pianguan , jinnan and Zhaodong ; Gannong No .1 , Gongnong No .2 , Gannong No .3 , Zhonglan No .1 , Algoquin , Caoyuan No .1 and Caoyuan No .2 ; Longzhong , Tianshui , Longzhong , Cangzhou , Humen and Hexi . The study also showed the genetic relationship and genetic distance between introduced varieties and domestic varieties . Clustering results and the genotype demonstrate that domestic varieties have genotype-specific and regional characters , genetic distance between foreign alfalfa varieties and domestic varieties is distant .

**Conclusions** The results and most recent experiments in this area indicated that domestic varieties have genotype-specific and regional characters , and there are certain relevance between the genetic relationship and geographical distribution , the nearer the geographical distribution is , the closer the genetic relationship is .

### Reference

Mengon , A . , 2000 . Use of RAPD and microsatellite (SSR) variation to assess genetic relationships among populations of tetraploid alfalfa (*Medicago sativa*) . *Plant Breeding* 119 , 311-317 .