

## ارزیابی تنوع ژنتیکی شبدر قرمز در کلکسیون بانک ژن گیاهی ملی ایران

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### چکیده

(*Trifolium pratense*)

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### مقدمه

(Rechinger, 1984; Taylor,

.1985, 1990)

*Trifolieae*

(*Trifolium*)

Fabaceae

( )

(Rechinger, 1984 )

(Rechinger,

(*T. pratense*)

1984)

) ( )

( ) ( )

(Taylor, 1985)

( )

(Rechiger, 1984)

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(Cameron, 1983)

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Dabkevièius .

( ) Dabkevièienē

*Trifolium diffusum* Ehrh

*Sclerotinia*

*trifoliorum* Erikss

( ) Ulloa

RAPID

RAPID

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( )

(Frame *et al.*, 1998)

(Qusenberry,

1996)

(Frame *et al.*, 1998; Taylor,

1985)

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مواد و روشها

IPGRI

(IPGRI, 1984, 1992)

(IPGRI)

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(Variation coefficient)

(Dong *et al.*, 2001; Shannon, (Shannon index) 1948)

.( )

$$CV\% = (sd/X) * 100$$

X

sd

.( )

:

$$H = - \sum_{i=1}^{i=n} (Pi * LnPi)$$

n

H

Pi

%

)

V

.(

Spss 9.1, Excel

نتایج

50TN00297

.(Taylor, 1982)

.(Wexelsen, 1932)

:

$$Y = 17 - 4.8X_1 + 0.7X_2 - 5.6X_3 \quad (R^2=0.325)$$

50TN01146

*T. pretense* L. var.

*nivale* W.D.J. Koch (Zohary & Heller, 1984)

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( )

(Y)

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(cm)

(g)

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CV%

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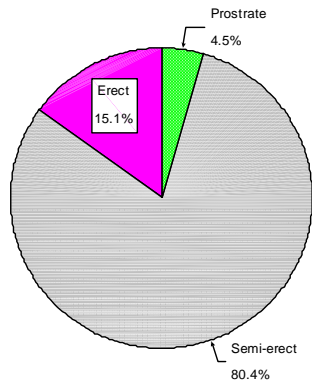
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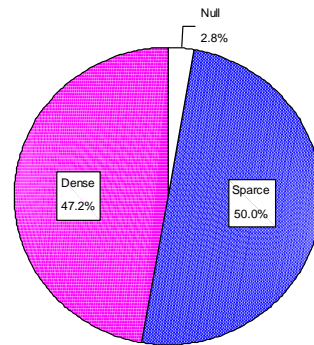
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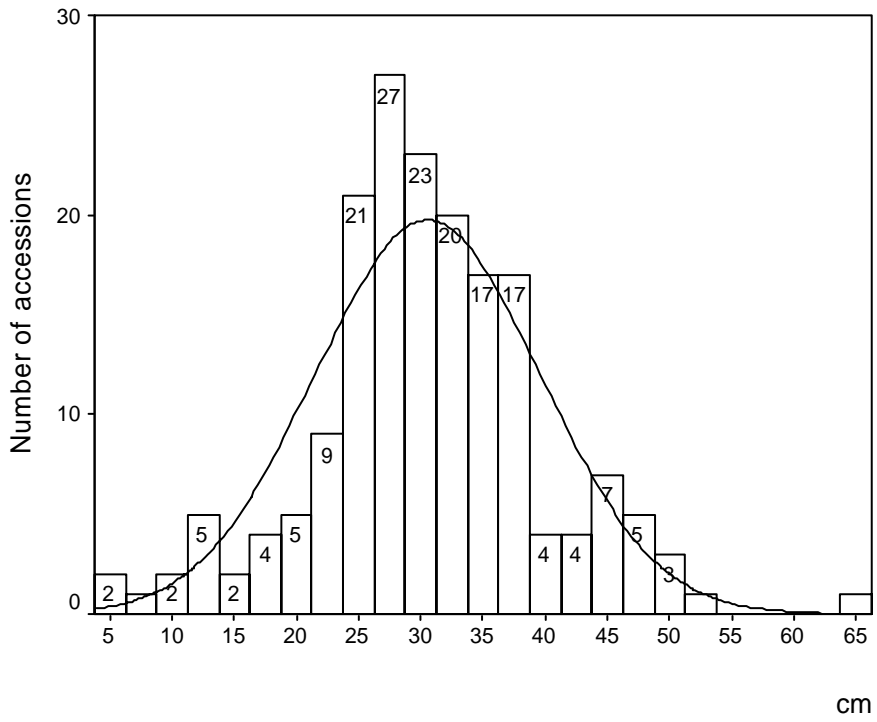
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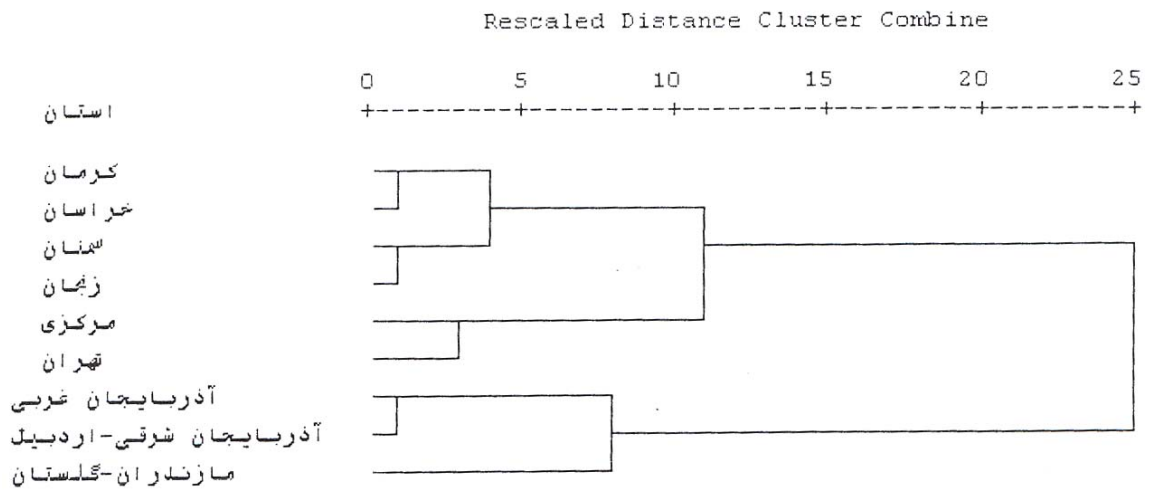
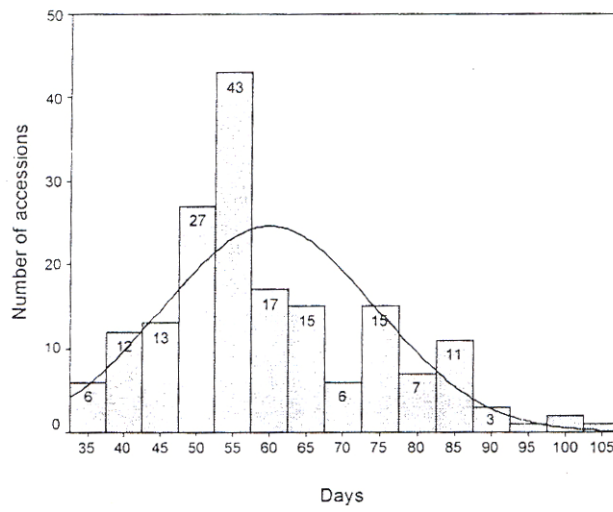


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( )





بحث

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(Egan *et al.*, 1986)

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) %

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(Taylor, 1985)

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Smith Wabreton ( ) Smith

( ) Crochemore ( )

.(Frame *et al.*, 1998)

.(Ayana & Bekele, 1998 )

( )

( )

(*T. resupinatum*)

( )

( )

(Fehr, 1987)

## سپاسگزاری

- Ayana, A. and Bekele, E., 1998. Geographical patterns of morphological variation in sorghum (*Sorghum bicolor* (L.) Moench) germplasm from Ethiopia and Eritrea: qualitative characters. *Hereditas Landskrona*, 129: 3, 195-205.
- Cameron, D.F., 1983. To breed or not to breed. Pp. 238-250 in *Genetic Resources of Forage Plants* (J.G. McIvor and R.A. Bray, eds.). CSIRO, East Melbourne.
- Crochemore, M.L., Huyghe, C., Ecalle, C. and Julier, B., 1998. Structuration of alfalfa genetic diversity using agronomic and morphological characteristics, relationship with RAPD markers. *Agronomie*, 18: 79-94.
- Dabkevičienė, G. and Dabkevičius, Z., 2005. Evaluation of wild red clover (*Trifolium pratense* L.) ecotypes and hybrid populations (*Trifolium pratense* L. \* *Trifolium diffusum* Ehrh.) for clover rot resistance (*Sclerotinia trifoliorum* Erikss.). *BIOLOGIJA*, Nr. 3. P. 54-58
- Dong, Y.S., Zhuang, B.C., Zhao, L.M, Sun, H. and He, M.Y., 2001. The genetic diversity of annual wild soybeans grown in China. *Theoretical Applied Genetics*, 103: 98-103.
- Egan, A.R., Wanapat, M., Doyle, P.T., Dixon, R.M. and Pearce, G.R., 1986. Production limitations of intake, digestibility and rate of passage. In: Blair, G.J., Ivory, D.A. and Evans, T.R. (eds), *Forages in Southeast Asian and South Pacific Agriculture*. ACIAR Proceedings No. 12, ACIAR, Canberra, pp. 104-110.
- Fehr, W.R. 1987. *Principles of cultivar development: Vol. 1. Theory and technique*. McGraw Hill, New York.
- Frame J. Charlto J.F.L. and Laidlaw A.S. 1998. *Temprate forage legume*. CAB Internatioal, Wallingford, Oxon, OX10 8 DE, UK.
- Quesenberry, K.H., 1996. *Clover and special purpose legumes. Germplasm Status report, the clover and special purpose legumes crop germplasm committee*, USDA, USA.
- Shannon, C.E., 1948. A mathematical theory of communication. *Bell Syst. Techn. Journal* 27: 379-423, 623-656.

## منابع مورد استفاده

(T. pratense)

- Ulloa, O., Ortega, F. and Campos, H., 2003. Analysis of genetic diversity in red clover (*Trifolium pratense* L.) breeding populations as revealed by RAPD genetic markers. *Genome*, 46:529-35.
- Wabrton, M.L. and Smith S.E., 1993. Regional diversity in nondormant alfalfa from India and the Middle East. *Crop Science* 33: 252-258.
- Wexelsen, H., 1932. Segregations in red clover (*Trifolium pratense* L.). *Hereditas* (Lund, Swed.) 16:219-240.
- Zohary, M. and Heller, D., 1984. The genus *Trifolium*. (*Trifolium*) 361.
- Smith, S.E., Al-Doss, A. and Warburton, M., 1991. Morphological and agronomic variation in North African and Arabian alfalfa. *Crop Science* 31: 1159-1163.
- Rechinger, K.H., 1984. *Flora Iranica*. No: 157, 73-79.
- Taylor, N.L., 1985. *Clover science and technology*. Madison , Wisconsin , USA.
- Taylor, N.L., 1982. Registration of gene marker germplasm for red clover. *Crop Science*: 22:1269.
- Taylor, N.L., 1990. The true clovers. p. 177-182. In: J. Janick and J.E. Simon (eds.), *Advances in new crops*. Timber Press, Portland, OR.

## Evaluation of genetic diversity in red clover collection at National Plant Gene Bank of Iran

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### Abstract

Red clover (*Trifolium pratense*) is a perennial forage legume being cultivated as a forage crop, some parts of the world. Seeds of 213 accessions conserved in Iranian red clover collection were sown in field, Karaj, Iran. Agro-morphological traits were characterized according to IPGRI descriptors during 2003-2005. Coefficient of variation and Shannon index showed high levels of diversity for each trait. Erect growth habit as a desirable agronomic trait was observed in 17% of accessions. Length of main stem at flowering stage ranged from 5 to 65 cm; with a mean of 30.6 cm. Accessions from Oroomieh, Arak, Babol, Daregaz, and Sardasht with more than 50 cm stem length at flowering stage could be used as potent germplasms in breeding, for this trait. High diversity for days to flowering would provide a flexibility to reach early, moderate, and ripening cultivars. Multiple regression analysis showed a linear relationship between main stem length and plant hairiness, days to flowering, and growth habit traits. Cluster analysis classified the origin of germplasms in four groups. The origin of material with the same climate appeared together in the same cluster. Because of high levels of diversity in the first gene pool of red clover collection, this collection can play a key role in red clover breeding programs in Iran.

**Key words:** Red clover, germplasm and genetic diversity.