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(*Triticum turgidum* L.)

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GMP Harm STI

(Rajaram et al., 196)

(USDA, 2005)

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(Blum, 1998)

(Galeshi & Oskuei, 2001)

(1981) Rosielle & Hamblin (MP)

(1998) Peccitti et al.

(1987) Fisher & Maurer
(SSI)

(2001) Merah et al.

Rosielle & Fernandez (TOL)
(GMP) (1981) Hamblin
(1992)
(STI)

(2006) Sio-semardeh et al.

STI

MP GMP

(2003) Garcia et al.

(b)
(SSI)
(2005) Azizinia

STI GMP MP

(2002) Naghavi et al.

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1. Mean Productivity
 2. Stress Susceptibility Index
 3. Stress Tolerance
 4. Geometric Mean Productivity
 5. Stress Tolerance Index

... (*Triticum turgidum*L.)

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TOL GMP MP STI SSI

Harm

.(Gabrial, 1971)

SAS

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.(Ceccarelli & Grando, 1991)

(1996) Grando

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/ a	/ a	/ abcdef	/ a	/ abcd	/ bcd	/ abc	/ a
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/ a	/ a	/ defg	/ a	/ abc	/ cd	/ cde	/ bcd
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a	/ a	/ efg	/ a	/ cdefg	cd	/ de	/ bcd
/ a	/ a	/ bcdef	/ a	/ abcde	bcd	bcde	/ abc
/ a	/ a	/ abcdef	/ a	/ eghi	/ bc	/ de	/ bcde
/ a	/ a	/ cdefg	/ a	/ efg	/ cd	/ bcde	/ bcde
/ a	/ a	/ fg	/ a	/ hi	/ bcd	/ e	/ bcde
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(2003) Asseng et al. .

(2003) Sepanlu et al. .

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Leilah et al. .

(2005)

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(1992) Fernandez

Azizinia .

(2006) Moragues et al.
(2005)

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GMP STI Harm

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TOL SSI

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GMP STI Harm

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STI Harm

GMP

STI

Harm GMP

(2005) Lauro & Federizzi

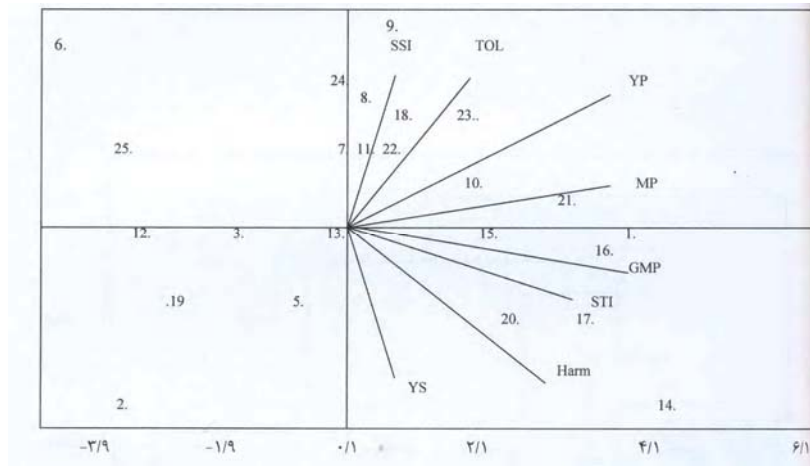
GMP STI

Harm

... (*Triticum turgidum*L.)

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HRM GMP STI



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	YP	YS	SSI	TOL	MP	STI	GMP	Harm
YP		/ n.s	/ **	/ **	/ **	/ **	/ **	/ **
YS			- / **	/ n.s	/ n.s	/ *	/ *	/ **
SSI				- / **	- / **	- / **	- / *	- / *
TOL					/ **	/ **	/ **	/ *
MP						/ **	/ **	/ **
STI							/ **	/ **
GMP								/ **
Harm								

=TOL	=STI	=SSI	=Hrm	=Ys	=MP	=GMP	=Yp
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GMP STI

Harm

(2006) Golabadi et al.

(2005) Azizinia (2006) Sio-se mardeh et al.

(Fernandez, 1992)

(2001) Nourmand Moayed et al.

(1996) Shiferaw & Baker

(1990) Hossain et al.

(Richards et al.,

.2002; Rajaram & Van Ginkle, 2001)

MP

(Ceccarelli & Grando, 1991;

Rathjen, 1994)

(1981) Rosielle & Hamblin

(TOL)

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(Ceccarelli & Grando, 1991)

(Ud-Din et al., 1992)

(1992) Ud-Din et al.

REFERENCES

1. Asseng, S., van Herwaarden, A. F. (2003). Analysis of the benefits to wheat yield from assimilates stored prior to grain filling in a range of environments. *Plant and Soil*, 256, 217-229.
2. Aziznia, Sh. (2005). Evaluation of quantitative characters related to resistance to drought in synthetic wheat under normal and rain-fed conditions. *Iranian Journal of Agricultural Sciences*, 36, 281-295. (In Farsi).
3. Blum, A. (1998). Improving wheat grain filling under stress by stem reserve mobilization. *Euphytica*, 100, 77-83.

4. Ceccarelli, S. & Grando, S. (1991). Selection environment and environmental sensitivity in barley. *Euphytica*, 57, 157-167.
5. Dejan, D., Quarrie, S. & Stankovic, S. (2002). Characterizing wheat genetic resources for responses to drought stress. *Euphytica*, 307-318.
6. Fernandez, G. C. J. (1992). Effective selection criteria for assessing plant stress tolerance. In: Proceedings of the *Sympo. Tawan*, 16 Aug. B Y C. G. Kuo. A V R D C.
7. Fisher, R. A. & Maurer, R. (1978). Drought resistance in spring wheat cultivars. I. grain yield responses. *Ault J Agric Res*, 29, 897-912.
8. Galeshi, S. & Oskuei, B. (2001). Response of Spring Wheat to water limitation after anthesis. *Journal of Agriculture and Natural Resources*, 4, 99-113.
9. Garcia del moral, L. F., Rharrabti, Y., Villegas, D. & Royo, E. (2003). Evaluation of grain yield and its components in durum wheat under Mediterranean conditions. *Agronomy Jour*, 95, 266-274.
10. Gbrial, K. R. (1971). The biplot gropgical display of matrices with application to principal component analysis. *Biometrika*, 58, 453-467.
11. Golabadi, M., Arzani, A. & Mirmohammael Maibody, S. A. M. (2006). Assessment of drought tolerance in segregating population in D.W. *African Jour of Agric Res*, 1(5), 162-171.
12. Hossain, A. B. S., Sears, A. G., Cox, T. S. & Paulsen, G. M. (1990). Desiccation tolerance and its relationship to assimilate partitioning in winter wheat. *Crop Sci*, 30, 622-627.
13. Lauro, A. O. & Federizzi, C. L. (2005). Plant traits to complement selection based on yield components in wheat. *Ciencia Rural Santa Maria*, 35 (5), 1010-1018.
14. Leilah, A. A. & Al-Khateeb, S. A. (2005). Statistical analysis of wheat yield under drought conditions. *Journal of Avid Environments*, 61, 483-496.
15. Mehdi-khanlu, Kh. & Farshadfar, A. (1998). Selecting drought resistant wheat by principal component analysis. In: Proceedins of the 7th Iranian Crop Production and Breeding Congress. Pag. 443.
16. Merah, O. J., Araus, L., Souyris, I., Nachit, M., Deleens, E. & Monneveux, P. (2001). *Carbon isotope discrimination: Potential intrest for grain yield improvement in durum wheat*. CIHEAM- Options Mediterranean's, 299-301. At: www.CIHEAM.org.
17. Moragues, M., Garcia del Moral, L. F., Moralejo, M. & Royo, C. (2006). Yield formation strategies of durum wheat landraces with distinct pattern of dispersal within the Mediterranean basin I: Yield components. *Field Crop Res*, 95, 194-205.
18. Naghavi, M., Shabaz, A. & Taleai, A. (2002). Evaluation of variation in Durum What germplasm For some agronomic characters. *Iranian Journal of Agriculture Sciences*, 2, 81-88. (In Farsi).
19. Nourmand Moayed, F., Rostami, M. R. & Ghanadha, M. (2001). Evaluation of drought resistance indices in bred-wheat. *Iranian Journal of Agriculture Sciences*, 32, 795-807. (In Farsi).
20. Peccitti & Annicchiarico, P. (1998). Agronomic value and plant type of Italian durum wheat cultivars from different eras of breeding. *Euphytica*, 99, 9-15.
21. Rajaram, S. & Van Ginkle, M. (2001). Mexico, 50 years of international wheat breeding . In: Bonjean, A. P. and W. J. Angus (Eds.), *The world wheat book: A history of wheat breeding*. Lavoisier publishing, Paris, France, pp. 579-604.
22. Rajaram, S., Varughese, G., Abballa, O., Pfeiffer, W. H. & Van Ginkel, M. (1996). Accomplishments and challenges in wheat and triticale breeding at CIMMYT. *Plant Breed*, 63 (2), 131-139.
23. Rathjen, A. J. (1994). the biological basis of genotype * environment interaction: its definition and management. In: Proceedings of the *Seventh Assembly of Wheat Breeding Society of Australia*, Adelaide, Australia.
24. Richards, R. A., Rebetzke, G. J., Condon, A. G. & van her warden, A. F. (2002). breeding opportunities for increasing the efficiency of water use and crop yield in temperate cereasl. *Crop Sci*, 42, 111-121.
25. Rosielle, A. A. & Hamblin, J. (1981). Theoretical aspect of selection for yield in stress and non-Stress environment. *Crop Science*, 21, 943-946.
26. Sepanlu, Gn., Galeshi, S. & Zeinali, A. (2004). Effect of water stress on yield and yield components at different growth stages. *Agricultural Scincrs and Technology Journal*, 4, 91-1010 .
27. Shifferaw, B. & Baker, D. A. (1996). Evaluation of drought screening techniques for *Eragrostis tef*. *Corp Sc*, 36, 214-221.
28. Sio-se mardeh, A., Ahmadi, A., Pustini, K. & Mohammadi, V. (2006). Evaluation of drought resistance indices under various environmental conditions. *Field Crops Research*, 98, 222-229.
29. Ud-Din, N. B., Carver, F. & Clutter, A. C. (1992). Genetic analysis and selection for wheat yield in drought-stressed and irrigated environments. *Euphytica*, 62, 89-96.
30. Unknown. (1995). *Ministry of jehad Keshavarzi, Deputy of Design and Planning Office of Information Technology, Agronomy Information, Bank, Planting Year 1384-85*.

