

()

:

.II

*

(// : // :)

(*Zea mays* L.)

() I () I () I) I

(p < /)

(v)

(

(v)

(v)

(v)

I

(

)

(

)

(

/

/

)

(

)

(

)

(Wolfe et al.,

.1988a & b)

.(Anonymous, 2005b)

.(Denmead & Shaw, 1960)

.(Anonymous, 2005b; FAO, 2006)

.(Nesmith & Ritchie, 1992)

(Harder et al.,

.1982)

.(Herrero & Johnson, 1981)

.(Cakir, 2004; Anonymous, 2005b)

.(Oktem et al., 2003)

.(Karam et al., 2003)

.(Earl & Davis, 2003)

...

:

.()

(Maize Dwarf Mosaic Virus)

(MDMV)

()

- :

(V) KSC (V) KSC (V) KSC

(V) TWC

()

.(Darkhal, 2003)

() () ()

I

I

I

I

()

I)

() I) +(

.(Andrade et al., 2002)

[]

[]

[]

H

() Q () L ()

.(Earl & Davis, 2003)

Q = / (L / H) H / (

()

()

: []

= _____ × (

()	pH	(%)	(%)	()	(%)
/	/	/	/	/	/

()	()	()	()	()	()	()
/	/	/	/	/	/	/
/ (%)	/ (%)	/	/	/ (%)	/ (%)	/
/ (%)	/ (%)	/ (%)	/ (%)	/ (%)	/ (%)	/
/ (%)	/ (%)	/ (%)	/ (%)	/ (%)	/ (%)	/

$$x \quad y \quad y = (/) \ln(x) + /$$

(I)

()

(p< /)

« . . . »

I I

TWC

KSC

Archive of SID

/

(p< /)

(p< /)

/ TWC

(p< /)

()

()

(p< /)

I

I

Andrade (Schussler & Westgate, 1991)

(2002) et al.

TWC

KSC

()

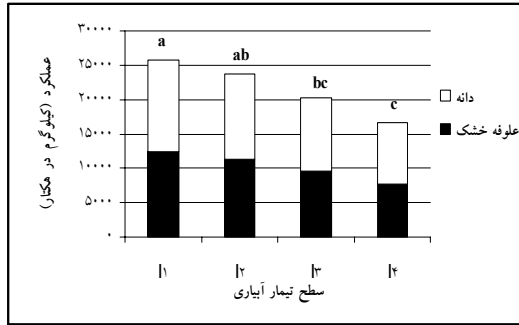
(p< /)

TWC

/ KSC

(2000) Traore et al.

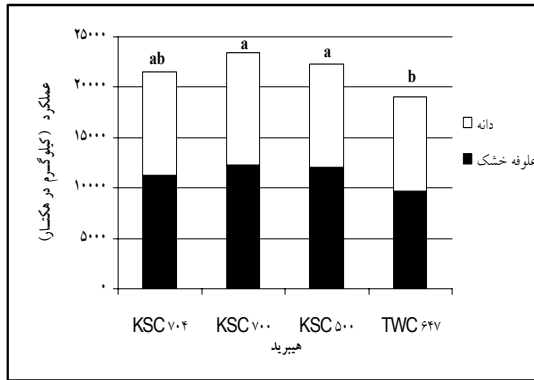
()



(2004) Cakir

)
(%
(

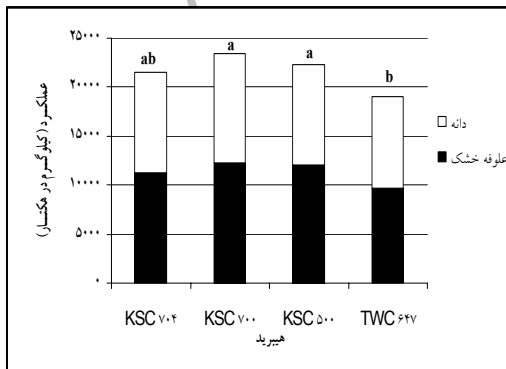
(Michelena & Boyer, 1982)



(Denmead & Shaw, 1960)

(Wolfe et al., 1988a & b)

)
(%
(



I

%

%

%

() I

KSC ()

% TWC

... :

.()

Westgate

(1994)

(2002) Sepehri et al.

/

%)

.()

(

Moss & Downey

(1971)

/

I

KSC

/ /

.()

Ghadiri & Majidian (Westgate, 1994)

(2003)

/)

(p< / /

(p< / /)

.()

(p< / /)

I

(2003) Karam et al.

(2003) Ghadiri & Majidian

)

(

Oktem et al.

I

(2003)

I

% /

%

%

I

% /

.(Andrade et al., 2002)

%

I I

()

KSC () % %

TWC

REFERENCES

1. Anonymous. (2005). *Agriculture statistical report of Iran, fruit and crop plants*. Products-2003. Ministry of Jihad of Agriculture. (In Farsi).
2. Anonymous. (2005). *Methods of evaluating drought*. WWW.Agrometeorology.ir. (In Farsi)
3. Andrade, F. H., Echarte, L., Rizzalli, R., Della Maggiora, A. & Casanovas, M. (2002). Kernel number predication in maize under nitrogen or water stress. *Crop Science*, 42, 1173-1179.
4. Cakir, R. (2004). Effect of water stress at different development stages on vegetative and reproductive growth of corn. *Field Crops Research*, 89, 1-16.
5. Darkhal H. (2003). An evaluation of climatic requirements for varying corn hybrids and their impacts on grain yield and components. Project Report of Agricultural Research Institute of Isfahan.
6. Denmead, O. T. & Shaw, R. H. (1960). The effects of soil moisture stress at different stages of growth on the development and yield of corn. *Agronomy Journal*, 52, 272-274.
7. Earl, H. J. & Davis, R. F. (2003). Effect of drought stress on leaf and whole canopy radiation use efficiency and yield of maize. *Agronomy Journal*, 95, 688-696.
8. FAO. (2006). Food and Agriculture Organization of the United Nations. Food Outlook, Global market analysis. *Statistical appendix*, 1, June.
9. Fardad, H. (1996). *Principles of irrigation: methods of irrigation*. Tehran University Press. Pp 442-459. (In Farsi).
10. Ghadiri, H. & Majidian, M. (2003). Effect of different nitrogen fertilizer levels and moisture stress during milky and dough stages on grain yield, yield components and water use efficiency of corn (*Zea mays* L.). *Journal of Science & Technology of Agriculture & Natural Resources*, 7(2), 103-114. (In Farsi).
11. Grant, R. F., Jackson, B. S., Kiniry, J. R. & Arkin, G. F. (1989). Water-deficit timing effects on yield component in maize. *Agronomy Journal*, 81, 61-65.
12. Harder, H. J., Carlson, R. E. & Shaw, R. H. (1982). Yield, yield components, and nutrient content of corn grain as influenced by post-silking moisture stress. *Agronomy Journal*, 74, 275-278.
13. Hashemi-Dezfuli, A. (1995). Concept of water use efficiency. *Research and Reconstruction*, 25, 34-37. (In Farsi).
14. Herrero, M. P. & Johnson, R. R. (1981). Drought stress and its effects on maize reproductive systems. *Crop Science*, 21, 105-110.
15. Jurgens, S. K., Johnson, R. R. & S. Boyer, J. S. (1978). Dry matter production and translocation in maize subjected to drought during grain fill. *Agronomy Journal*, 70, 678-682.
16. Karam, F., Breidy, J., Stephn, C. & Rouphael, J. (2003). Evapotranspiration, yield and water use efficiency of drip irrigated corn in the Bekaa Vally of Lebanon. *Agriculture Water Management*, 63, 125-137.
17. Li, Q. S., Willardson, L. S., Deng, W., Li, X. J. & Liu, C. J. (2004). Crop water deficit estimation and irrigation scheduling in western Jilin province, Northeast China. *Agriculture Water Management*, 71, 47-60.

- ...
- :
18. Michelena, V. A. & Boyer, J. S. (1982). Complete turgor maintenance at low water potential in the elongation region of maize leaves. *Plant Physiology*, 69, 1145-1149.
 19. Moss, G. I. & Downey, L. A. (1971). Influence of drought stress on female gametophyte development in corn (*Zea mays* L) and subsequent grain yield. *Crop Science*, 11, 368-372.
 20. Nesmith, D. S. & Ritchie, J. T. (1992). Short – and long-term responses of corn to a pre-anthesis soil water deficit. *Agronomy Journal*, 84, 107-113.
 21. Oktem, A., Simsek, M. & Oktem, A. G. (2003). Deficit irrigation effects on sweet corn (*Zea mays saccharata* Sturt) with drip irrigation system in a semi-arid region I. Water yield relationship. *Agriculture Water Management*, 61, 63-74.
 22. O'Neill, P. M., Shanahan, J. F., Schepers, J. S. & Caldwell, B. (2004). Agronomy responses of corn hybrids from different eras to deficit and adequate levels of water and nitrogen. *Agronomy Journal*, 96, 1660-1667.
 23. Schussler, J. R. & Westgate, M. E. (1991). Maize kernel set at low water potential: II. Sensitivity to reduced assimilates at pollination. *Crop Science*, 31, 1196-1203.
 24. Sepehri A., Modarres Sanavi, S. A., Gharehyazi, B. & Yamini, Y. (2002). Effect of water stress and different nitrogen levels on growth and development stages, yield and yield components of corn. *Iranian Journal of Crop Science*, 4(3), 184-201. (In Farsi).
 25. Tavakoli, H. (1988). *Effect of different irrigation regimes on vegetative and reproductive growth of corn*. M. Sc. Thesis, College of Agriculture, Isfahan University of Technology, Iran. (In Farsi).
 26. Traore, S. B., Carlson, R. E., Pilcher, C. D. & Rice, M. E. (2000). Bt and non-Bt maize growth and development as affected by temperature and drought stress. *Agronomy Journal*, 92, 1027-1035.
 27. Westgate, M. E. (1994). Water status and development of the maize endosperm and embryo during drought. *Crop Science*, 34, 76-83.
 28. Wolfe, D. W., Henderson, D. W., Hsiao, T. C. & Alvino, A. (1988a). Interactive water and nitrogen effects on senescence of maize: I. Leaf area duration, nitrogen distribution, and yield. *Agronomy Journal*, 80, 859-864.
 29. Wolfe, D. W., Henderson, D. W., Hsiao, T. C. & Alvino, A. (1988b). Interactive water and nitrogen effects on senescence of maize: II. Photosynthetic decline and longevity of individual leaves. *Agronomy Journal*, 80, 865-870.
 30. Yamasaki, T., Yamakawa, T., Yamane, Y., Koike, H., Satoh, K. & Katoh, S. (2002). Temperature acclimation of photosynthesis and related changes in photosystem II electron transport in winter wheat. *Plant Physiology*, 128, 1087-1097.

Archive of SID