

( )

## L17

\*

( // : // : )

A

(% / )

:

.(Daneshian, 2000; Shahmoradi, 2003)

.(Khajouee-Nezhad et al., 2004)

(SOC)

(Daneshian, 2000; Shahmoradi, 2003)

(Gliessman, 2006)

)

(

(Alizadeh et al., 2005)

(Alizadeh et al., 2005)

(Serraj et al., 1999)

( )

(El-Bassiouny & Shukry, 2001)

(Tarumingkeng & Coto, 2003)

(El-Bassiouny & Shukry, 2001)

(Rostami & Yazdi

.Samadi, 1992)

ppm

(Mohammadzadeh & Mivechi-Langroddi,  
.1998)

(Palmer et al., 1995)

(Shafee-Zarghar, 1996)

(Hasanzadeh-Ghortapa, 2000)

(Shafee-Zarghar, 1996)

(Shafee-Zarghar,

.1996)

(Chosh et al., 2004)

- 
1. Soil organic carbon
  2. Part per million

(Tarumingkeng &

( )

.Coto, 2003)

( )

.(Muir, 2002)

.(Hashemabadi & Kashi, 2004)

( )

)

(

%

%

.(Yang et al., 2004)

)

/

(

.(Roosta et al., 2002)

.(Covarrubias et al., 1995)

.(Shahmoradi, 2003)

/ / /

/ / /

% /

)

(

.(Hasanzadeh-Ghortapa, 2000)

ppm

/

L17

/

Elf Union

(Daneshian, 2004;

.(Daneshian, 2004)

.Daneshian et al., 2002; Shahmoradi, 2003)

( ) V3

A

( )

( )

(Gonzalez-rodriguez et

) .al., 2005)

A

( %

)

(R8)

(

IR

(Inframatic red)

( )

/ )

Mstat-C

(

/

V3

(R8)

/

( )

/

Sr	Se	Pb	Ni	Mo	Cr	CO	C <sub>d</sub>	Ba	As	Al	Cu	Mn	Zn	K	P	N
-			-	-	-	-	-	-	-	-	-	-	-	-	-	-

ppm

(TN)	(ppm)	(ppm)	(pH)	(dS/m)	(gr/cm <sup>3</sup> )	(gr/cm <sup>3</sup> )	(cm)
/		/	/	/	/	/	/



%				
(cm)	(cm)	(cm)	( )	(mm)
/ a	/ a	/ a	/ a	/ a
/ ab	/ ab	/ b	/ b	/ b
/ b	/ b	/ b	/ b	/ b
/	/	/	/	LSD
/ b	/ b	/ c	/ c	/ c
/ b	/ a	/ bc	/ b	/ c
/ ab	/ a	/ ab	/ b	/ b
/ a	/ a	/ a	/ a	/ a
/	/	/	/	LSD
/ ab	/ ab	/ abc	/ bc	/ cd
/ a	/ a	/ ab	/ b	/ bc
/ a	/ a	/ a	/ b	/ ab
/ a	/ a	/ a	/ a	/ ab
/ ab	/ b	/ def	/ d	/ fg
/ ab	/ ab	/ cdef	/ cd	/ fg
/ ab	/ a	/ b-e	/ bc	/ def
/ a	/ ab	/ ab	/ bc	/ cd
/ b	/ b	/ f	/ d	/ g
/ b	/ ab	/ ef	/ cd	/ fg
/ ab	/ ab	/ b e	/ cd	/ ef
/ ab	/ ab	/ bcd	/ bc	/ cde
/	/	/	/	LSD

( )

(Tarumingkeng & Coto, 2003)

( )

(Daneshian,

.2000)

(Tarumingkeng & Coto, 2003)

(Liu et al., 2004)

( )

(Gliessman, 2006)

/ )

/ .(

/

) / /

.( (Daneshian, 2000)

/

( / )

) ( / )

.( )

.(

/ / /

(Tarumingkeng & Coto,

.2003)

.( )

.(Gliessman, 2006)

.( )

.( )

/

.( )

/ /

.( )

(Gliessman, 2006)

.( )

)

(

(Gliessman, 2006) ( )

(Lupway et al., 2000)

(Schwining, et al., 2005)

(Gonzalez-rodriguez et al., 2005)

(Ghosh et al., 2004)

( )

(Peter, 2000)

(Tarumingkeng & Coto, 2003)

)

( )

(Palmer, et al., 1995)

(Reddy et al., 2000) ( )

L17

---



---

/	/	/	/	/
/ **	/ **	/ **	/	/ *
/ **	/ **	/ **	/	/ **
/	/	/	/	/
/	/	/	/	/
/	/	/	/	/
				(%)
				.% %
				** *

%				
(kg/ha)	(g)	( ) (mm)		
/ a	/ a	/ a	/ a	/ a
/ b	/ a	/ b	/ a	/ b
/ c	/ b	/ b	/ a	/ b
/ / / /				LSD
/ b	/ b	/ c	/ a	/ b
/ b	/ a	/ b	/ a	/ b
/ a	/ a	/ a	/ a	/ b
/ a	/ a	/ a	/ a	/ a
/ / / /				LSD
/ b	/ bc	/ cd	/ a	/ a-d
/ ab	/ ab	/ ab	/ c	/ a-d
/ ab	ba /	/ ab	/ ab	/ ab
/ a	/ a	/ a	/ c	/ a
/ c	/ bc	/ f	/ bc	/ e
/ c	/ a	/ de	/ abc	/ cde
/ b	/ a	/ cd	/ abc	/ cde
/ b	/ a	/ bc	/ abc	/ abc
/ c	/ c	/ g	/ abc	/ e
/ c	/ bc	/ ef	/ abc	/ de
/ c	/ bc	/ de	/ a	/ de
/ c	/ bc	/ cd	/ abc	/ b-e
/ / / /				LSD

.( )

( )

.( )

.( )

F	MS	SS
/ **	/	/
/	/	/
/	/	/

.% %                      \*\* \*

( )

( )

.( )

.(Daneshian, 2000)

F	MS	SS
/	/	/
/ **	/	/
/ **	/	/
/	/	/
/	/	/
	/	/
	.%	.%
		** *

F	MS	SS
/	/	/
/	/	/
/	/	/
/	/	/
/	/	/
	/	/
	.%	.%
		** *

F	MS	SS
/	/	/
/ **	/	/
/ **	/	/
/	/	/
/	/	/
	/	/
	.%	.%
		** *

.( )

(2003) Shahmoradi (2000) Daneshian .( )

.( )

.(Daneshian, 2000; Shahmoradi, 2003)

.( )

.( /

.( )

.( )

/ / /

.( )

(2003) Shahmordi (2000) Daneshian

.( )

... L17

:

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

L17

( )		( )	
/	/	/	/
/ **	/ *	/ *	/
/	/	/	/
/ **	/	/ *	/
/ **	/ **	/	/
/	/	/	/
/	/	/	/

(%)

. % %      \*\* \*

%

( )		( )		( ) (mm)
/ b	/ a	/ b	/ b	
/ a	/ b	/ ab	/ ab	
/ a	/ b	/ a	/ a	
/	/	/	/	LSD
/ a	/ a	/ a	/ a	
/ a	/ b	/ a	/ a	
/ a	/ ab	/ ab	/ a	
/ b	/ ab	/ b	/ b	
/	/	/	/	LSD
/ d	/ a	/ bc	/ bc	
/ d	/ a	/ ab	/ ab	
/ d	/ a	/ ab	/ ab	
/ d	/ a	/ c	/ c	
/ b	/ bc	/ ab	/ a	
/ b	/ bcd	/ ab	/ a	
/ c	/ bc	/ ab	/ ab	
/ bc	/ cd	/ ab	/ ab	
/ a	/ bcd	/ a	/ a	
/ a	/ d	/ ab	/ a	
/ a	/ d	/ ab	/ a	
/ bc	/ b	/ ab	/ ab	
/	/	/	/	LSD

## REFERENCES

1. Alizadeh, G. G., Asadi-Kangharshahi, S. & Tavakoli, A. (2005). Study of effects of different amounts of organic fertilizer on yield and quality of soybean. In: Proceeding of the 9<sup>th</sup> Iran Soil Science Congress. PP. 7-9.
2. Araj, A. A., Abdol, Z. O. & Joyce, P. (2001). Efficient use of animal manure on cropland -economic analysis. *Bioresource Technology*, 79, 179-191.
3. Bhattacharyya, P., Chakrabarti, K. & Chakraborty, A. (2005). *Microbial biomass and enzyme activities in submerged rice soil amended with municipal solid waste compost and decomposed cow manure*. Chemosphere (2005). www.elsevier.com/locate/chemosphere
4. Covarrubias, A. A., Ayala, J. W., Reyes, J. L., Hernandez, M. & Garcarrubio, A. (1995). Cell-wall proteins induced by water deficit in Bean (*Phaseolus vulgaris* L.) seedling. *Plant Physiology*, 107, 1119-1128.
5. Daneshian, J. (2000). *Ecophysiological study of water deficit on soybean*. Ph. D. Thesis, Azad Uni, Science and Research branch. 250pp. (In Farsi).
6. Daneshian, J. (2004). *Soybean cultivation*, Seed and plant Improvement Institute, 30pp. (In Farsi).
7. Daneshian, J., Nourmohammadi, G., Majidi-Hervan, I. & Jonobi, P. (2002). Evaluation of drought stress and potassium application on quantitative and qualitative soybean characteristics. *Journal of Agricultural Science*, (8)1. (In Farsi).
8. El-Bassiouny, H. M. S., & Shukry, W. M. (2001). Cowpea growth pattern, metabolism and yield in response to IAA and biofertilizers under drought conditions. *Egyptian Journal of Biology*, 3, 117-129.
9. Ghosh, P. K., Mandal, K. G., Hati, K. M. & Ajay. (2004). Comparative effectiveness of cattle manure, poultry manure, phosphocompost and fertilizer-NPK on three cropping system in vertisols of semi-arid tropics.II. Dry matter yield, nodulation, chlorophyll content and enzyme activity. *Bioresource Technology*, 95, 85-93.
10. Gliessman, R. S. (2006). *Agroecology: The Ecology of Sustainable Food Systems*, Second Edition. CRC Press: Boca Raton, FL. USA.
11. González-rodríguez, A. M., Martín-olivera, A., Morales, D. & Jiménez, M. S. (2005). Physiological responses of tagasaste to a progressive drought in its native environment on the Canary Islands. *Environmental and Experimental Botany*, 53, 195-204.
12. Hasanzadeh-Ghortapa, A. (2000). *Evaluation of organic, chemical and incorporate fertilizers effects on quantitative and qualitative characteristics of sunflower cultivars in west Azarbaijan*. Ph.D. Theses, Agriculture Faculty of Tarbiat Modars University. (In Farsi).
13. Hashemabadi, D. & Kashi, A. (2004). Effects of different levels of nitrogen and poultry manure on quantitative and qualitative characteristics of autumn growing cucumber. *Journal of Sciences and Technology of Agriculture and Natural Resources*, 8(2), 25-33. (In Farsi).
14. Khajouee-Nezhad, G., Kazemi, H., Aliyari, H., Javanshir, A. & Arvin. M. J. (2004). Effect of different irrigation regimes and sowing density on characteristics of growth, yield and yield component of three soybean cultivars in second cultivation. *Agriculture Science*, 14 (2), 57-70
15. Liu, F., Andersen, M. N. & Jensen, C. R. (2004). Root signal controls pod growth in drought-stressed soybean during the critical, abortion-sensitive phase of pod development. *Field Crop Research*, 85, 159-166.

16. Lupwayi, N. Z., Girma, M. & Haque, I. (2000). Plant nutrient contents of cattle manure from small-scale farms and experimental stations in the Ethiopian highlands. *Agriculture, Ecosystems and Environment*, 78, 57-63.
17. Mohammadzadeh, A. R., Mivechi-Langroddi, V. H. (1998). Co-usage of organic and phosphorus fertilizers in soil for reducing of phosphorus fertilizer in soils of Bosheher. *Scientific and Research Bulletin of Soil and Water*, 12(1), 20-27.
18. P. Muir, J. (2002). Hand-plucked forage yield and quality and seed production from annual and short-lived perennial warm season legumes fertilized with composted manure. *Crop Science*, 42, 897-904.
19. Palmer, J., Dunphy, E. J. & Reese, P. (1995). *Managing drought – stressed soybean in the southeast*. North Carolina cooperative extension service as publication number AG-519-12. <http://www.ces.ncsu.edu/disaster/drought/dro-24.html>
20. Peter, J. (2000). Weather & Yield. (translated by M. Kafi, A. Ghanjali, V. Nezami, and F. Shariatmadar). Publication of Mashhad Jahade-Daneshghahi. PP. 311.
21. Reddy, D. D., Rao, A. S. & Rupa, T. R. (2000). Effects of continuous use of cattle manure and fertilizer phosphorus on crop yields and soil organic phosphorus in a vertisol. *Bioresource Technology*, 75, 113-118.
22. Roosta, M. J. et al., (2002). Effects of organic matter and mineral components of some chemical properties and biological activity of a sodic soil. *Journal of Soil and Water Science*, 16 (1).
23. Rostami, M., Yazdi-Samadi, A. B. (1992). Evaluation of drought resistance and reaction of alfalfa cultivars in normal and soil water stress conditions. *Iranian Journal of Agricultural Science*, 23, 9-24.
24. Schwining, S., Starr, B. I. & Ehleringer, J. R. (2005). Summer and winter drought in a cold desert ecosystem (Colorado Plateau) part I: effects on soil water and plant water uptake. *Journal of Arid Environments*, 60, 547-566.
25. Serraj, R., Sinclair, T. & Purcell, L. (1999). Review article: Symbiotic N<sub>2</sub> fixation response to drought. *Journal of Experimental Botany*, 50, 143-155.
26. Shafee-Zarghar, A. R. (1996). *Evaluation quantitative and qualitative characteristics of cucumber cultivars due to organic materials and mineral components in winter sowing*. M. Sc. Theses, Agriculture Faculty of Tarbiat Modars University.
27. Shahmoradi, S. H. (2003). *Evaluation of drought stress on quantitative and qualitative characteristics of some cultivars and advanced lines of soybean*. M. Sc. Theses of Agriculture Faculty of Tehran University.
28. Tarumingkeng, R. C. & Coto, Z. (2003). *Effects of drought stress on growth and yield of soybean*. @ 2003 Kisman, Science Philosophy PPs 702, Term paper, Graduate School, Borgor Agricultural University (Institut Ppertanian Bogor), December 2003.
29. Yang, C., Yangb, L., Yanga, Y. & Ouyangc, Z. (2004). Rice root growth and nutrient uptake as influenced by organic manure in continuously and alternately flooded paddy soils. *Agricultural Water Management*, 70, 67-81.
30. Zare, M., Zeinali Khaneghah, Daneshian, J. (2004). evaluation of soybean genotypes to drought stress. *Journal of Agricultural Science*, (35), 4. (In Farsi).

