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.(Jakson et al., 1996)

.(Huan, 2000)

.(Araus et al., 2002; Winter et al., 1988)

(Blum, 1998; Kobata et al., 1992; Palta et al., 1994)

(Martinez et al., 2003;  
Wardlaw, 2002; Yang et al., 2001)

(Bishop & Bugbee, 1998)

(Kocheva & Georgiev, 2003;  
Premachandra et al., 1990; Tripathy et al., 2000)

CO<sub>2</sub> CO<sub>2</sub>  
(Bishop & Bugbee, 1998; Cornic, 2000;  
Molnar et al., 2002)

(Jabari, 2004)

(Jabari, 2004; Khazaie, 2001; Siosemardeh,  
Roustai et al., 2000; Siosemardeh et al., 2002)  
al., 2003)

ATP

(Giardi et al., 1996; Meyer & de Kouchkovsky, 1992;  
Parry et al., 2002)

(Shah &  
Paulsenl, 2003; Stone et al., 2001)

( ) (Stone et al., 2001)

(Blum, 1998)

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 (Delta T Leaf Area Meter) ( ) = / × - / ( )  
 R<sup>2</sup> = /

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 (ADC. LCA4 ) IRGA

= ( )  
 (Ehdaie, 1998; Kobata et al., 1992)

= \_\_\_\_\_ × ( )  
 (Palta et al., 1994)

= \_\_\_\_\_ × ( )  
 (Niu et al., 1998)  
 (LAD)

.(Barrs, 1968)  
 =  $\frac{(\quad)}{(\quad)} \times$  ( )

.(Siosemardeh et al., 2003)  

$$LAD = \frac{LA_2 + LA_1}{2} * (t_2 - t_1)$$
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 t LA

(1949) Arnon

(Shimadzu UV100)

(LAD)

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LSD

Excel

( )

(Chandrasekar et al., 2000; Jabari, 2004; Merah, 2001; Siosemardeh, 2002; Turkan et al., 2005)

$$= \frac{1}{R^2} \times \frac{1}{\text{SPAD}} \quad ( )$$

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(Merah, 2001;

Schonfeld et al., 1988)

(Inoue et al., 2004; Martin

et al., 1993)

SPAD

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(Minolta 502)

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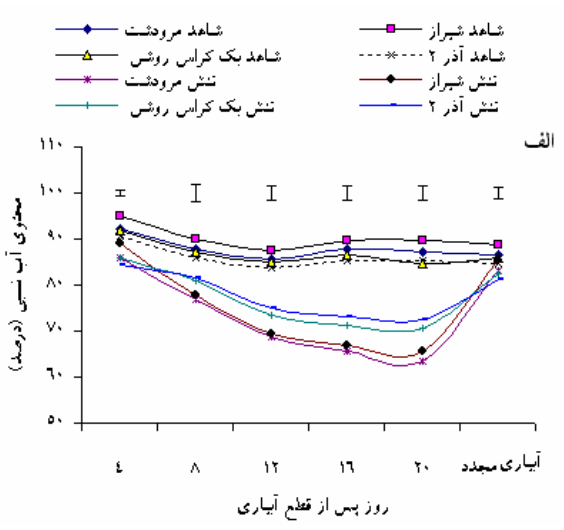
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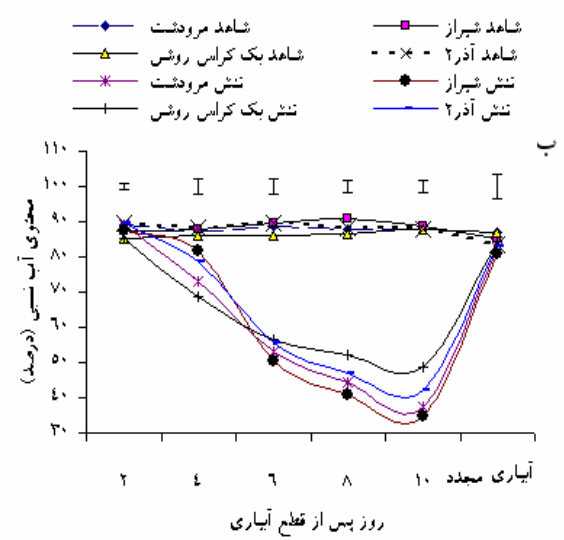


(Ahmadi, 2000; (Ci) Co2 .Cornic, 2000)

Ci ( ) (Ci)

(Ahmadi, 2000)

(Brodrribb, 1996; Lauer & Boyer, 1992; Tezara et Ci .al., 1999)



(Lawlor, 2002; .Miyashita et al., 2005)

(Giardi et al., 1996; II Miyashita et al., 2005)

(Chaitanya et al., 2003; Parry et al., 2002)

(RUBP)

(RUBP)

NADPH ATP

(Haupt-Herting & Fock, 2002; Lawlor, 2002; Meyer & de Kouchkovsky, 1992; Meyer et .al., 1992)

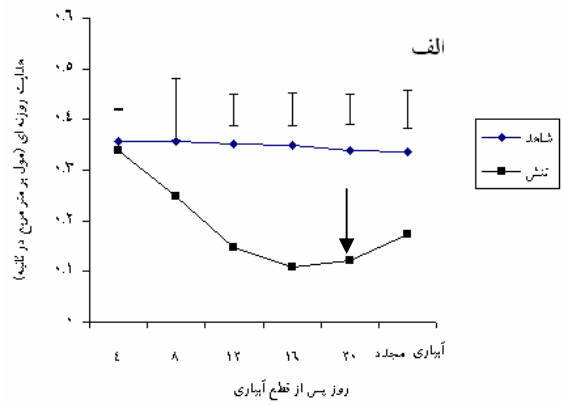
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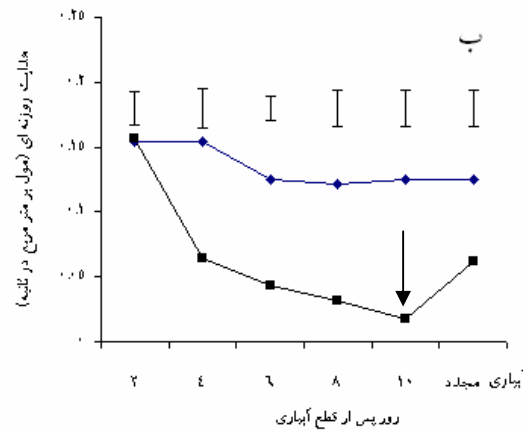
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(Alonso et al., 2001; Kraus et al., 1995;  
 Moran et al., 1994)  
 (Huffaker et al., 1970)



(Kranner et al., 2002; Tardy et al.,  
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(Blum, 1998)

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LSD

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(Shah & Paulsenl, 2003; Simanne et al.,  
 1993; Stone et al., 2001)

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(Araus et al.,  
 2002; Blum, 1998)

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(Simanne et al., 1993)

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(Simanne et al., 1993)

(Ahmadi, 2000; Hong et al., 2005; Jung, 2004;  
 Nayyar & Gupta, 2006)

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(Ehdaie, 1998;

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.Gardner et al., 1985; Kobata et al., 1992)

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(Gooding et al., 2003; Ozturk & Aydin, 2004;

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.Shah & Paulsenl, 2003; Wardlaw, 2002)

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(1993) Simanne et al.

(2003) Siosemardeh

.(Bishop & Bugbee, 1998)

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.(Ehdaie & Waines, 1996; Gardner et al., 1985)

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				( )	( $\mu\text{mol},\text{m}^{-2},\text{s}^{-1}$ )	( $\mu\text{mol},\text{m}^{-2},\text{s}^{-1}$ )						
/ a	/ a	/ a	/ a	a	a	/ a	/ a	/ a	/ a	/ a	/ a	a*
/ b	/ a	/ b	/ a	a	a	/ b	/ b	/ b	/ b	/ b	/ b	b
/ b	/ a	/ d	/ a	b	c	/ ab	/ ab	/ ab	/ ab	/ ab	/ ab	a
/ a	/ b	/ c	/ a	b	a	/ a	/ a	/ a	/ a	/ a	/ a	a
/ b	/ b	/ b	/ b	ab	b	/ b	/ a	/ a	/ a	/ a	/ a	a
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/ c	/ c	/ b	/ b	/ a	/ a	/ b	/ a	/ a	/ b	/ a	/ a	/ a

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(Blum, 1998; Premachandra et al., 1990; Yang et al., 2004) (Kobata et al., 1992; Shah & Paulsenl, 2003)

(Liang et al., 2001) (Gooding et al., 2003; Ozturk & Aydin, 2004; Shah & Paulsenl, 2003; Wardlaw, 2002)  
 (Hopkins & Huner, 2003; Venkateswarlu et al., 1987)

(Egli, 1998; Gooding et al., 2003) (Kobata et al., 1992; Moral et al., 2003; Wardlaw, 2002)

Ahmadi & (Wang et al., 1993) (2001) Baker ( )  
 ADP ( )

(2004) Yang et al. ( )

(1998) Blum .

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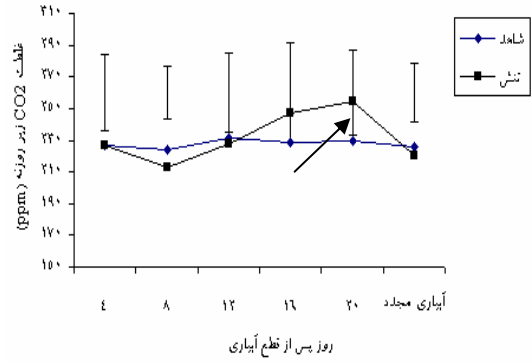
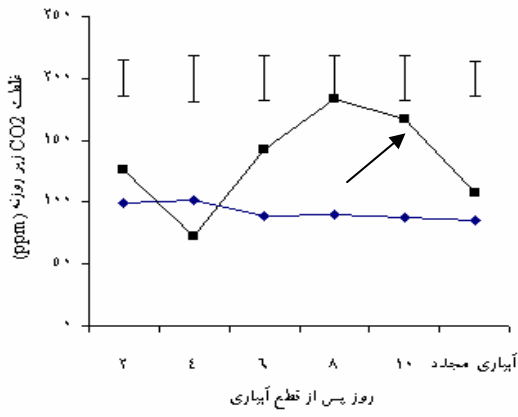
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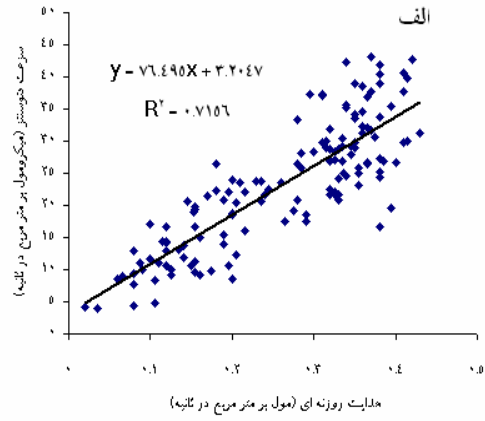
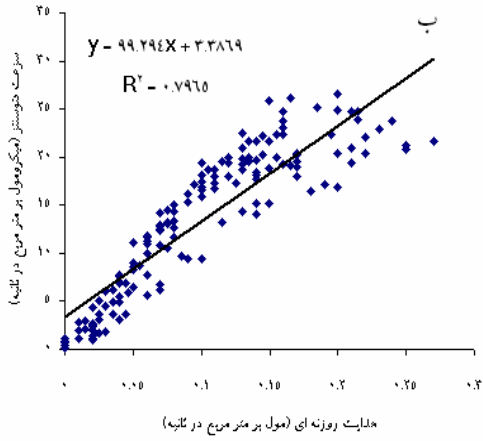
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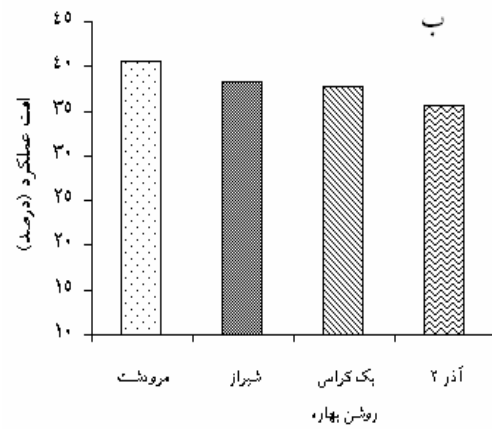
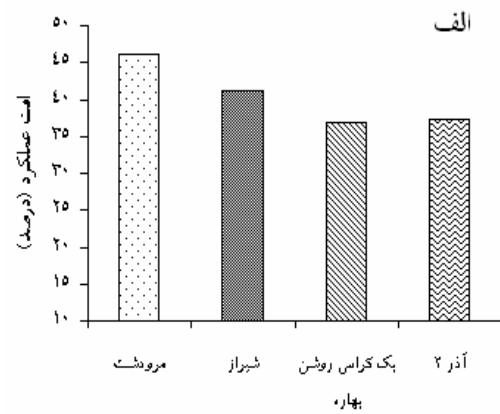
(2003) Moral et al. .

(1993) Simanne et al.

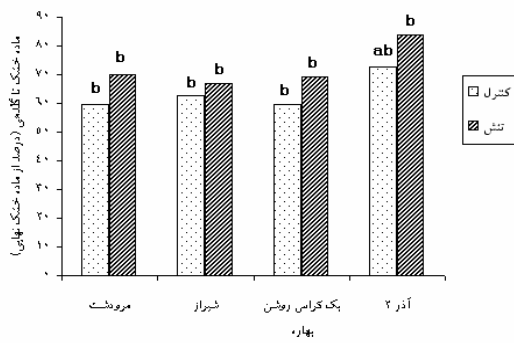
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(Blum, 1993; Niu et al., 1998;  
Siosemardeh, 2002; Yang et al., 2000)



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