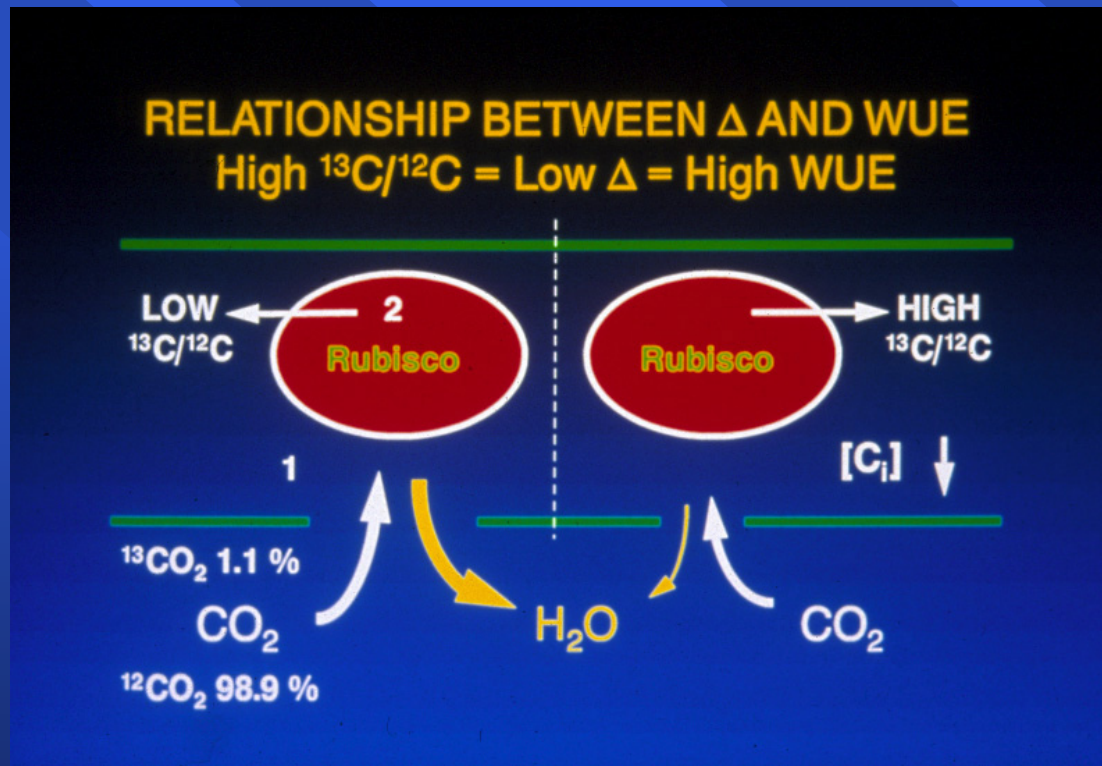


Table 1. Water Use Efficiency (WUE) in leaves of well-watered and drought stressed AMF and Non-AMF neem plants during 23 days of drought followed by a 1 day recovery (day 24).

Mycorrhiza	Drought stress	Water Use Efficiency (g DM/ kg H <sub>2</sub> O)
(AMF)		
Noninoculated	No	2.5
	Yes	0.9
Inoculated	No	2.4
	Yes	1.2
Significance		
AMF		NS
Drought		**
Interaction		NS

# Water Use Efficiency (con)

⇒ Stable Isotope Discrimination ( $C^{13}/C^{12}$ )



⇒ WUE not greater in AMF plants

Table 1. Carbon isotope discrimination ( $\Delta$ ) in leaves of well-watered and drought stressed AMF and Non-AMF neem plants during 23 days of drought followed by a 1 day recovery (day 24).

Mycorrhiza (AMF)	Drought stress	$\Delta$ (‰)		
		Day 0		Day 24
		Mature leaves	Expanding leaves	Mature leaves
Noninoculated	No	20.71±0.17	21.67±0.26	20.81±0.24
	Yes	20.54±0.42	<b>18.66±0.23</b>	20.35±0.51
Inoculated	No	20.32±0.26	21.47±0.12	21.22±0.28
	Yes	20.30±0.37	<b>19.03±0.59</b>	20.18±0.35
Significance				
AMF		NS	NS	NS
Drought		NS	**	NS
Interaction		NS	NS	NS

# AMF --MICROPROPAGATED CHILE ANCHO PEPPER PLANTLETS DURING ACCLIMATIZATION AND POST-ACCLIMATIZATION

## Inoculation Technique



# Transplantation of Chile Ancho

## Growth Chamber 5 days

Day 1 — Near 100 % RH

Day 2 — Near 100 %

Day 3 — 80 %

Day 4 — 70 %

Day 5 — 60 %



**Explant**



**Rooted Explant**



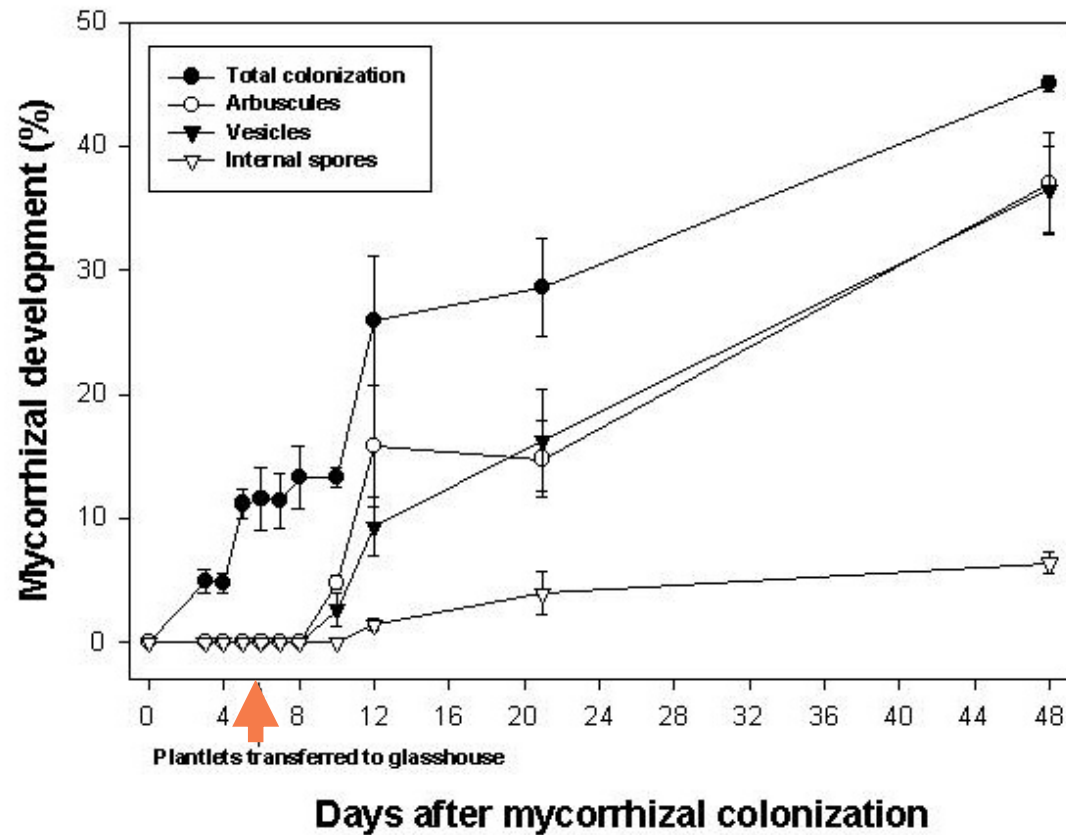
**5-Day Growth Chamber**



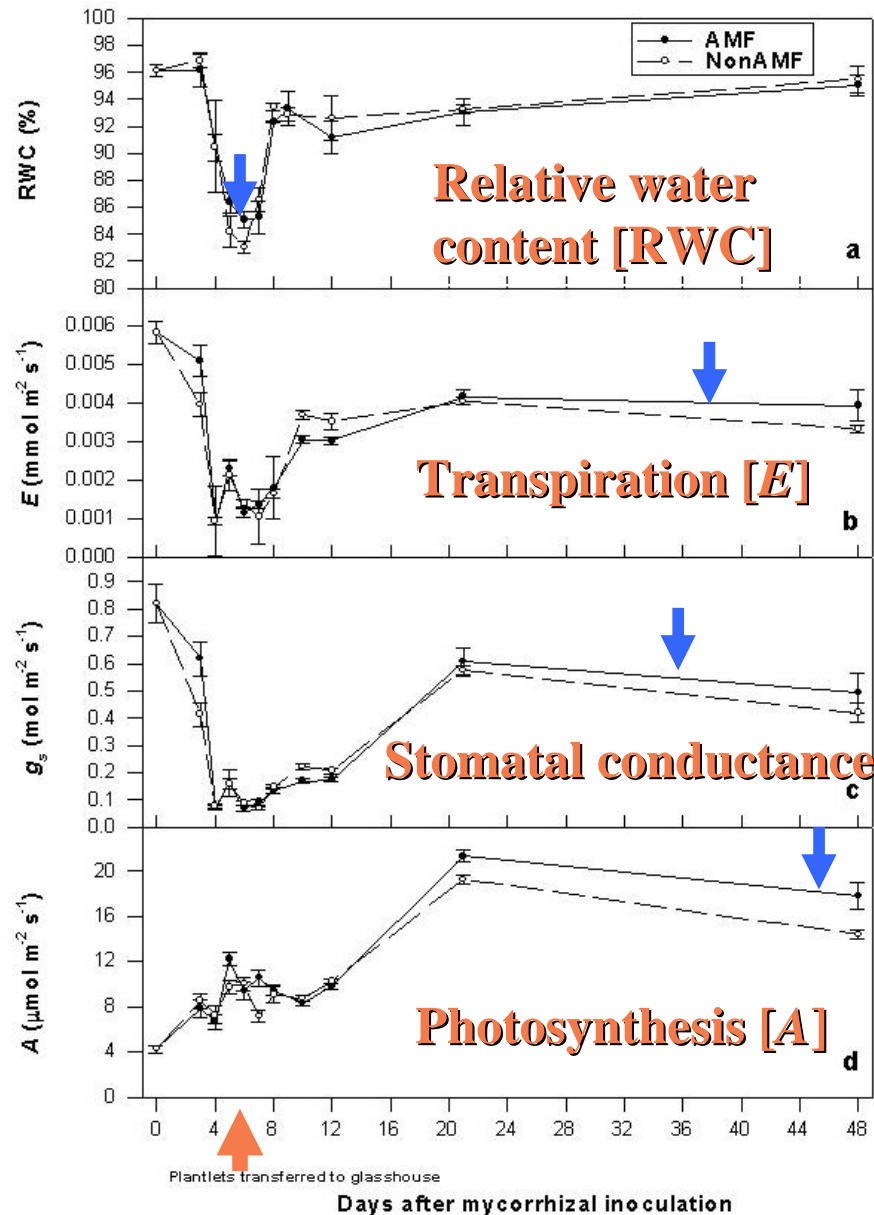
**Day 6: Transfer to GH**



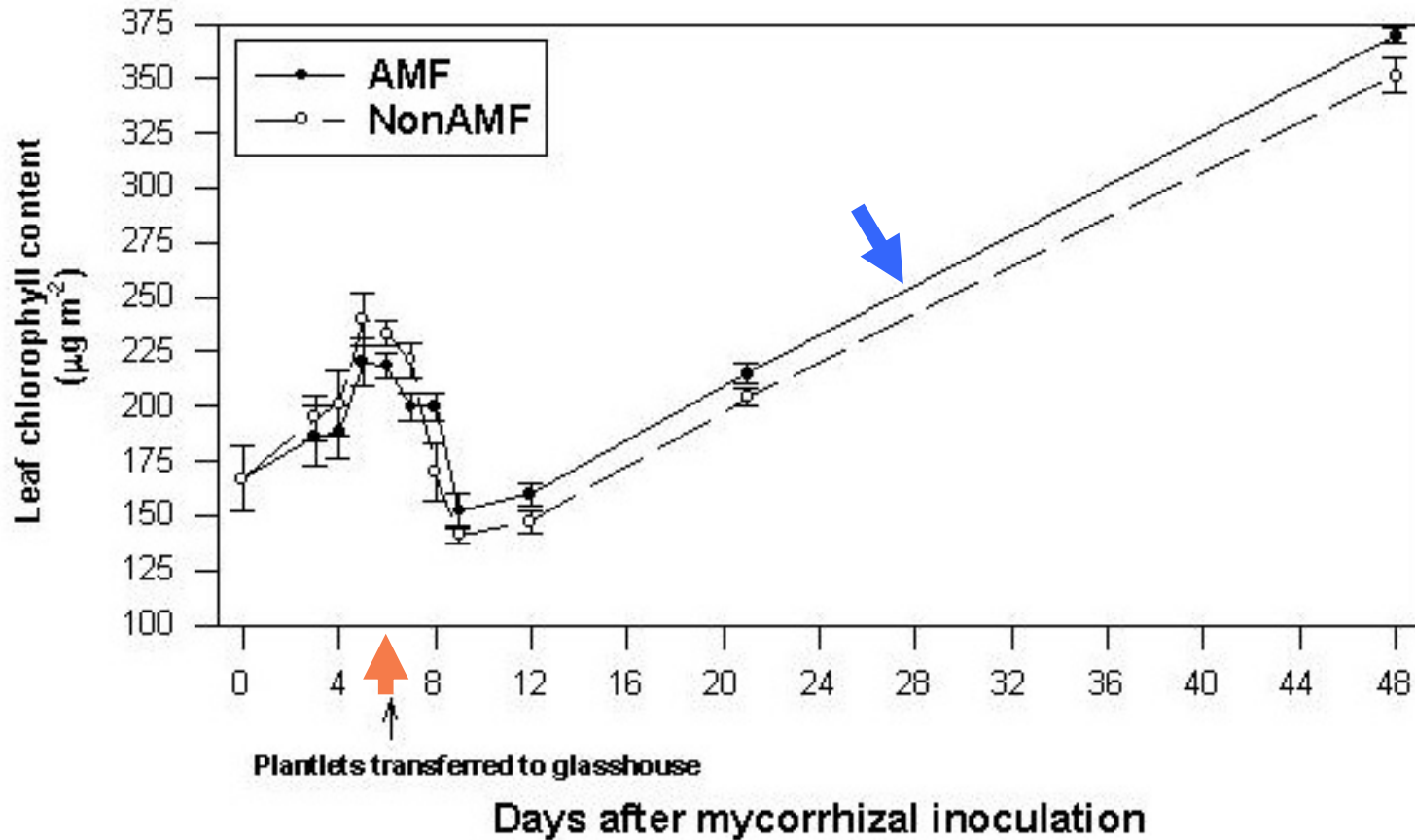
**Transplant**



**Development of mycorrhiza in micropropagated chile ancho pepper (*Capsicum annuum* L. cv. San Luis) plantlets during acclimatization and post-acclimatization (Estrada-Luna & Davies, 2003).**



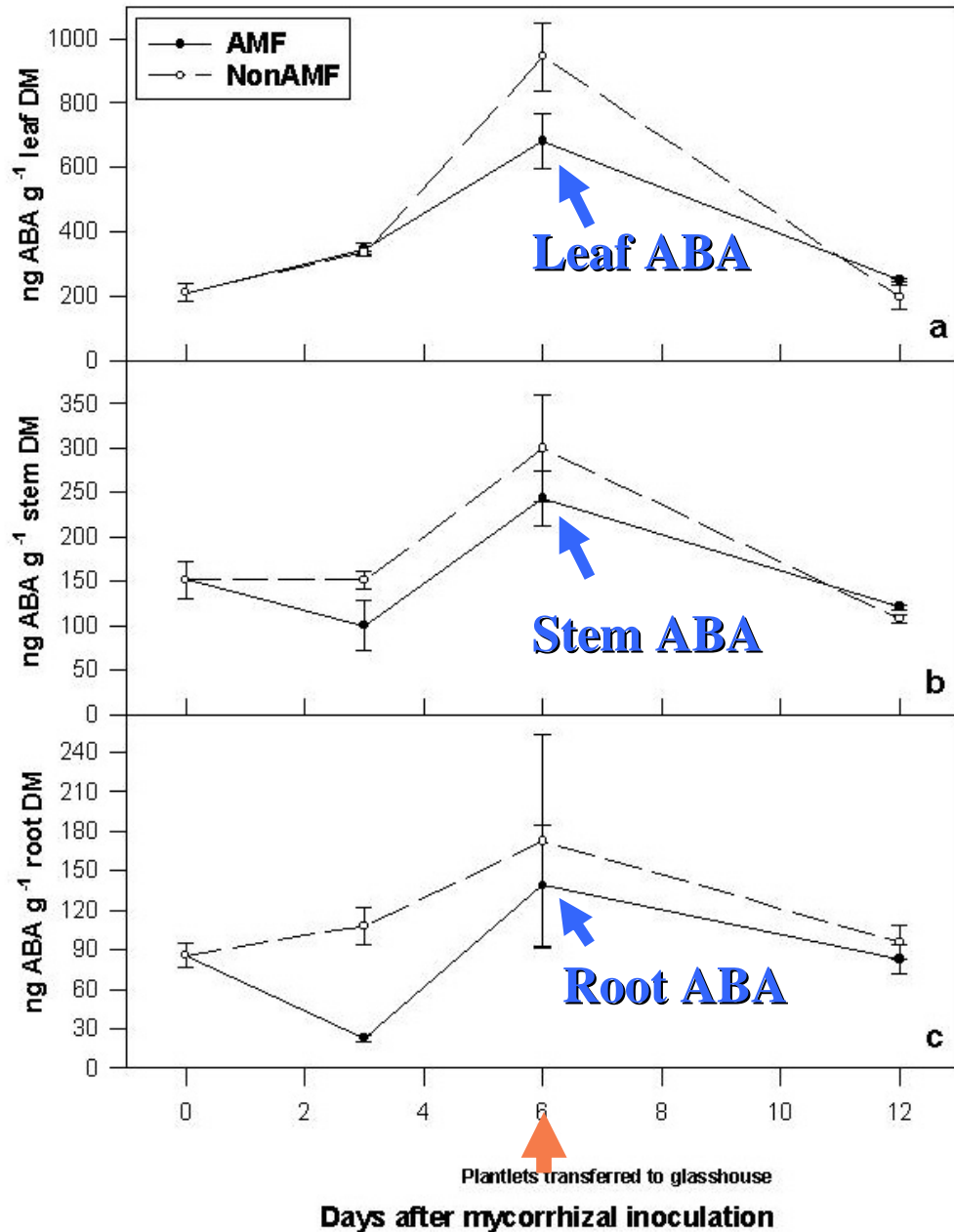
**Noncolonized (NonAMF) and AMF micropropagated chili ancho pepper (*Capsicum annuum* L. cv. San Luis) plantlets during acclimatization and post-acclimatization**  
 (Estrada-Luna & Davies, 2003).



**Leaf chlorophyll of noncolonized (NonAMF) and AMF micropropagated chile ancho pepper (*Capsicum annuum* L. cv. San Luis) plantlets during acclimatization and post-acclimatization. (Estrada-Luna & Davies, 2003).**

**Abscisic acid (ABA) in noncolonized (NonAMF) and AMF micropropagated chile ancho pepper (*Capsicum annuum* L. cv. San Luis) plantlets during acclimatization**

**(Estrada-Luna & Davies, 2003).**



# Summary

- ⇒ AMF can enhance plant water relations independent of tissue P.
- ⇒ Differences among AMF isolates in plant water relations.
- ⇒ AMF not more Water Use Efficient
- ⇒ Decreased ABA.
- ⇒ Drought stress can enhance AMF symbiosis.
- ⇒ AMF plants are better acclimated to drought (greater plant fitness)
- ⇒ Importance of Extraradical Hyphae-associated soil characteristics-  
soil moisture retention
- ⇒ Mechanistic understanding of AMF & Water relations is incomplete  
(Safir et. al, 1972; Reid, 1979; Augé 2001, 2003)

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