



Effect on tomato cultivars (*Solanum lycopersicum* cv. Amelia, Rutgers)

The interaction between high temperature and nematode under combined stress at plant interface

Crop: Tomato (*Solanum lycopersicum* cv. Amelia, Rutgers)
 Stress 1: Heat (35°C)
 Stress 2: *Meloidogyne incognita* (500 J2 per/pot)
 Stage of plant: 3 weeks old plant

The table shows the effect of high temperature on nematode induced galls per plant under combined stress treatment.

	Treatment	Response to combined stress**
		Type B parameters*
		Galls per plant
Amelia	Control	4.5
	Heat (1 day) + <i>Meloidogyne incognita</i> (500 J2 per/pot) (Sequential stress)	13.5
	Heat (6 day) + <i>Meloidogyne incognita</i> (500 J2 per/pot) (Sequential stress)	3.0
	Heat (1 day) + <i>Meloidogyne incognita</i> (500 J2 per/pot) 6 days later (Sequential stress)	4.5
Rutgers	Control	132.0
	Heat (1 day) + <i>Meloidogyne incognita</i> (500 J2 per/pot) (Sequential stress)	172.0
	Heat (6 day) + <i>Meloidogyne incognita</i> (500 J2 per/pot) (Sequential stress)	184.9
	Heat (1 day) + <i>Meloidogyne incognita</i> (500 J2 per/pot) 6 days later (Sequential stress)	129.8

Reference - Marques de Carvalho L, Benda ND, Vaughan MM, Cabrera AR, Hung K, Cox T, Abdo Z, Allen LH, Teal PE (2015) Mi-1-Mediated Nematode Resistance in Tomatoes is Broken by Short-Term Heat Stress but Recovers Over Time. *J Nematol.* 47(2):133-140.

Note:

‘’ - For more information on parameter classification, please refer to the ‘methodology’ tab.*

*‘**’ - Values are presented as it is from the source article without subjecting to the calculation.*

Inference from the study: Marques et.al.2015 studied the interaction of high temperature and *Meloidogyne incognita* interaction in two tomato cultivars Amelia and Rutgers. Plants were first grown at a temperature of 35°C along then the nematode was inoculated sequentially. The number of galls per plant was counted, which was more when heat treatment was given for 1 day. Prolonged heat treatment resulted in less gall number in cultivar amelia but more galls in rutgers. Also, when nematode was inoculated after a gap of 6 days post heat treatment, gall number was the same as control plants in both cultivars. **Thus, this stress combination is detrimental to tomato cultivars.**