

Effect on thalecress accessions (*Arabidopsis thaliana*)
A. The net impact of combined stress on plant growth

The table shows the effect of combined virus and high/low light stress on the growth of thalecress accessions

Accessions	Stress treatments	Plant response to combined stress		
		Type A parameters *		
		Rosette weight (ratio I/M)	Inflorescence weight (ratio I/M)	Seed weight (ratio I/M)
Iberian Peninsula-8 (group1)	Low light-UK1-TuMV	0.04	0.01	0.01
	High light-UK1-TuMV	0.2	0.4	0.03
	Low light-JPN1-TuMV	0.4	0.5	0.4
	High light-JPN1-TuMV	0.8	0.90	0.40
	Low light-LS-CMV	0.4	0.50	1.20
	High light-LS-CMV	0.8	1.40	0.80
Eurasian geographic distribution-10 (group2)	Low light-UK1-TuMV	0.5	0.20	0.12
	High light-UK1-TuMV	0.7	0.70	0.13
	Low light-JPN1-TuMV	0.7	0.40	0.32
	High light-JPN1-TuMV	1.2	0.90	0.43
	Low light-LS-CMV	0.6	0.60	0.50
	High light-LS-CMV	1.2	1.10	0.70

I- Virus infected; M- Mock inoculated

Note: Values are presented as it is from the source article without subjecting to the calculation.

* - For more information on parameters classification, please refer to 'methodology' tab.



B. Interaction between virus and high/low light stress at plant interface

Table shows the effect of light intensity on virus seed transmission and multiplication under combined stress in thalecress accessions

Accessions	Stress treatments	Plant response under combined stress Type B parameters *	
		Virus seed transmission (%)	Virus accumulation (ng virus RNA/ μ g of total plant RNA)
Iberian Peninsula-8 (group1)	Low light-UK1-TuMV	0.11	0.46
	High light-UK1-TuMV	0.24	1.23
	Low light-JPN1-TuMV	1.76	0.9
	High light-JPN1-TuMV	3.79	0.20
	Low light-LS-CMV	5.01	10.40
	High light-LS-CMV	5.21	7.80
Eurasian geographic distribution-10 (group2)	Low light-UK1-TuMV	7.75	0.14
	High light-UK1-TuMV	12.90	1.20
	Low light-JPN1-TuMV	9.20	0.90
	High light-JPN1-TuMV	16.90	0.10
	Low light-LS-CMV	3.42	11.70
	High light-LS-CMV	4.43	3.80

For raw data – Click here (.xlsx file)

Reference- Montes N, Pagan I. (2019) Light intensity modulates the efficiency of virus seed transmission through modifications of plant tolerance. *Plants* 8(9):304.

Note: Values are presented as it is from the source article without subjecting to the calculation.

* - For more information on parameters classification, please refer to 'methodology' tab.



The inference from the study: The study by Montes and Pagan, 2019 was focused on understanding the effect of varying light intensity on the virus multiplication, transmission and their combined effect on the growth of thalecress. Experiments were conducted using accessions from two regions, one from Iberian Peninsula-8 (group1- Cad-0, Cdm-0, Cum-0, Kas-o, Kas-2, Kyo-1, Ll-0, Ver-5) and second from Eurasian geographic distribution-10 (group2- An-1, bay-0, Cen-1, Col-0, Cvi, Fei-0, Ler, Mer-0, Pro-0, Shak). Two virus strains i.e. *Turnip mosaic virus* (TuMV) (UK1 & JPN1) and *Cucumber mosaic virus* (CMV) (LS) were used in the experiment. Seed, inflorescence and rosette weight were consistently high under high light-virus stress combination as compared to low light with virus combination in both the regions of accessions. There was no significant difference in growth and productivity between the two regions of accessions however, Eurasian geographic distribution accessions showed relatively higher virus transmission percentage compared to Iberian Peninsula accessions. **Altogether study indicates a negative impact of low light-virus stress combination on thalecress growth and also virus multiplication and transmission.**