



Effect on cucumber genotypes (*Cucumis sativus*)

The interaction between the virus and temperature treatment under combined stress at plant interphase

Plant: Cucumber (*Cucumis sativus*)
 Stress 1: Melon yellow spot virus-S (*MYSV-S*), melon yellow spot virus-FuCu05P (*MYSV-FuCu05P*)
 Stress 2: Heat
 Stage of plant: 7 days old

Table showing an impact of different temperatures on *MYSV* induced necrotic spots and its growth on cucumber genotypes

Cucumber accession	MYSV-isolates	Treatment	Response under combined stress			
			Type B parameter*			
			Plants with a necrotic spot on cotyledon (%)	Cotyledon area with virus(%)	Plant with virus (%)	Viral titer (ELISA O.D. A405)
27028930	MYSV-S	Virus+30 °C	72.2	13.79	39.3	NA
		Virus+25 °C	0	2.53	8.9	0.11
		Virus+20 °C	0	3.79	0	NA
	MYSV-FuCu05P	Virus+30 °C	55.6	16.45	100	NA
		Virus+25 °C	33.3	10.88	100	0.138
		Virus+20 °C	0	6.32	100	NA
Yamakyuri-1	MYSV-S	Virus+30 °C	100	35.15	75	NA
		Virus+25 °C	66.7	6.9	34.7	0.128
		Virus+20 °C	0	3.57	0	NA
	MYSV-FuCu05P	Virus+30 °C	83.3	23.59	100	NA
		Virus+25 °C	66.7	23.04	100	0.207
		Virus+20 °C	0	9.29	100	NA
Shimoshirazu	MYSV-S	Virus+30 °C	100	53.37	100	NA
		Virus+25 °C	100	50.64	100	0.496
		Virus+20 °C	100	35.08	100	NA
	MYSV-FuCu05P	Virus+30 °C	100	52.35	100	NA
		Virus+25 °C	100	60.64	100	1.194
		Virus+20 °C	72.2	30.21	100	NA

For raw data – Click here (.xlsx file)

Reference- Sugiyama *et al.*, 2009

Note: Values 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: Sugiyama *et al.*, 2009 study aims to understand the effect of different temperatures on *Melon yellow spot virus* (*MYSV-S* & *MYSV-FuCu05P*) induced necrotic spots on cucumber accessions 27028930, Shimoshirazu, and Yamakyuri-1 cotyledons. The result indicated that with increasing temperature treatment more number of plants showed necrotic spots on cotyledons and cotyledon area with virus irrespective of accessions and viral strain. Among the accessions, Shimoshirazu showed more necrotic spots and cotyledon area with virus.

Moreover, among the viral strains, *MYSV-S* showed higher virulence in 27028930 and Yamakyuri-1 accessions. In case of Shimoshirazu, no difference was found between the strains. The viral concentration was more under Shimoshirazu accession under both the strain treatment



Stress Combination and their Interaction in Plants (SCIP) Database

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compared to other accessions. **The overall result indicates that higher temperature (30°C) facilitate virus multiplication and increased necrotic spots on cotyledons of cucumber accessions (27028930, Shimoshirazu, and Yamakyuri-1).**