Field trial
results

Priming

In the presence of *Vasate* in **tomato**

Objective

To evaluate the effectiveness of Priming

in the presence of *Vasate* in tomato crop

Material & methods

Location: La Cañada (Almería) - Spain

Crop: Organic tomato, variety Angelle

Start of trial: May 7th

End of trial: June 21st

Material & methods

Nº of plants for **TA and TB**: 15 plants x 3 repetitions = 45 plants per treatment

Type of application: radicular

Application dose: **TA** and **TB**: 2,5 l/ha

Applications:

TA: 3 applications with 10 days intervals

TB: 3 applications with 20 days intervals

Evaluations dates: according to following table

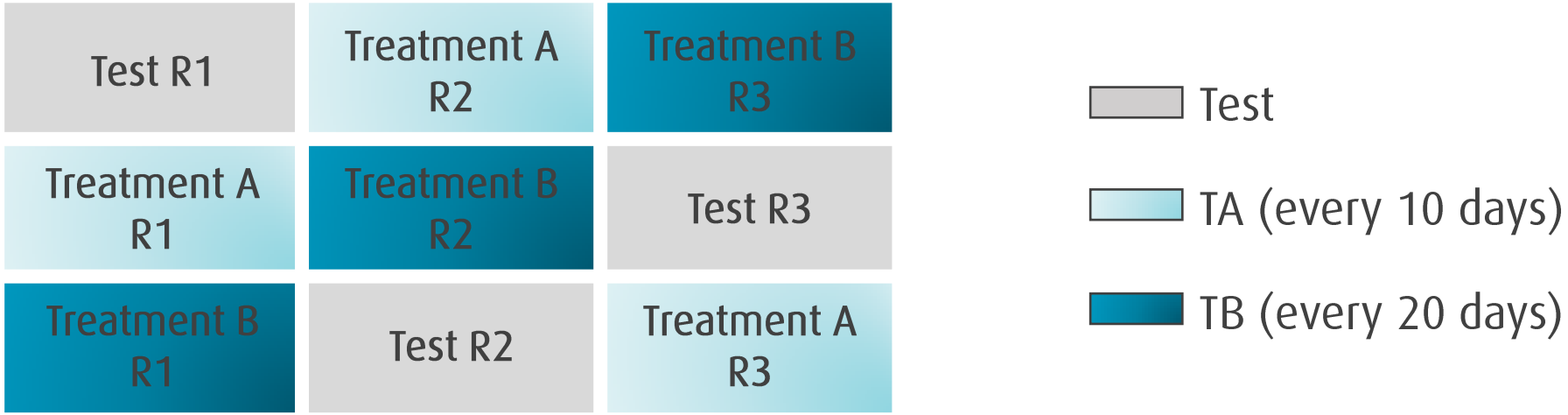
Material & methods

TREATMENT A (3 applications with 10 days intervals)		
Date	Days after last application	Treatment
May 7th		Eval./Applic.
May 17th	10	Eval./Applic.
May 27th	10	Eval./Applic.
June 4th	8	Sampling
June 10th	14	Sampling

TREATMENT B (3 applications with 20 days intervals)		
Date	Days after last application	Treatment
May 7th		Eval./Applic.
May 27th	20	Eval./Applic.
June 10th	14	Eval./Applic.
June 17th	7	Sampling
June 21st	11	Sampling

Field sketch

Location: La Cañada	**Region:** Almería	
Crop: Organic tomato	**Variety:** Angelle	**Application system:** Radicular
Plantation: Greenhouse	**Number of plants:** 15	**Number of replicas:** 3



Evaluated parameters

Damage index

Number of eggs per leaf

Number of larvae per leaf

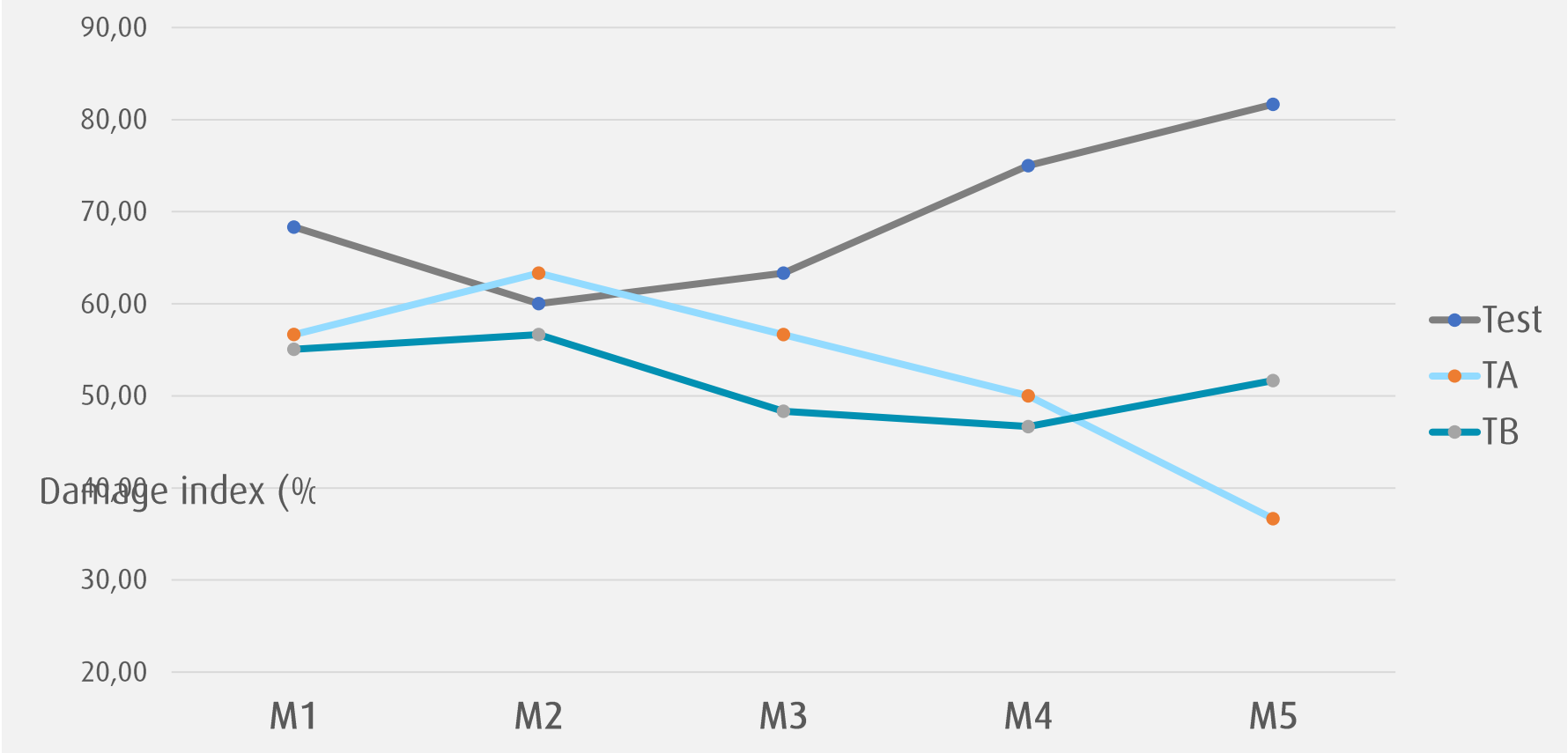
Phytohormones in leaves

Results: Damage index (%)

	Before first application	Before second application	Before third application	7 days after last application	14 days after last application
Test	68,33	60,02	63,33	75,00	81,66
Treatment A (every 10 days)	56,66	63,33	56,66	50,00	36,66
Treatment B (every 20 days)	55,06	56,66	48,33	46,66	51,66

Table 1:
Damage index (%)

Results: Damage index (%)



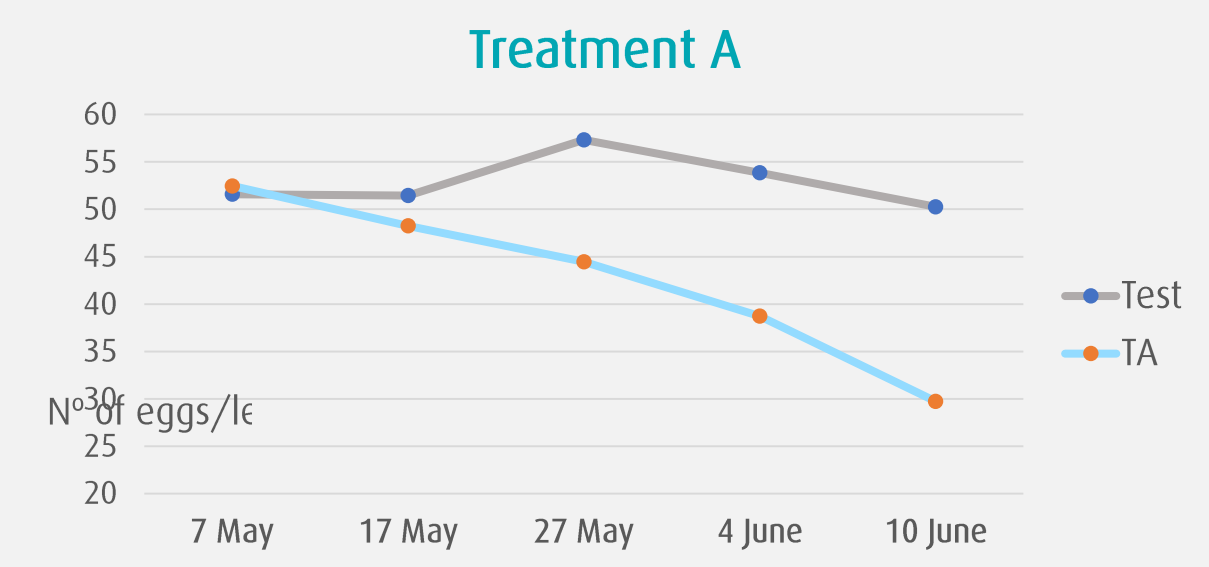
Graph 1: Damage index (%)

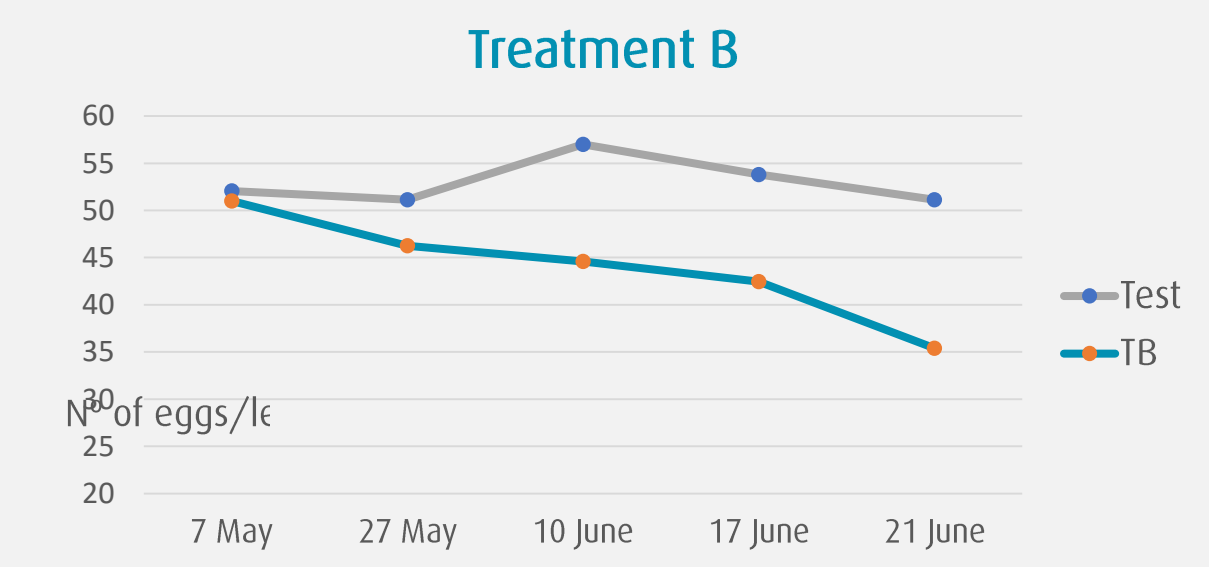
Results: Nº of eggs

	Before first application	Before second application	Before third application	7 days after last application	14 days after last application
Test	51,60	51,46	57,33	53,86	50,26
Treatment A (every 10 days)	52,46	48,26	44,46	38,73	29,73
Test	52,06	51,13	57,00	53,80	51,13
Treatment B (every 20 days)	51,00	46,26	44,60	42,46	35,40

Table 2:
Average number of *Vasate* eggs per leaf

Results: Nº of eggs





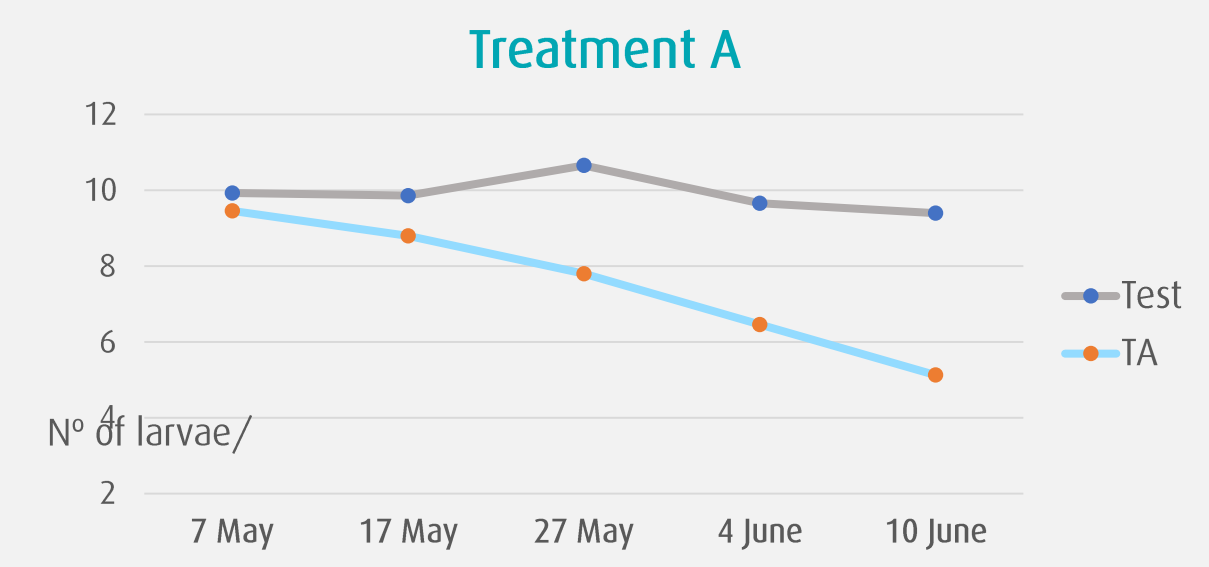
Graphs 2 & 3: Average number of *Vasate* eggs per leaf

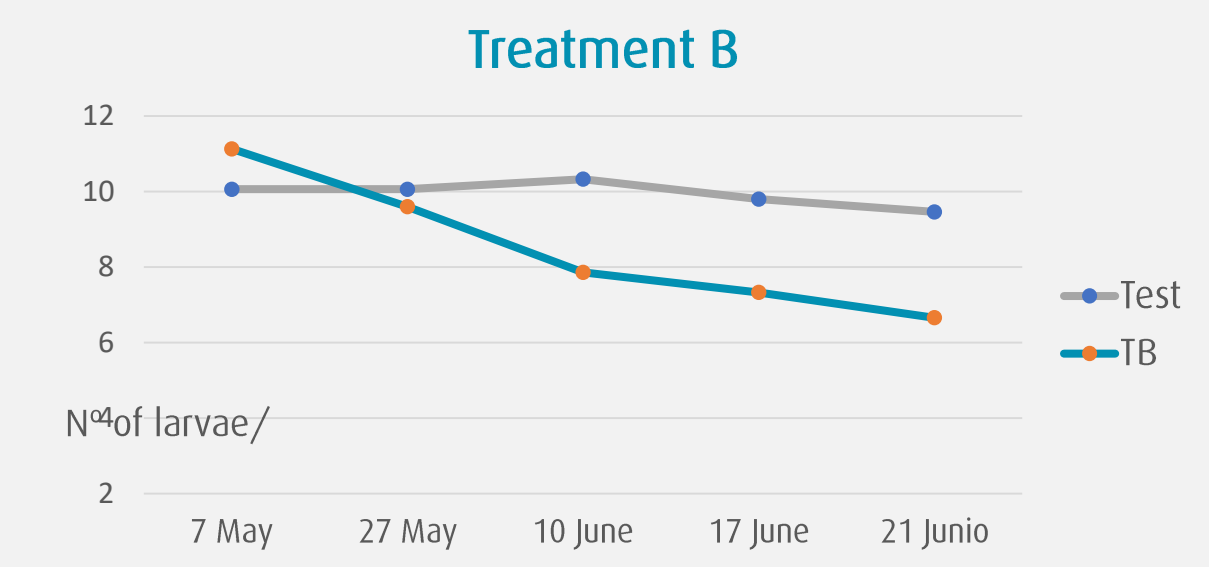
Results: Nº of larvae

	Before first application	Before second application	Before third application	7 days after last application	14 days after last application
Test	9,93	9,86	10,66	9,66	9,40
Treatment A (every 10 days)	9,46	8,80	7,80	6,46	5,13
Test	10,06	10,06	10,33	9,80	9,46
Treatment B (every 20 days)	11,13	9,60	7,86	7,33	6,66

Table 3:
Average number of *Vasate* larvae per leaf

Results: Nº of larvae





Graphs 4 & 5: Average number of *Vasate* larvae per leaf

Results: Phytohormones

Phytohormones play an important role in the process of resistance of the plant to different pathogens. The main phytohormones that are altered are salicylic acid and jasmonic acid.

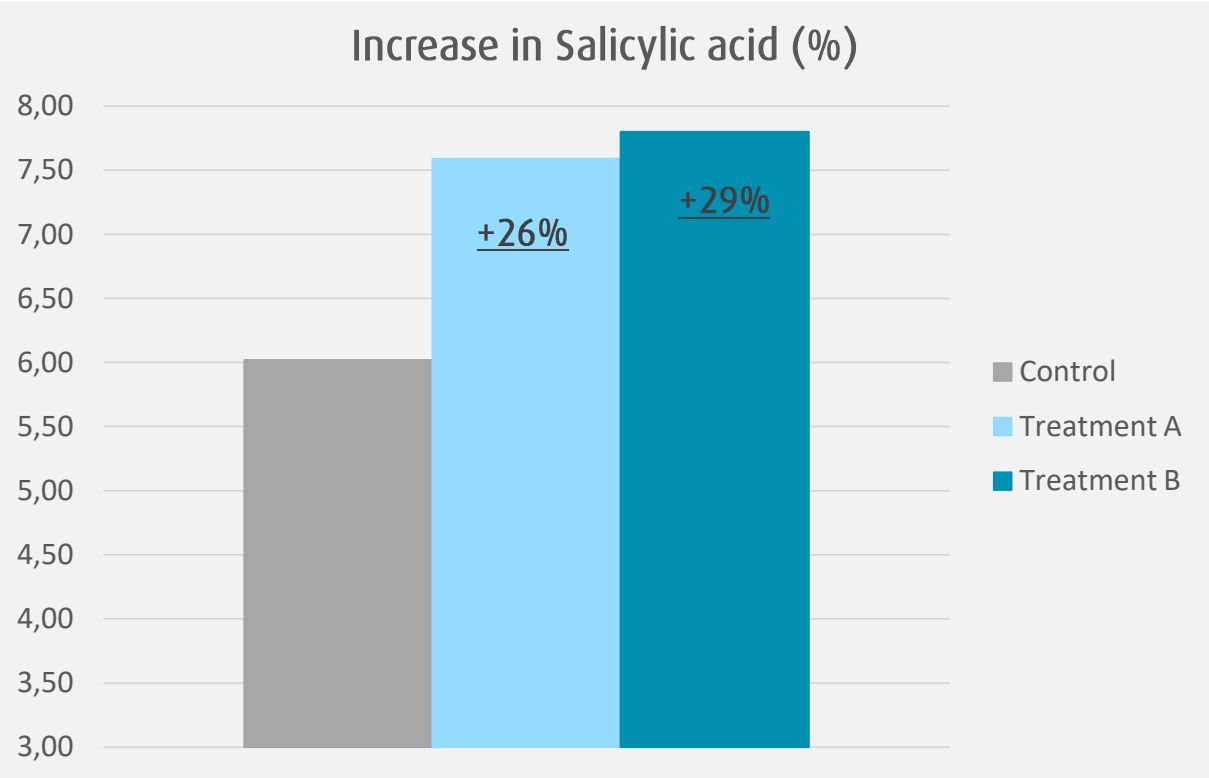
Different signals from phytohormones can trigger a series of physiological and metabolic processes in cells regulating resistance-related genes and initiate the corresponding immune responses.

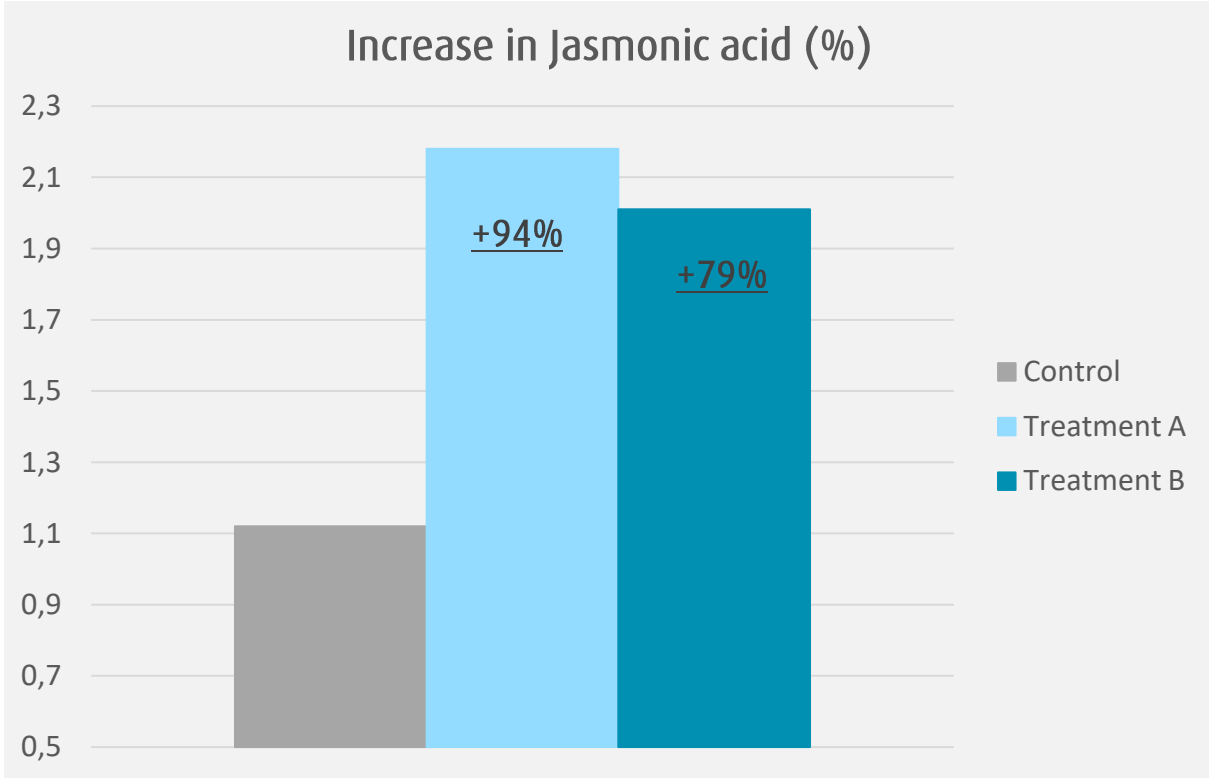
The application of priminh causes an increase in the endogenous content of salicylic acid and jasmonic acid in the presence of biotic stress.

Hormone	Salicylic Ac. (SA)	%	Jasmonic Ac. (JA)	%
Test	6.02		1.12	
Treatment A	7.59	+26	2.18	+94
Treatment B	7.80	+29	2.01	+79

Table 4:
Endogenous content of phytohormones in leaves (ng/g)

Results: Phytohormones





Graph 6: Endogenous content of phytohormones in leaves (ng/g)

Conclusions

Applying priming technology in tomato we get:

Reduction of damage index

Reduction of number of eggs per leaf

Reduction of number of larvae per leaf

Increase of content of phytohormones in leaves