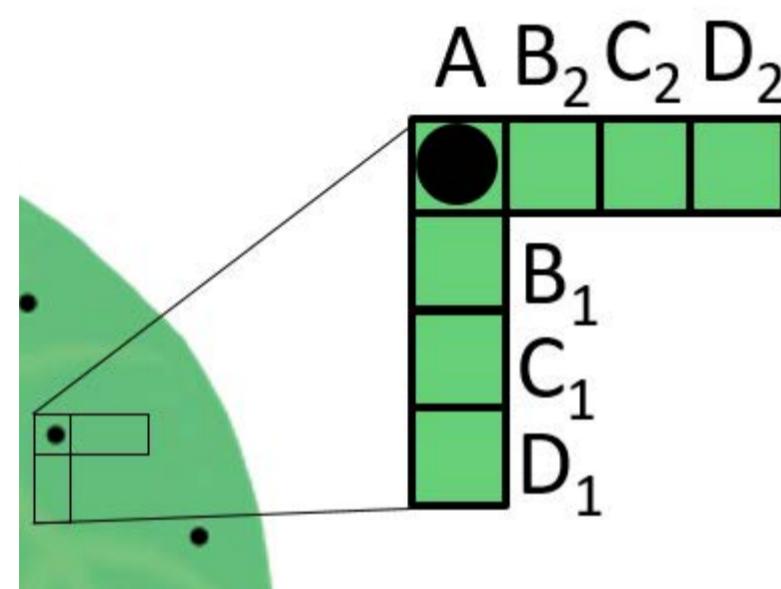


**Figure S7: 3D animated spatial gene expression of immune signaling genes at the time of early visible lesions.**  
 Spatial profile of immune signaling related genes is shown for NT (a) and NahG (b) plants, inoculated with PVY<sup>N</sup>-Wilga. Tissue sections were at the time of early visible lesions taken in two perpendicular directions (see Figure 1), here shown as the x-axis and y-axis. Relative gene expression is shown on the z-axis. See Figure 1 legend for full gene names.

Formula for calculation of gene expression values in-between both perpendicular sections



$(A1+A2)/2$	B1	C1	D1
B2	$(B1+B2)/2$	$C1+(C1+C2)/2$	$2/3D1+1/3(D1+D2)/2$
C2	$C2+(C1+C2)/2$	$(C1+C2)/2$	$1/3D1+2/3(D1+D2)/2$
D2	$2/3D2+1/3(D1+D2)/2$	$1/3D2+2/3(D1+D2)/2$	$(D1+D2)/2$

**Virus**

PVY

Rywal

NahG-Rywal

**ROS signaling**

CAT1

Rywal

NahG-Rywal

PRX28

Rywal

NahG-Rywal

RBOHA

Rywal

NahG-Rywal

RBOHC

Rywal

NahG-Rywal

RBOHD

Rywal

NahG-Rywal

TRXO

Rywal

NahG-Rywal

TRXH

Rywal

NahG-Rywal

**Ethylene signaling**

ERF1

Rywal

NahG-Rywal

**Jasmonic acid biosynthesis**

13-LOX

Rywal

NahG-Rywal

9-LOX

Rywal

NahG-Rywal

ACX3

Rywal

NahG-Rywal

**Actuator of defence**

PR1B

Rywal

NahG-Rywal

**Programmed cell death**

MC3

Rywal

NahG-Rywal

LSD1

Rywal

NahG-Rywal

**\*Note:** use Bookmarks for more details**\*\*Note:** use View -> Page Display - > Two Page View to comparably inspect 3D animation of NT and NahG genotypes

Experiment3  
**Early visible lesions**

Rywal, PVY<sup>N-Wilga</sup> inoculated  
9-LOX standardised expression in two perpendicular directions  
***Jasmonic acid biosynthesis pathway***

Experiment3  
**Early visible lesions**

NahG-Rywal, PVY<sup>N-Wilga</sup> inoculated

9-LOX standardised expression in two perpendicular directions

***Jasmonic acid biosynthesis pathway***

Experiment3  
**Early visible lesions**

Rywal, PVY<sup>N-Wilga</sup> inoculated  
13-LOX standardised expression in two perpendicular directions  
***Jasmonic acid biosynthesis pathway***

Experiment3  
**Early visible lesions**

NahG-Rywal, PVY<sup>N-Wilga</sup> inoculated  
13-LOX standardised expression in two perpendicular directions  
***Jasmonic acid biosynthesis pathway***

Experiment3  
**Early visible lesions**

Rywal, PVY<sup>N-Wilga</sup> inoculated  
ACX3 standardised expression in two perpendicular directions  
***Jasmonic acid biosynthesis pathway***

Experiment3  
**Early visible lesions**

NahG-Rywal, PVY<sup>N-Wilga</sup> inoculated  
ACX3 standardised expression in two perpendicular directions  
***Jasmonic acid biosynthesis pathway***

Experiment3

**Early visible lesions**

Rywal, PVY<sup>N-Wilga</sup> inoculated

ERF1 standardised expression in two perpendicular directions

***Ethylene signaling pathway***

Experiment3  
**Early visible lesions**

NahG-Rywal, PVY<sup>N-Wilga</sup> inoculated

ERF1 standardised expression in two perpendicular directions

*Ethylene signaling pathway*

Experiment3

**Early visible lesions**

Rywal, PVY<sup>N-Wilga</sup> inoculated

PR1B standardised expression in two perpendicular directions

*Actuator of defence pathway*

Experiment3  
**Early visible lesions**

NahG-Rywal, PVY<sup>N-Wilga</sup> inoculated

PR1B standardised expression in two perpendicular directions

*Actuator of defence pathway*

Experiment3  
**Early visible lesions**

Rywal, PVY<sup>N-Wilga</sup> inoculated  
MC3 standardised expression in two perpendicular directions  
***Programmed cell death pathway***

Experiment3  
**Early visible lesions**

NahG-Rywal, PVY<sup>N-Wilga</sup> inoculated  
MC3 standardised expression in two perpendicular directions  
***Programmed cell death pathway***

Experiment3  
**Early visible lesions**

Rywal, PVY<sup>N-Wilga</sup> inoculated  
LSD1 standardised expression in two perpendicular directions  
***Programmed cell death pathway***

Experiment3  
**Early visible lesions**

NahG-Rywal, PVY<sup>N-Wilga</sup> inoculated  
LSD1 standardised expression in two perpendicular directions  
***Programmed cell death pathway***