



Plant & Food
RESEARCH

RANGAHAU AHUMĀRA KAI



for Plant & Food Research Limited

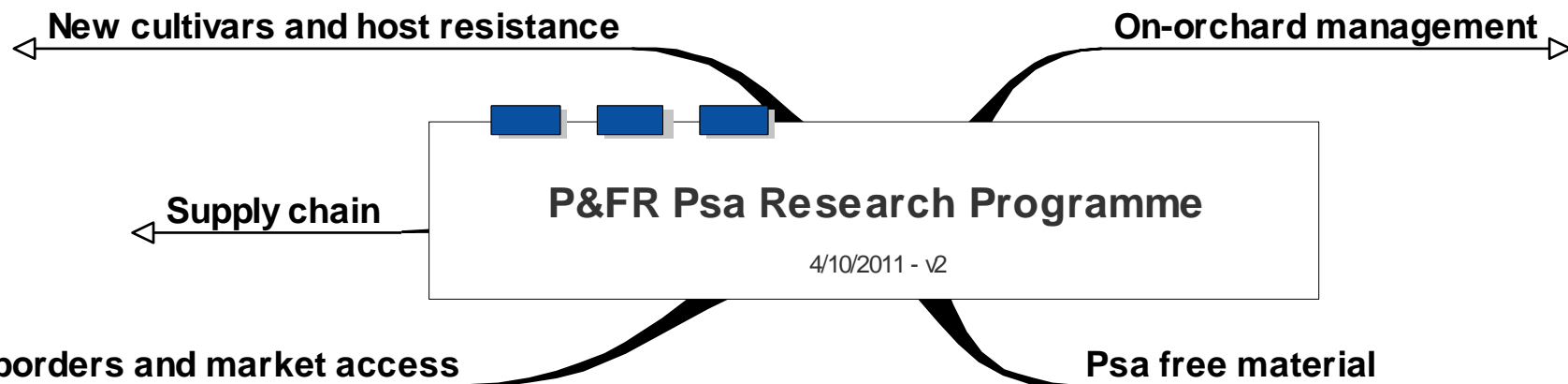
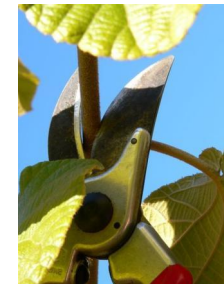
Peter Landon-Lane
Bruce Campbell
Stuart Kay

Our vision

**Successful control of Psa
using orchard management
in combination with
tolerant cultivars.**

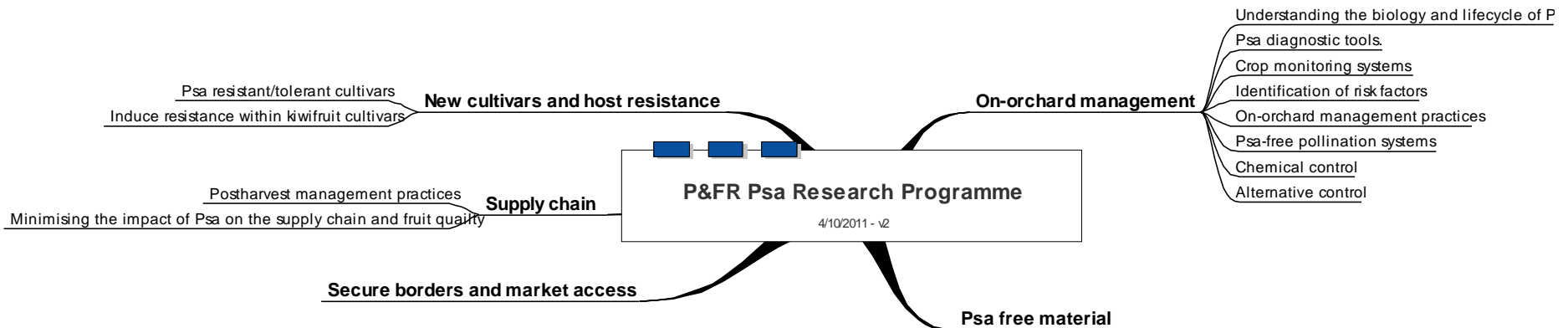
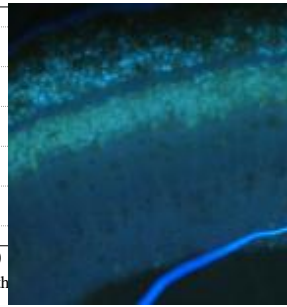
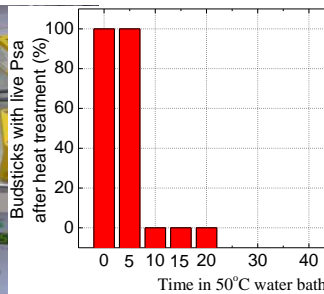


Managing Psa



- Integration of ZESPRI/KVH, KRIP and MSI research projects
- 100 people and \$10 million

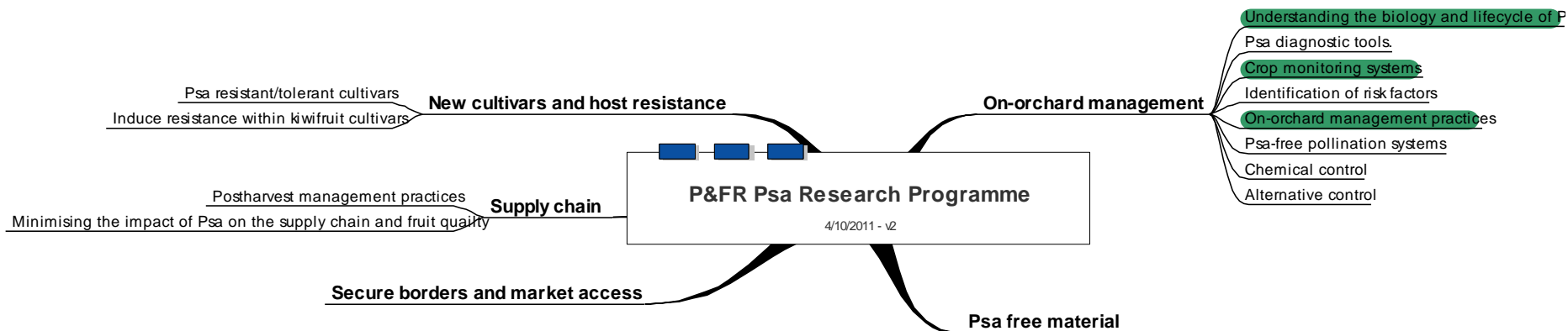
Managing Psa



Managing Psa



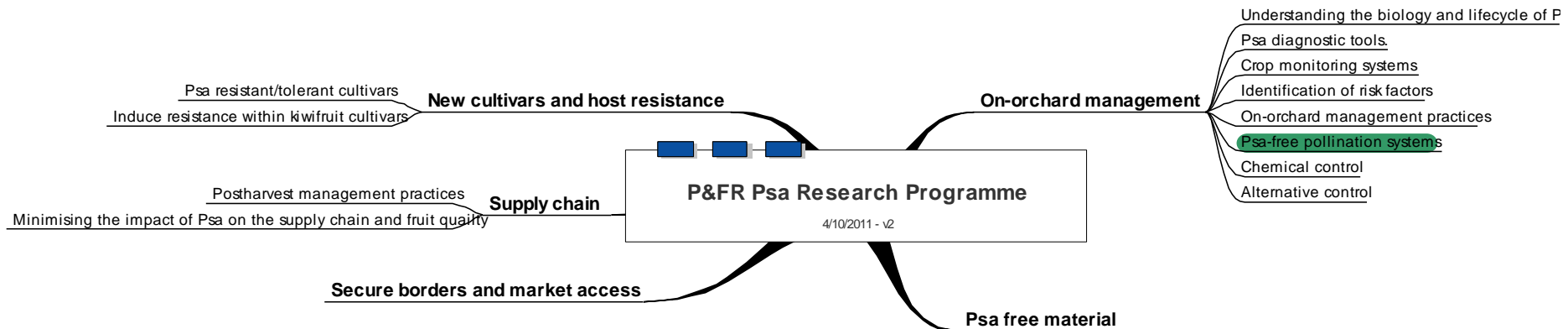
Mike Manning – Disease Progression



Managing Psa



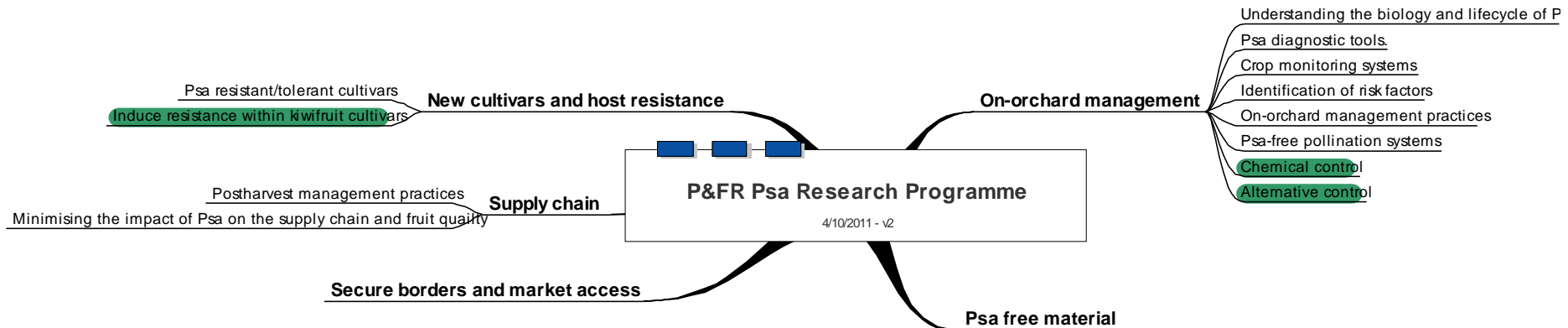
David Pattemore – Bees and Pollination



Managing Psa



Joel Vanneste – Product testing



New cultivars



New cultivars and host resistance

On-orchard management

Supply chain

P&FR Psa Research Programme

4/10/2011 - v2

Secure borders and market access

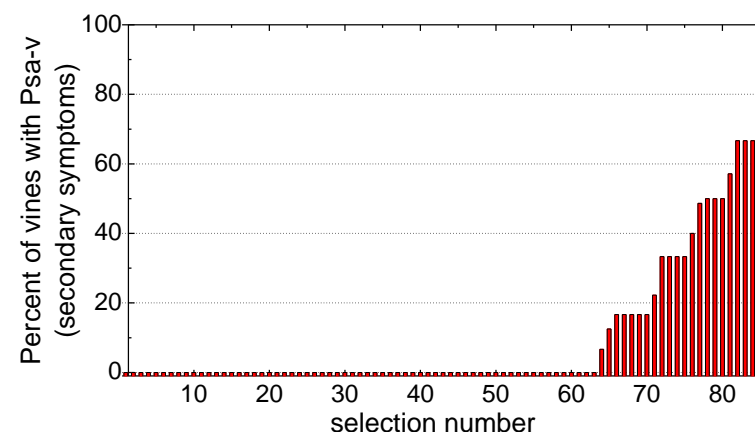
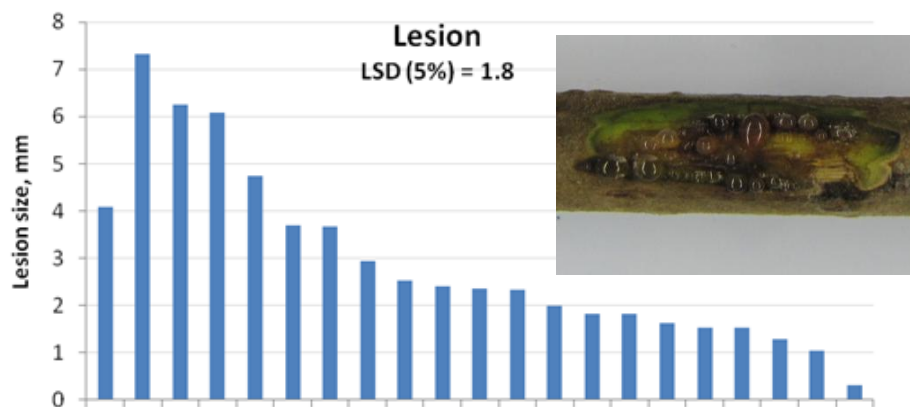
Psa free material

Reactive opportunities

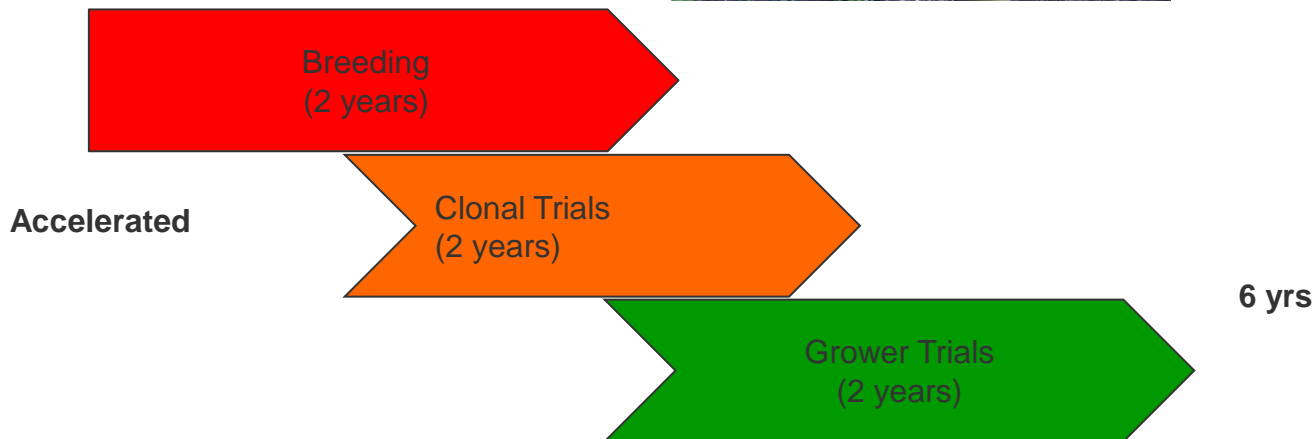


Options for resistant or tolerant cultivars ASAP:

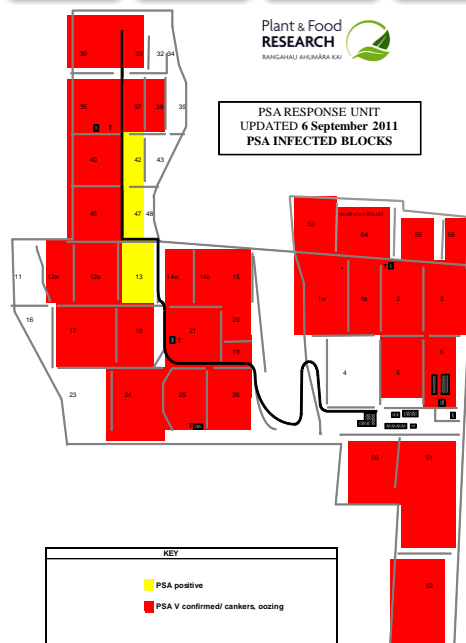
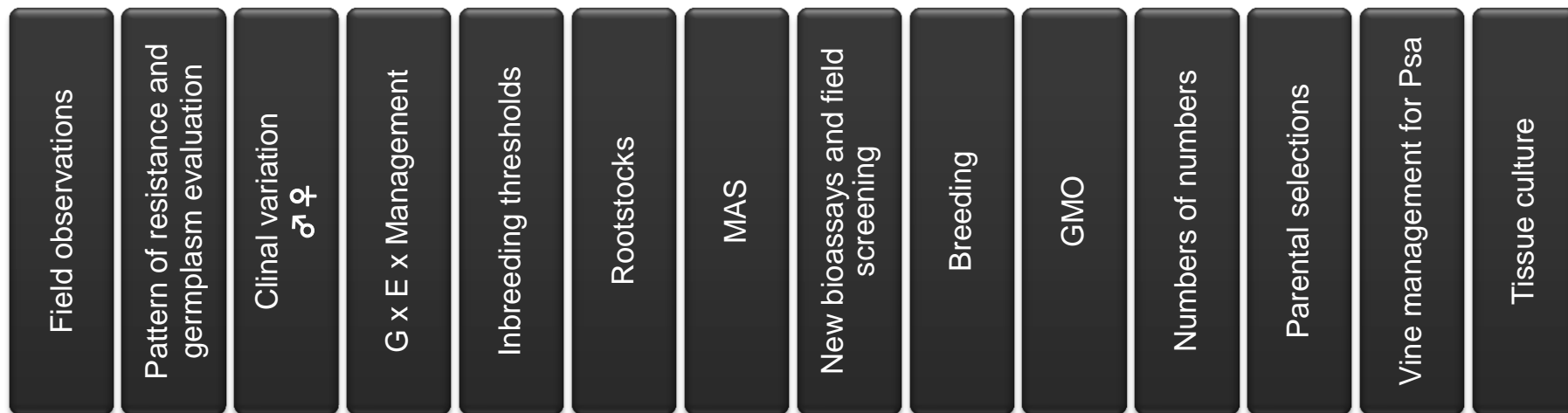
- 3 cultivars commercially released (0-2 years)
- 8 selections in pre-comm. trials (1-2 years)
- 98 selections in clonal trials (2-4 years)
- 80,000 plants in seedling blocks (4-6 years)
- Other options (2+ years)



Proactive Opportunities



Proactive opportunities



	34-04-14d		kk3-4-16a		52-06-19e		sommerville		
	0	4	0	4	0	4	0	4	
52-18-20c	46	1	48	0	45	0	46	8	0.05
52-15-05a	42	7	52	0	38	1	36	12	0.11
52-07-25f	51	3	45	3	39	9	35	20	0.17
21-13-06a	47	7	48	8	37	3	41	13	0.15
21-12-04a	48	1			18	1	29	19	0.18
	234	19	191	11	177	14	187	72	
	0.08		0.05		0.07		0.28		

Proactive opportunities



Field observations

Pattern of resistance and
germplasm evaluation

Clinal variation
♂ ♀

G x E x Management

Inbreeding thresholds

Rootstocks

MAS

New bioassays and field
screening

Breeding

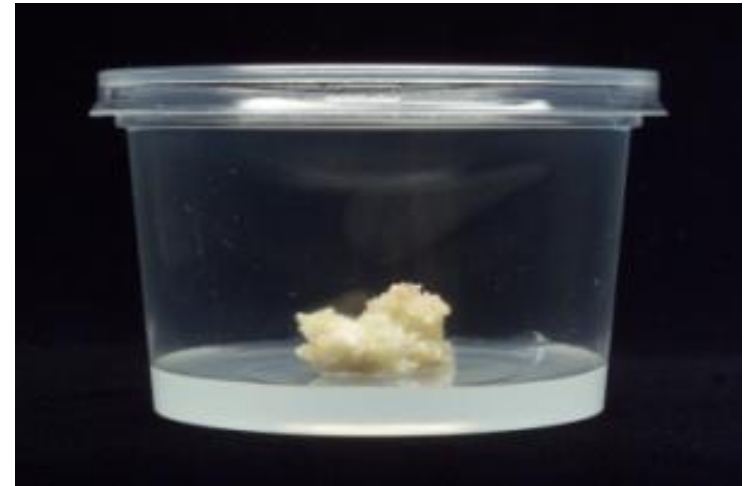
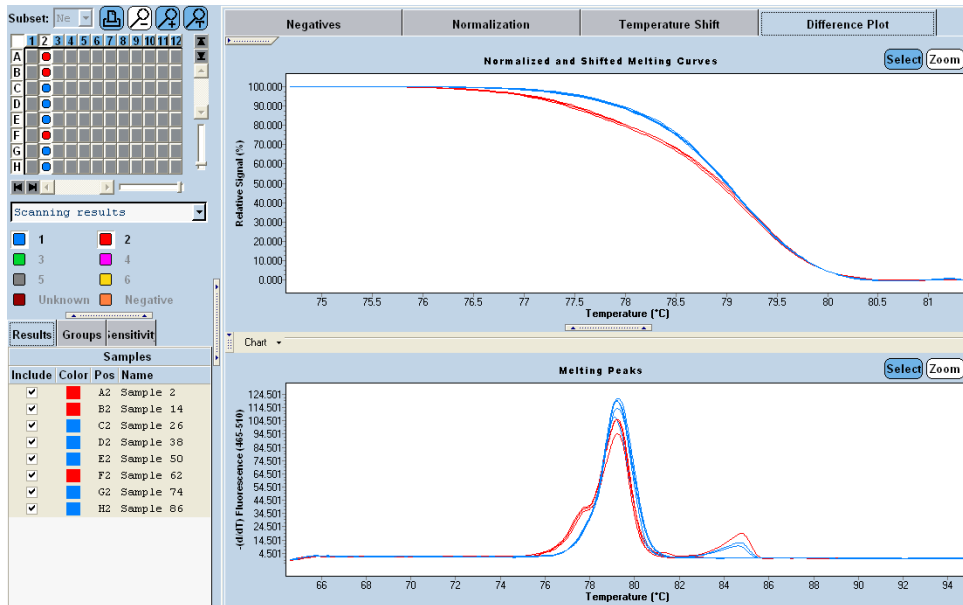
GMO

Numbers of numbers

Parental selections

Vine management for Psa

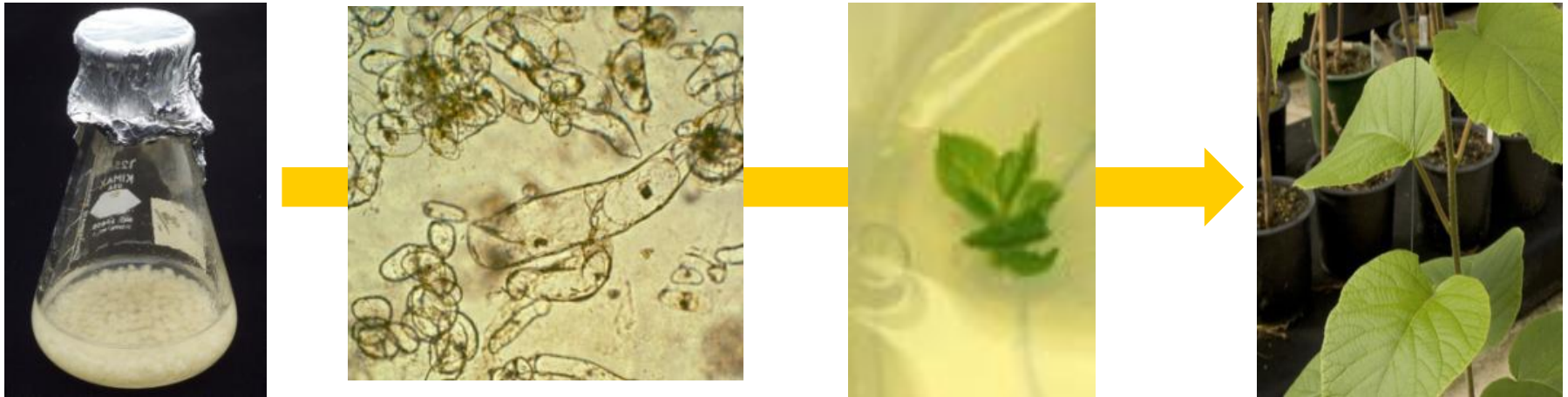
Tissue culture



Other opportunities

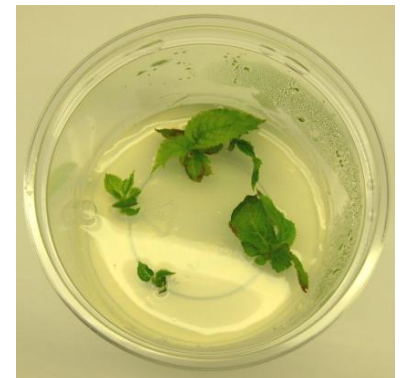


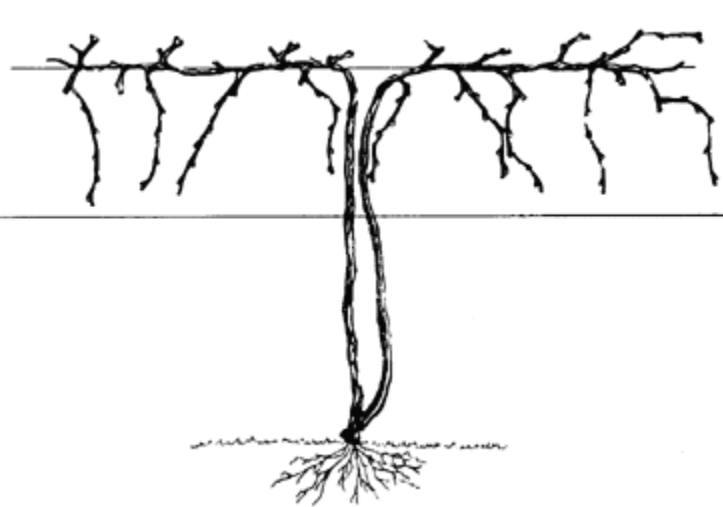
Somatic variation and mutation breeding



GMO

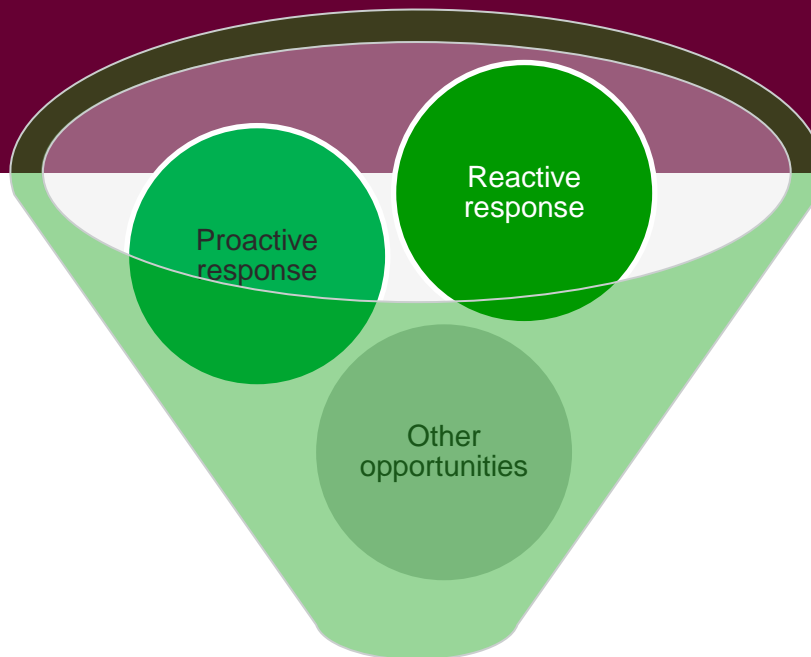
- Actinidia gene databases searched for resistance gene homologues
- Transformed into kiwifruit in a contained laboratory
- Transformed plants are producing callus and shoots





1	2	3	4	5	6	7	8	9
	G14		X		G14		G3	
	Hay		G9		.		Hay	
	.		X		G3		X	
	G9		G14		X		X	
	X		G3		Hay		G9	
	X		Hay		X		G14	
	G3		.		G9		.	
	G9		.		X		.	
	.		G3		Hay		X	
	G3		G9		G3		Hay	
	X		X		G14		X	
	G14		Hay		G9		G9	
	X		X		X		G3	
	Hay		G14		.		G14	
	G3		Hay		.		G3	
	.		X		G9		.	
	Hay		G9		X		X	
	G9		G3		G3		G14	
	X		G14		X		.	
	X		X		Hay		G9	
	G14		.		G14		Hay	

No males



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