

Virus diseases of brassicas +

John Walsh



Viruses infecting brassicas

- *Turnip mosaic virus* (TuMV)
- *Cauliflower mosaic virus*
(CaMV)
- *Beet western yellows virus*
(BWYV)

Project recently ended

1. Plant - virus co-evolution in wild brassicas



1. The susceptibility of cabbage to *Turnip mosaic virus* and *Beet western yellows virus*

Tina Payne

Josie Brough

Linda Brown and

Judith Bambridge



2. Resistance to TuMV in brassicas

Judith Bambridge
Graham Teakle

3. Exploiting *eIF4E*-based and associated broad-spectrum recessive resistance to potyviruses in dicots and monocots

Guy Barker
Carol Jenner

with RRes on monocots



Sources of resistance to TuMV in *Brassica*

Plant line	Virus isolate (pathotype)			
	UK 1 (1)	CZE 1 (3)	CHN 5 (3)	CDN 1 (4)
RLR22	R	R	R	R

retr01 - eIF(iso)4E

ConTR01 - eIF4E

Objectives

- Study natural allelic variation in *eIF4E* in *Brassica rapa* and possible role of *eIF(iso)4E* in broad-spectrum resistance
- Produce broadly applicable molecular markers for superior *eIF4E* alleles and the additional gene involved in the broad-spectrum resistance in *B. rapa*
- Molecular modelling simulation of *eIF4E* variants

1. Identifying means of killing clubroot (*Plasmodiophora brassicae*) and *Olpidium brassicae* spores in trays to avoid infection of transplants.

Judith Bambridge

Jenny Kevitt-Jack



2. *Brassica* - virus interactions: *Turnip yellows virus* in oilseed rape.

Carol Jenner

Elvis Asare-Bediako

Mark Stevens, Brooms Barn



Collaborators

Derek Lydiate's group in Saskatoon

- Plant resistance gene mapping

Kazusato Ohshima's group in Saga

- TuMV evolution

Kostya Kanyuka and Bernhard Hofinger

RRes - recessive resistance to potyviruses

Univ Brum, CEH Oxford etc.

Thank you for your attention