

Breeding crops with built-in pest resistance

The co-evolutionary battle between raspberries and virus-transmitting aphids

Breeding pest resistant raspberries

SCRI scientists have successfully bred several varieties of aphid-resistant raspberries over the last 30 years (e.g. Glen Prosen, Glen Moy, Glen Ample, Glen Rosa).

Virus vectoring problems

Unfortunately, pests like raspberry aphid (a vector of 4 plant viruses causing serious diseases in the crop) have adapted to the genetic pest resistance introduced by plant breeders.

Co-evolution and IPM

The timescales in this 'co-evolutionary battle' are tipped in favour of the pest: It takes breeders more than 10 years to breed a new type of aphid-resistant raspberry. However, raspberry aphid can now overcome single resistance genes in less than 10 years.

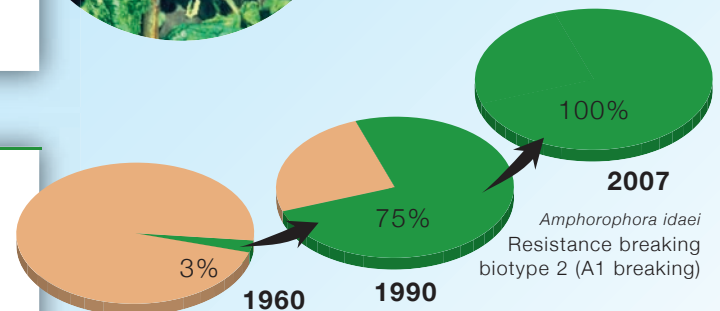
Marker assisted breeding (MAS)

This means we have to change the way we breed for resistance to aphids (using new combinations of resistance genes assisted by MAS) AND we have to use Integrated Pest Management to reduce selection pressure for adaptation by the pest population.

Future IPM strategies

SCRI scientists work together to devise future crop protection strategies which will be more durable and rely on less pesticides (which are now being banned in UK and Europe).

Defra Hortlink project 2005-2010



Scientific contacts:

Nick Birch, Stuart Gordon, Carolyn Mitchell, Rex Brennan

SCRI, Invergowrie, Dundee DD2 5DA www.scri.ac.uk

Funded under Work Package 1.3 (RERAD)

