

www.pesticides.gov.uk/committees/resistance

INSECTICIDE RESISTANCE



ACTION GROUP - UK

Current Steering Group Members

Steve Foster (Rothamsted Research: Chair)

Sacha White (ADAS: Secretary)

Nigel Adam (Bayer CropScience)

Chris Bean (Zantra Ltd)

Davis Buss (East Malling Research)

Rosemary Collier (Warwick Crop Centre)

Larissa Collins (Fera)

Sue Cowgill (AHDB Potatoes)

Ian Denholm (University of Hertfordshire)

Brian Fenton (Scotish Rural College)

Paul Fogg (Adama Ltd)

Dilwyn Harris (Dow AgroSciences)

Stuart Hill (Frontier Agriculture Ltd)

Alan Horgan (Certis)

Lynne Matthews (BASF plc)

Sue Mattock (Chemicals Regulation Directorate)

Caroline Nicholls (AHDB Cereals and Oilseeds)

Bill Parker (AHDB Horticulture)

Jon Pickup (Science and Advice for Scottish Agriculture)

Tom Pope (Harper Adams University)

Vivian Powell (AHDB Horticulture)

Pete Saunders (Syngenta)

Adrian Sisson (DuPont)

Russell Slater (Syngenta)

Mark Stevens (British Beet Research Organisation)

Chris Wallwork (Agrii)

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News

Pyrethroid Resistance in Pea and Bean Weevil (*Sitona lineatus*) in the UK

Urgent work to understand the nature and extent of insecticide resistance in an increasingly damaging pest of peas and beans has been undertaken in response to reports of control failures with pyrethroid sprays. Dr Steve Foster at Rothamsted Research has tested samples collected recently from Hertfordshire, Lincolnshire, Northamptonshire, Nottinghamshire and Warwickshire. He has found they contain adult weevils that are resistant to a representative pyrethroid when it is applied at an equivalent dose to that used in the field. The next step is to establish the mechanism conferring this resistance which is likely to extend to other pyrethroids. In the meantime, growers should be aware that treatment with these compounds against this pest may not be effective.

IRAG-UK was formed in 1997 as an informal group of representatives of Crop Protection Association (CPA) member companies and independent organisations involved in insecticide resistance research.

IRAG-UK is independent but maintains strong links with IRAC which has representation only from the agrochemical industry. IRAG-UK has similar aims and objectives to IRAC, but considers that there is an advantage in having a platform for both independent and commercial interests.

Aims and Objectives

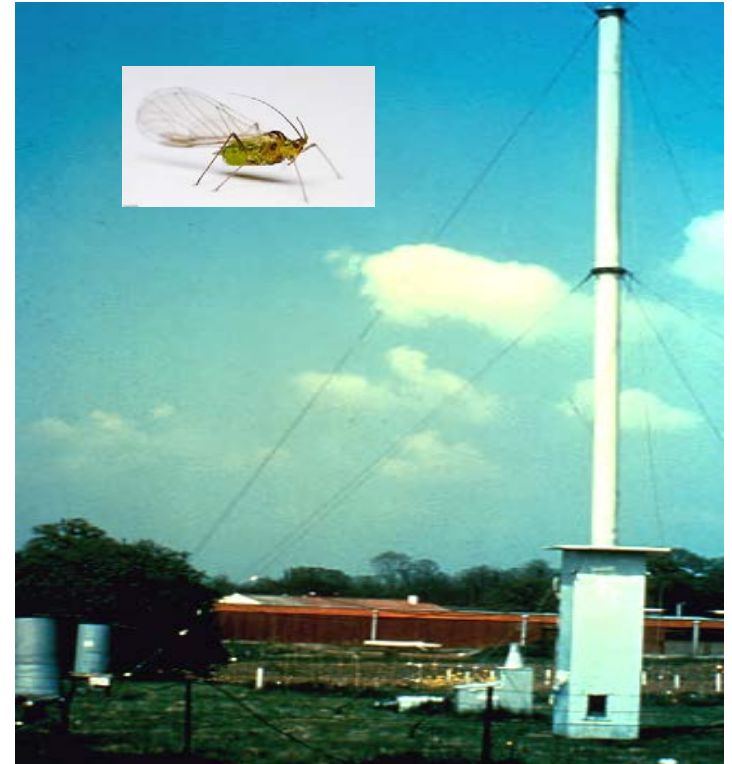
To provide information on resistance avoidance and management strategies for use by UK farmers and growers, advisors and regulatory authorities by:-

- Establishing a forum for the exchange and interpretation of information on insecticide resistance
- Producing guidelines and agreed statements to the media
- Identifying knowledge gaps and suggesting research needs to appropriate funding agencies
- Establishing links to exchange information and ideas with similar groups in other countries and with The Insecticide Resistance Action Committee (IRAC).



Peach-potato aphid
Myzus persicae

UK suction trap sites

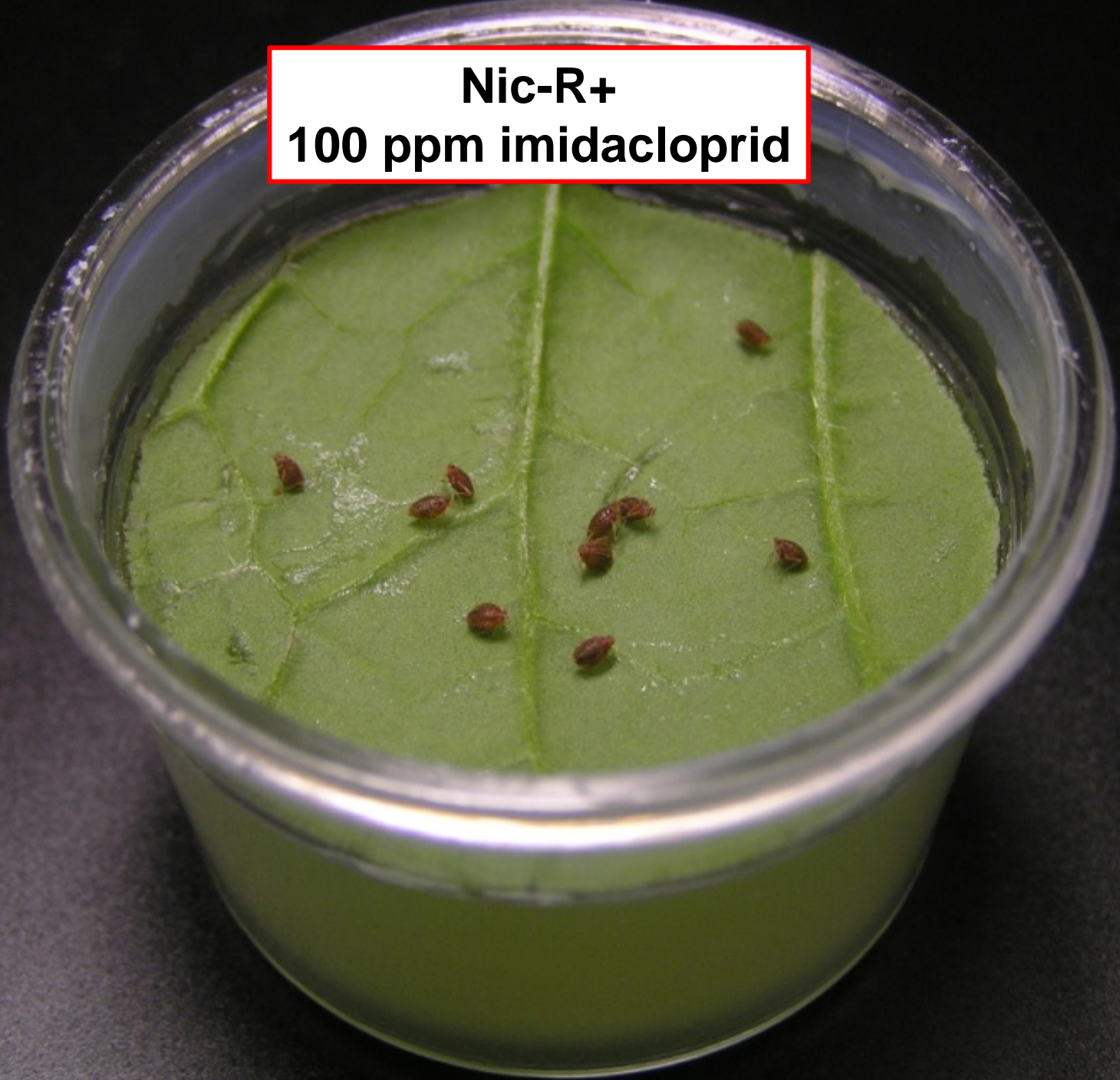


English *M. persicae* genotypes in suction traps (MACE/super-kdr_{ne})

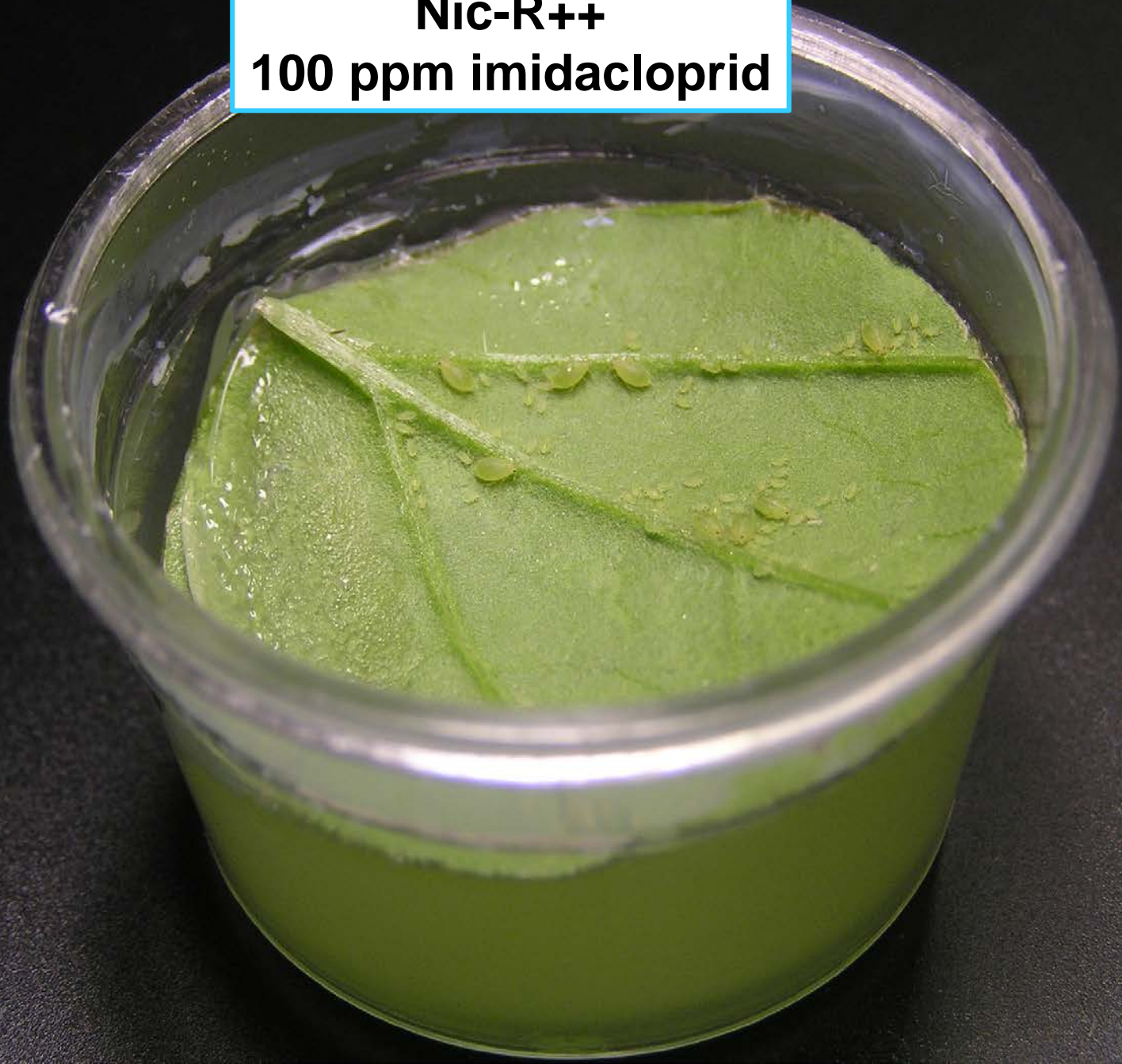
	2013 (415)	2014 (554)	2015 (369) to date
■ Sus/Sus	3.4%	5.4 %	10.3 %
■ MACE/Sus	2.6%	0.5 %	
■ Sus/super-kdr	0.3%	1.1 %	0.8 %
■ MACE/super-kdr	93.7%	92.8 %	88.1 %
■ Sus/super-hom		0.2 %	0.8 %

Resistance to neonicotinoids

Nic-R+
100 ppm imidacloprid



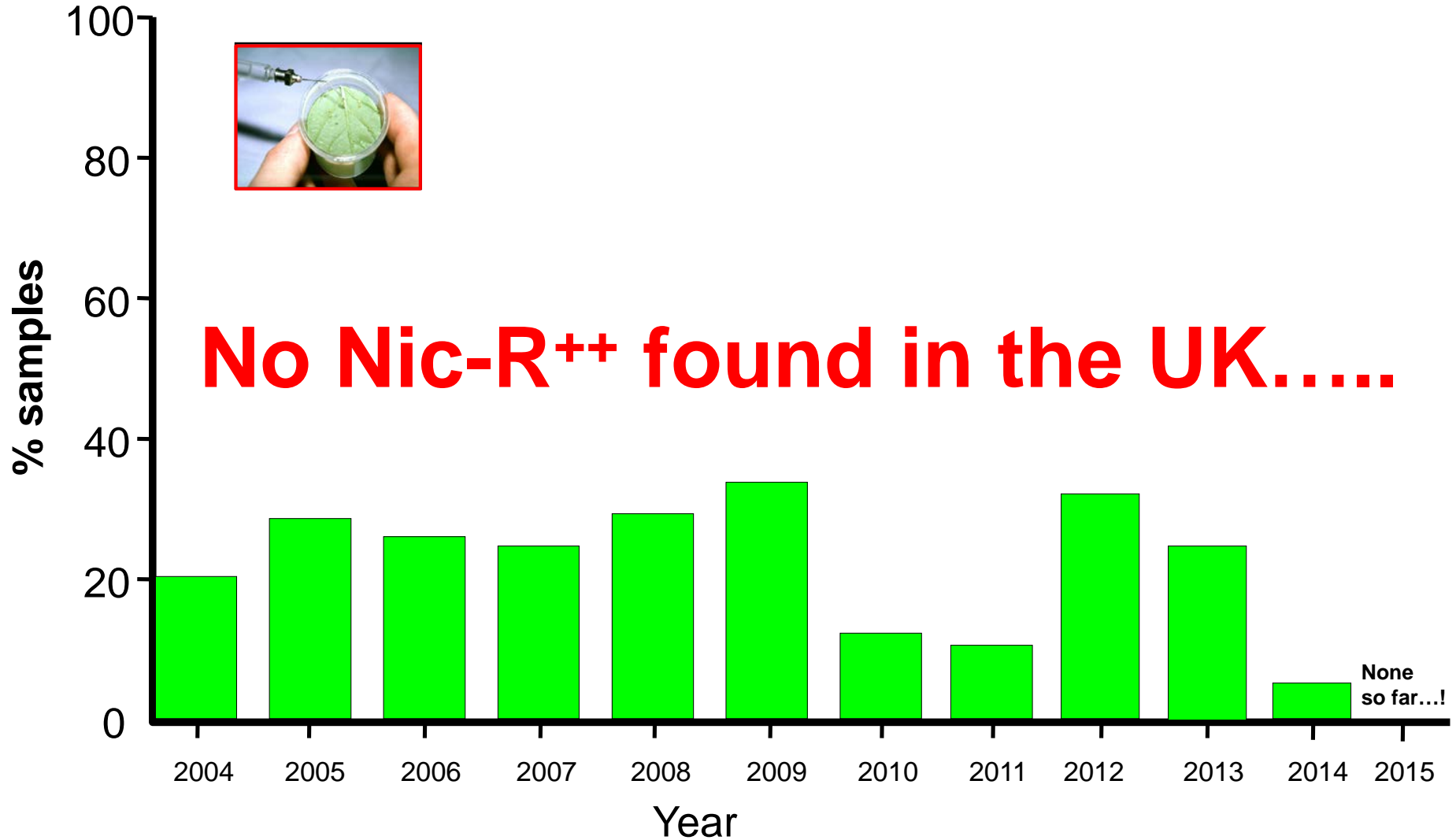
Nic-R++
100 ppm imidacloprid



% of UK *Myzus persicae* field samples containing aphids with low (Nic-R) neonicotinoid resistance



No Nic-R⁺⁺ found in the UK.....



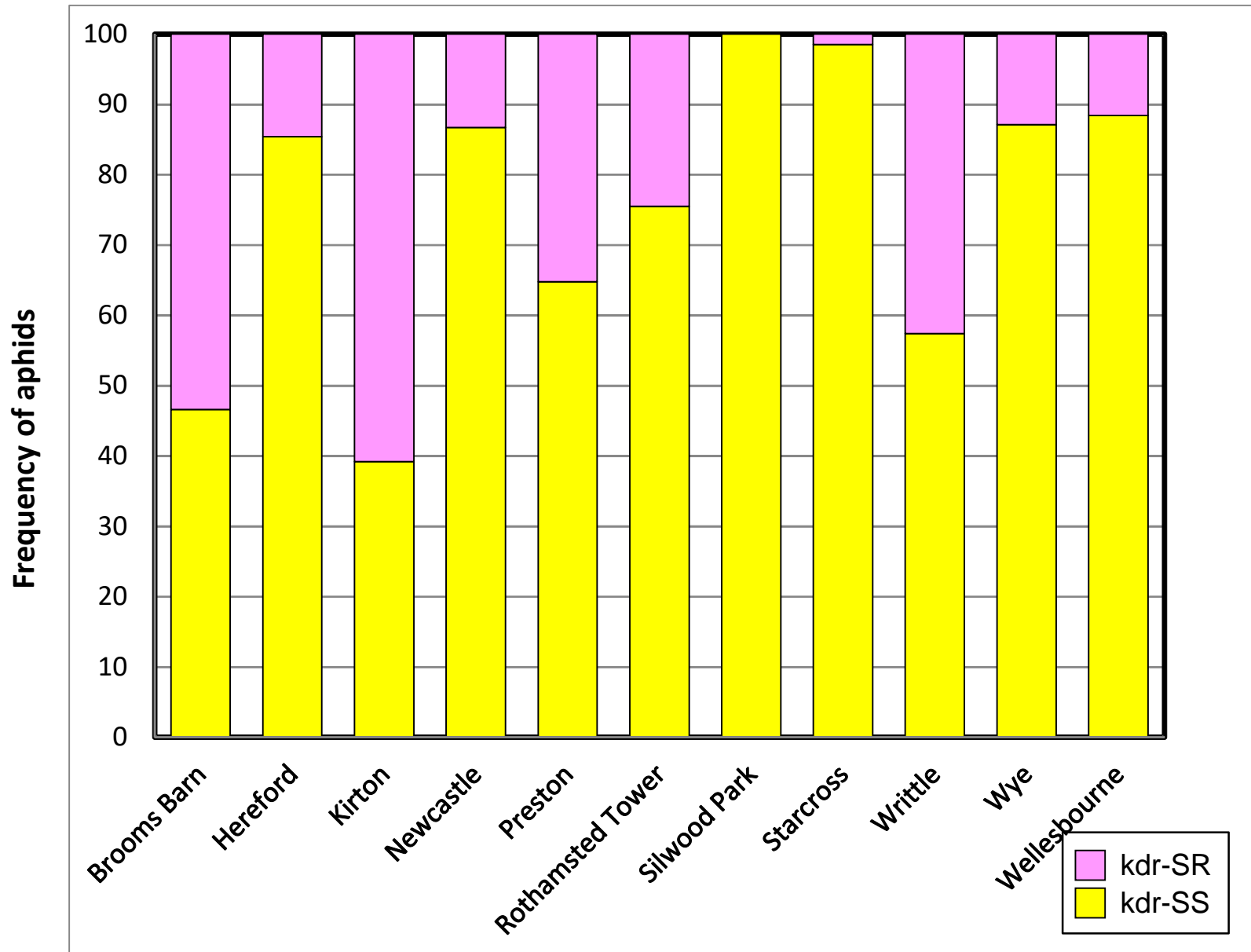


Grain aphid

Sitobion avenae

**Frequency of kdr-SS and -SR
Grain aphids in UK suction
traps**

Frequency of *kdr*-SS and -SR *Sitobion avenae* in English suction traps (2014)



Resistance in Beetles and Weevils

Cabbage stem flea beetle (*Psylliodes chrysocephala*) Adult damage



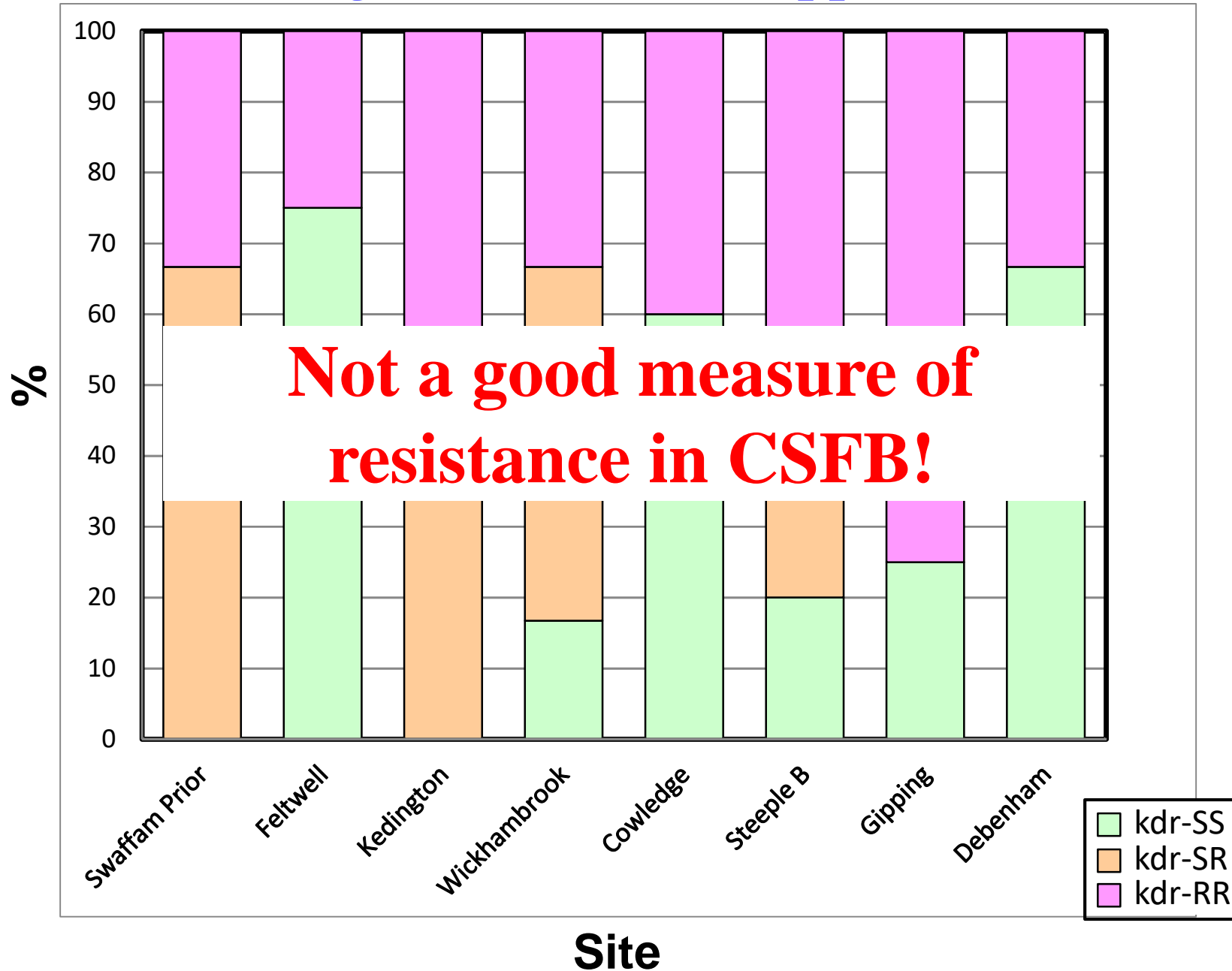
Neonicotinoid ban hit UK farmers hard

Bugs devour rapeseed crop in Britain as EU ban on pesticide to save bees comes into force



Leaves on a young shoot of rapeseed oil plant eaten by bugs. Photograph: Louise Gray

Percentage kdr in water-trapped CSFB





Pyrethroid resistance

Pea and Bean Weevil

Sitona lineatus