5.19 MARK STEVENS
BBRO, NRP Innovation Centre, Norwich Research Park, UK Colney, Norwich, NR4 7GJ

# A NOVEL PRE-BREEDING STRATEGY TO REDUCE DEPENDENCE ON INSECTICIDES FOR VIRUS YELLOWS CONTROL IN SUGAR BEET

## ABSTRACT

Virus yellows remain a key problem for the UK because the maritime climate favours the survival of the aphid vector. The UK beet industry invests up to £7M annually on insecticides for aphid control, without which virus yellows could cause losses of up to 50% of the national crop each year.

Recent EU restrictions on neonicotinoid use, as well as the development of insecticide resistance in aphids elsewhere in Europe, threatens to increase the incidence of virus yellows in UK-grown sugar beet. Consequently, development of sugar beet varieties which are resistant or tolerant to virus yellow is a critical component of future control strategies.

The project team (BBRO, ADAS, SES Vanderhave and Syngenta) has identified several wild beet species that show resistance or tolerance to the effects of virus yellows. The project aims to develop these heritable resistance and tolerance traits further, by crossing such lines with modern commercial breeding lines. These new varieties will be tested rigorously for virus yellows resistance or tolerance, plant vigour and sugar yield. This five year pre-breeding project will accelerate production of new sugar beet varieties that provide host protection against virus yellows.