



TACKLING VIRUS YELLOWS DISEASE IN SUGAR BEET

In the UK, sugar beet is grown as a break crop grown and processed into sugar. One of the biggest challenges faced by sugar beet growers is Virus Yellows disease.

Historically, Virus Yellows disease has been managed by neonicotinoid seed treatments which control the aphid pests that spread the disease. Withdrawal of the majority of these pesticides has resulted in significant reductions in sugar beet yield because of an increase in Virus Yellows disease.

In 2020, Virus Yellows disease reduced the UK's sugar beet yield by 25%, costing industry

£65m



Virus Yellows disease is a complex of three viruses transmitted by aphids. It reduces the photosynthetic capacity of sugar beet leaves, and this reduces the sugar content and yield.

DEVELOPING A PRECISION BREEDING PLATFORM FOR SUGAR BEET

There is an urgent need to find new solutions to the challenges faced by UK farmers. Genome editing should allow us to improve resistance to Virus Yellows disease and improve other traits of benefit to UK farmers and sugar processors.

A Norwich Research Park collaboration between the John Innes Centre, British Sugar, the British Beet Research Organisation and the biotechnology company Tropic is developing an innovative genome editing platform to protect the British sugar beet crop against potentially catastrophic losses to Virus Yellows disease.



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