



## PRESS RELEASE

7 September 2023

### UNLOCKING RESILIENCE: SESVANDERHAVE AND IFZ STUDY IDENTIFIES VIRUS YELLOWS (BChV) RESISTANCE GENE

Since the discontinuation of neonicotinoid seed treatment, the European sugar beet industry has faced significant challenges. Aphid-transmitted yellowing viruses have emerged as a major threat, causing substantial yield losses up to 50% and endangering the economic viability of sugar beet cultivation. As naturally occurring resistance traits are absent, efficient control of these viruses remains a pressing concern.

A promising breakthrough has been achieved through a collaborative effort between IfZ (Institute of Sugar Beet Research, Germany) and SESVanderHave, a leading sugar beet breeding company. Pioneering research has demonstrated that susceptibility factors for yellowing viruses in sugar beet can be effectively switched off to generate virus resistance. The work provides the basis for specifically identifying natural variation in the sugar beet gene pool and making it usable for cultivation in a timely manner.

Both SESVanderHave and IfZ hold no patent on the identified gene and are committed to share their findings with the entire breeding and scientific community. The work has been funded by the German Ministry of Agriculture (BMEL).

“This discovery offers great potential for sugar beet breeding programs across the globe”, says Hendrik Tschoep, Director Breeding at SESVanderHave. As innovative sugar beet breeder, SESVanderHave, has invested and continues to invest significantly in researching this important subject and remains committed to further developments through continued investment.

#### What is Virus Yellows?

Virus Yellows disease is a complex of three viruses; Beet Mild Yellowing Virus (BMV), Beet Chlorosis Virus (BChV) and Beet Yellows Virus (BYV). These viruses are transmitted when aphids carrying the viruses feed on sugar beet. The green peach aphid, *Myzus Persicae*, is the main vector. Infection of sugar beet plants with the yellowing viruses causes chlorosis of leaves, a condition where the leaves turn yellow due to disruptions in essential metabolic processes and the transport of assimilates. The presence of Virus Yellows alters the metabolic activities within the plants, causing increased levels of amino acids, nitrogen, sodium, and potassium in the roots. This, in turn, has a negative impact on the sugar extractability during factory processing. Moreover, the yellowed leaves become more vulnerable to secondary fungal attacks, which can further damage the leaves and aggravates yield loss.

When a sugar beet crop is infected with Virus Yellows, the grower can experience substantial yield losses, up to 50%, or even more when the crop is also affected by other diseases like cercospora leaf spot.

## **ABOUT SESVANDERHAVE**

SESVanderHave, an international market player in the production of sugar beet seed, is specialized in every aspect of the research, breeding, biotechnology, production, processing and marketing of sugar beet seed. Worldwide, SESVanderHave sells sugar beet varieties resulting from its research and breeding programs with its proprietary germplasm. Each variety represents a customized solution to the needs of a specific sugar beet market. SESVanderHave pursues a proactive policy of investments in biotechnology, modern breeding technologies and improved seed technologies to improve the performance of the sugar beet crop. Wherever sugar beets are grown, SESVanderHave is present.

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