

Virus yellows complex

Virus yellows remains one of the main disease threats to UK sugar production because the maritime climate favours the overwintering survival of the host plants and the aphid species (e.g. *Myzus persicae*) that transmit the viruses to the crop.

Beet yellows virus (BYV). Initial symptoms can include vein clearing followed by vein chlorosis on the undersurface of leaves. With time, leaves turn yellow and brownish / reddish spots may appear, often giving leaves a bronzed appearance. Leaves become thickened and brittle, and senesce prematurely. Hosts include many *Beta* species as well as weeds such as fat hen. Early infection can decrease sugar yield by up to 47%.



Beet yellows virus

Beet mild yellowing virus (BMYV). Initial symptoms include diffuse yellow patches on fully-expanded leaves, which eventually expand and merge. The leaves develop a golden yellow coloration and become thickened and brittle. The host range of BMYV includes sugar, fodder and red beet as well as spinach and a number of common weed species such as shepherd's purse, groundsel, and chickweed. Early infection (mid-May) decreases sugar yield by 28%. Infections from mid-July onwards have little effect on yield.



Beet mild yellowing virus (left) and **Beet chlorosis virus** (right)

Beet chlorosis virus (BChV) is closely related to BMYV but only infects beet species. It was first identified in the UK in the early 1990's. It is gaining in importance across the UK, and was especially prevalent in the north in 2004. Symptoms on infected plants are paler than BMYV, and BChV is less damaging to yield early in the season, decreasing sugar yield by 20%. However, it has a greater impact on yield later in the season when compared to BMYV.



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