# BYDV TOLERANCE

Trial update April 2021

SEEDING
THE FUTURE
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## BYDV in a nutshell

**2019** was the first season where barley was drilled without seed treatments to control BYDV, but for many the severe wet weather prevented barley drillings all together, masking the overall impacts of the loss of seed treatments for this important yield robbing disease.

**2020** drilling has been a different story for many; fields were drilled but for many the weather may have stretched timings for aphicide applications in the autumn. Hence this year, many growers are reporting BYDV in their barley crops.

**This product update takes a closer look at the BYDV trials KWS UK are running and reveals the benefits of genetic tolerance this season, when aphid pressure has been high and spray timings often compromised.**

## Tolerance vs resistance - what can plant breeding offer?

Genetic tolerance or resistance to BYDV will offer growers a risk reduction tool for aphid prone areas, opportunities for growers to continue traditional sowing times and will be a key part of an effective IPM strategy. Currently, there are no commercialised barley's in the UK market with full resistance.

| Tolerance |
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| Infected plants show little to no symptoms |
| No yield loss in crop with low-mild infection. Slight yield loss in a cros with high levels of infection (~5%; internal data) |
| Virus is still present in the crop |
| The best-known tolerant gene in Barley is called "ryd2" |

| Resistance |
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| A resistant crop can't be infected, so there is no yield loss |
| Resistance can be against the aphid (vector) or the virus |

Amistar and RL candidate KWS Feeris are BYDV tolerant varieties available from KWS. Both contain the YD2 gene offering season-long protection even under high pressure situations. In both products aphids are not killed; and this genetic insurance will in most situations offer opportunities to reduce insecticide applications.

## What the 2021 KWS BYDV trial at shows us so far

A replicated trial was drilled in the autumn 2020 to compare the performance of a susceptible 2-row, KWS Orwell, a 6-row conventional susceptible variety, Funky and two tolerant lines – Amistar from KWS, a conventional 6-row yielding similarly to KWS Tower and the new RL candidate KW Feeris. The later is also a 6-riow conventional type with better yields, akin to Funky, better mildew resistance and a good grain package.

The trial was drilled 13th September 2020 at 250 seeds/m2 for 2-row and 250 seeds/m2 for conventional 6-row lines. The trial was then divided so that some plots relied on natural infection and others were inoculated with BYDV-infected aphids to achieve 20% and 50% infection to represent the pressure felt in some parts of the country this season. *We will report the data from this part of the trial at a later date.*

In the part of the trial that relied upon natural infection one block of the trial received no pyrethroid treatment; another part did but the first pyrethroid spray was delayed and was not applied until the 13th October 2020. This delay resulted in very poor control and the differences between susceptible and tolerant varieties is clear as the pictures show.

Although the consequences of delaying the first pyrethroid may not have been as severe as at Fowlmere, poor control is evident in some commercial crops this year.





27/04/21, trial areas where the first pyrethroid was delayed