

MONITORING DISEASE RACE CHANGES

The UK Cereal Pathogen Virulence Survey (UKCPVS) was set up by NIAB over 50 years ago to alert growers, breeders and agronomists to any important changes in the populations of important cereal pathogens.



Initially, the Survey monitored pathogens that cause oat crown rust, oat leaf spot, wheat, barley and oat powdery mildew, barley leaf scald (*Rhynchosporium*) and wheat and barley yellow rust.

Today, the UKCPVS monitors the pathogens causing wheat yellow rust, wheat brown rust and wheat and barley powdery mildew.

Much has changed since the Survey began in 1967, most notably with the recent incursion of the Warrior population of *Puccinia striiformis* f.sp. *tritici*, the wheat yellow rust pathogen.

Current situation

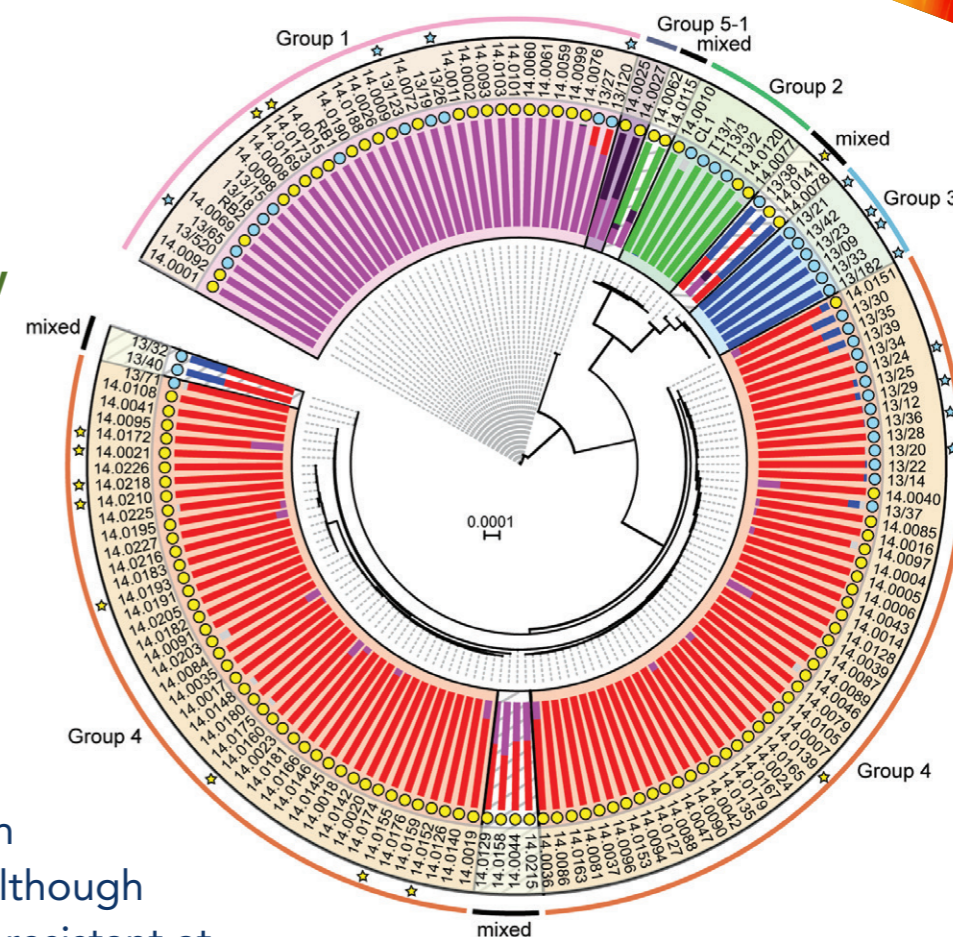
In 2019 the UKCPVS received more than 300 samples during the main rust and mildew season, including 243 samples of wheat yellow rust.

Overall, the virulence frequencies for the main yellow rust resistance genes continued to follow the patterns of previous years, with the exception of virulence detected for Yr8 which saw an increase in a number of new pathotypes.

In general, varieties should perform as expected, according to their AHDB Recommended List rating, but the UKCPVS will be monitoring the yellow rust situation closely throughout the 2020 season.

Genetic sequencing of isolates show how they are related to each other

As always, changes can and do happen within a growing season so it is important to monitor crops carefully. Adult plant resistance should be apparent when the flag leaves are out, although many varieties which are resistant at the adult stage can show high levels of disease at the seedling stage.



WE NEED YOUR HELP!

Samples from any winter wheat variety can be sent via the FREEPOST UKCPVS service. It is essential that we obtain as diverse a set of samples as possible, from across the country. Rare and unusual races are often found in only sample from one location. Further details on sampling can be obtained from Lucy James (lucy.james@niab.com/01223 342200).

Funded by AHDB and APHA, and managed by NIAB in Cambridge, the UK Cereal Pathogen Virulence Survey (UKCPVS) has been monitoring cereal rusts and mildews in the UK for more than 50 years. It provides an early warning system to growers and plant breeders of new races of disease that could overcome current variety resistance, and underpins the AHDB Recommended List disease resistance ratings.