

# Infection strategies of old and new Yellow rust (*Puccinia striiformis*) races

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In the last decade, an invasion of new races of the fungus *Puccinia striiformis* was observed in Europe. This pathogen causes the severe disease Yellow (stripe) rust mainly on wheat, but also on triticale plants. New dominant Yellow rust races like Warrior and Warrior(-) which are named according to the wheat varieties where they caused the first confirmed epidemic outbreaks have nowadays replaced the formerly diverse population of pathotypes in Germany.

Although there are reports about the selective advantage of the Warrior strains through temperature adaptation, it remains unclear how they could establish to such great extent. The best mechanism to control the Yellow rust disease is

to prevent severe infections by choosing wheat varieties with effective resistance genes. It is known that the new races are highly virulent, and can therefore infect a greater number of wheat varieties.

In order to classify epidemiological bases related to growing conditions and infection severity of new and old Yellow rust races, we conducted germination tests and experiments in growth chambers. We used susceptible as well as resistant wheat varieties and a number of temperature levels and leaf wetness durations. Moreover, we rated Yellow rust infection of different wheat varieties in the field under natural and artificial infection conditions, respectively.