

Insights into the *Nanovirus*-legume-aphid interactions

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Legumes are important crops with high nutritional value for both human and animal consumption. They are susceptible to many viral diseases. The last season showed a high incidence of viral diseases on leguminous crops in Germany and Austria. Analyses of symptomatic plant samples revealed that infections were resulting mainly from pea enation mosaic virus (PEMV) and pea necrotic yellow dwarf virus (PNYDV).

Nanoviruses such as PNYDV, are multi-component circular ssDNA viruses. They are transmitted by aphids in a circulative, persistent manner and infect

mainly legumes. Interestingly, this transmission requires a viral helper factor (HF).

In this study, we aim to investigate the interactions between *Nanoviruses*, their hosts and their aphid vectors. In particular we want to investigate the role of the HF during aphid transmission as well as studying the aphid feeding behaviour on infected and healthy plants. Currently we are characterising the genetic variation of legume viruses in Germany using next-generation sequencing technologies.