

## Effects of trichodorids and TRV on potato growth and yield

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Potato production is highly conditioned by some viruses, such as Tobacco rattle virus (TRV). In some cultivars TRV causes severe tuber symptoms, rendering them unmarketable. Some TRV strains are specifically transmitted by soil-inhabiting trichodorids. The virus, in association with its vector nematode species is worldwide spread, and causes economically important diseases in agriculture. Vector trichodorids are widespread throughout Portugal, however little or no information is available on TRV effects in the country. The aim of the present research is to determine the effect of soil-born TRV isolates on yield and some quality attributes of eight potato cultivars in potato growing areas in northern and central Portugal. The study was initiated with a field survey for the association of TRV-trichodorids in potato fields. Sampling was planned based on the results of an inquiry for TRV-like symptoms in potato tuber flesh. TRV isolates were recovered from viruliferous trichodorids in soil samples using virus transmission tests. TRV was molecularly confirmed in 5% of the sampled sites and the vector specimens identified. Potato field trials were carried out on the patches naturally infested with viruliferous trichodorids. Results of putative effects of the association on commercial yield attributes (total yield, tuber numbers within size grades, tuber yield within size grades, tuber appearance of TRV like symptoms and secondary growth) are presented. Potato production was severely affected due to quantitative and qualitative yield losses that could be attributed to TRV isolates. The history of the sites with long persistence of TRV-like symptom expression indicates that TRV and its vector find conditions for survival in these soils.

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