

First detection of *European mountain ash ringspot-associated virus* in *Sorbus aria* and *Sorbus intermedia*

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ABSTRACT

The *European mountain ash ringspot-associated virus* (EMARaV) is well known in North and Central Europe in rowan trees (*Sorbus aucuparia*) showing mottling and chlorotic ringspots of leaves (Büttner *et al.*, 2013). Our recent studies confirm the first detection of EMARaV in *Sorbus aria* (whitebeam) and *Sorbus intermedia* (Swedish whitebeam) in Sweden. Before then no other host plant than *Sorbus aucuparia* was described for EMARaV. Chlorotic ringspots were observed in *Sorbus aria* (whitebeam) and *Sorbus intermedia* (Swedish whitebeam) in Västerås, Sweden, while monitoring EMARaV infected *Sorbus* species. These two *Sorbus* species are of high value as ornamental trees in public gardens and robust trees suitable as urban green. Viral infections of these species have not been reported, so far. The close relationship of whitebeam with rowan suggests that the noticed ringspots are caused by EMARaV.

Total RNA from symptomatic leaves of the two affected trees was isolated according to the protocol by Mielke and Muehlbach (2007). Fragments of all four RNAs comprising the viral genome were amplified by RT-PCR and directly sequenced. Amplification of RNA1, RNA2 and RNA3 fragments was performed according to Mielke *et al.* (2008). The complete P4-coding region of RNA4 was amplified with P4-specific primers. All four RNAs were detected in *Sorbus aria* and *Sorbus intermedia* from Västerås confirming the infection with EMARaV. Nucleotide BLAST of 159 bp of the 3' untranslated region (3' UTR) of RNA3 showed highest identities (98 %) of the EMARaV variant from *Sorbus aria* to EMARaV variants from Sweden, Czech Republic, and Finland. The 3' UTR fragment from *Sorbus intermedia* with 99 % identity to other EMARaV variants from Sweden, Finland, and Germany supports the presence of EMARaV in new *Sorbus* species.

References

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