



The role of Schmidt 'Antonovka' in apple scab resistance breeding

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Résumé en anglais	'Antonovka' has long been recognised as a major source of scab (<i>Venturia inaequalis</i>) resistance useful for apple breeding worldwide. Both major gene resistances in the form of the Rvi10 and Rvi17 and quantitative resistance, collectively identified as VA, have been identified in different accessions of 'Antonovka'. Most of the 'Antonovka' scab resistance used in apple-breeding programmes around the world can be traced back to Schmidt 'Antonovka' and predominantly its B VIII progenies 33,25 (PI 172623), 34,6 (PI 172633), 33,8 (PI 172612) and 34,5 (PI 172632). Using genetic profile reconstruction, we have identified "common 'Antonovka' " as the progenitor of the B VIII family, which is consistent with it having been a commercial cultivar in Poland and the single source of scab resistance used by Dr. Martin Schmidt. The major 'Antonovka' scab resistance genes mapped to date are located either very close to Rvi6, or about 20–25 cM above it, but their identities need further elucidation. The presence of the 139 bp allele of the CH-Vf1 microsatellite marker known to be associated with Rvi17 (Va1) in most of the 'Antonovka' germplasm used in breeding suggests that it plays a central role in the resistance. The nature and the genetic relationships of the scab resistance in these accessions as well as a number of apple cultivars derived from 'Antonovka', such as, 'Freedom', 'Burgundy' and 'Angold', are discussed. The parentage of 'Reglindis' is unclear, but the cultivar commercialised as 'Reglindis' was confirmed to be an Rvi6 cultivar.

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