Analysis of the association with the T1145A SNP with mefenoxam resistance in *Phytophthora infestans* (Mont.) de Bary

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Phenylamide fungicides have been used for many years to control plant diseases caused by oomycetes, and insensitivity has been observed since early uses. The phenylamide fungicide mefenoxam inhibits the function of RNA polymerase I in *Phytophthora infestans*, and it has been suggested that the single nucleotide polymorphism (SNP) T1145A on the RPA190 gene has an association with mefenoxam resistance and results in a change in the amino acid sequence. To test this association and evaluate the role the SNP plays in mefenoxam resistance, 25 isolates of *P. infestans* with a wide range of known EC_{50} values were sequenced around the T1145A SNP. No strong association between the T1145A SNP and EC_{50} was observed, suggesting other factors contribute to the development of mefenoxam resistance. In addition to the T1145A SNP, eight other SNPs in the region were documented. One SNP was observed to display an association with EC_{50} values, and may be potentially useful for phylogenetic analysis of mefenoxam resistance. Further investigation into the binding site of mefenoxam to RNA polymerase I is planned in order to understand the biophysical mechanism of resistance to mefenoxam.