

## Mefenoxam sensitivity of recently predominant clonal lineages of *Phytophthora infestans* in the United States of America

*Phytophthora infestans*, the causal agent of late blight disease, is one of the most devastating pathogens around the world today. It is extremely aggressive on potato, tomato and other members of the Solanaceae family. In the 1970's and 1980's *P. infestans* could be effectively controlled through the use of fungicides containing the active ingredient metalaxyl/mefenoxam. Unfortunately in the late 1980's populations of *P. infestans* displaying resistance to mefenoxam began to emerge. Due to the simple population structure of *P. infestans* in the United States, isolates have been grouped into clonal lineages based on genetic and phenotypic markers. Since the mid-1990s, populations of *P. infestans* on potato in the United States have been dominated by clonal lineage US8, which is resistant to mefenoxam. More recent clonal lineages, US22, US23 and US24, however, have been shown to be generally sensitive to mefenoxam when tested on mefenoxam-amended plates. This shift in the population of *P. infestans* suggests the possibility of utilizing fungicides containing metalaxyl/mefenoxam for the control of late blight. The purpose of this study is to compare the *in vitro* assay, using mefenoxam-amended plates, with an *in vivo* assay, where potato and tomato plants are sprayed with mefenoxam. Samples have been collected throughout the United States and isolates representing clonal lineages US8, US11, US23 and US24, are being tested against low and high concentrations of mefenoxam both in an *in vitro* and in an *in vivo* assay, to determine sensitivity levels of the different clonal lineages. Results are to be announced.



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Picture: My partner in crime and I  
(left) are getting ready to start  
inoculating for our main assay,  
8000 sporangia/mL and no guilt  
felt.