Title: Tomato domestication and genetic variation in virulence of Botrytis cinerea

Background / Introduction:

* Quantitative genetic basis of virulence in a generalist necrotroph
* Goal of control of common, economically costly pathogen
* Plant side: multigenic
  + Genetics in Arabidopsis – GWAS
  + Mutant analysis in Arabidopsis
* Pathogen side
* Domestication
  + Theory: drift/ selection against defense alleles in domestication & cultivation
  + Presumes: low resistance in \*all\* domesticated varieties
* Questions
  + Does domestication give us a strong hypothesis about susceptibility?
    - Does this differ depending on pathogen genotype?
  + Genetic basis of virulence in Botrytis

Methods

* Plant growth & accessions
* Pathogen propagation & isolates
* Detached leaf assay
  + Whole-plant translatable
  + Lesion size as virulence?
* Linear models
* Genome
  + Has this been published elsewhere yet by Suzi?
* bigRR
  + justify? JAC
* gene identification

Results

* variation in lesion size
  + domesticated lines more susceptible on average BUT overlap with wild
* genetic control of lesion size
  + due to plant, pathogen, and INTERACTION
* genes for lesion size
  + quantitative – necessitates study beyond single-pathogen level
  + do we have SNPs for previously-IDed pathogenesis genes not found in our GWAS list?
  + Which genes
  + Unique for each plant host? // shared?

Discussion:

* Patterns of domestication \*across host species\*
* Genetics of virulence conserved across host taxa/ varying?