1923 Race 4 Fusarium oxysporum Resistance Evaluations: Field Screenings

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In California, Fusarium wilt caused by the organism *Fusarium oxysporum* f. sp. *vasinfectum* (FOV), has been considered a serious disease in the San Joaquin Valley. In years prior to the 2000's, damage from FOV has been notable only with higher populations of specific FOV races (usually race 1) in combination with coarse-textured soils that support root knot nematode populations. Recent field investigations have found Fusarium symptoms across many soil textures. This FOV has been identified by genetic analyses as race 4. Field studies were initiated to screen for genetic differences in resistance to race 4 FOV in commercial varieties. Screening efforts have included *Gossypium hirsutum* and *Gossypium barbadense* as well as more exotic *Gossypium* species. Screening results can be summarized as: (1) most Pima varieties show more severe symptoms, with higher plant mortality than Acala/Uplands; (2) one highly-resistant commercial Pima and several USDA experimentals have been identified; (3) most Upland germplasm tested, while less impacted than most Pimas, was still infected by the race 4 FOV when tested at infested field sites.