Field Evaluation of Host Plant Resistance in Strawberry against Verticillium Wilt, Macrophomina Crown Rot and Fusarium Wilt

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In 2017 and 2018, 90 genotypes (30 cultivars and 60 elite breeding lines) were evaluated for susceptibility to Macrophomina crown rot and Verticillium wilt, while 15 cultivars were evaluated for susceptibility to Fusarium wilt. Genotypes originated from six different breeding programs: University of California Davis, Driscoll’s, Plant Sciences, Lassen Canyon, Planasa and University of Florida. Each genotype was evaluated under field conditions in a randomized complete block design with four replications (20 plants/rep) and disease susceptibility was measured by assessing plant mortality at regular intervals. Results showed a wide range of responses and were consistent between years. Average plant mortality for all genotypes to Macrophomina, Verticillium and Fusarium was 36.2%, 28.8% and 30.2% in 2017 and 46.1%, 15.9% and 29.0% in 2018, respectively. No single genotype showed high levels of resistance or susceptibility to all three diseases. Using drone-obtained aerial photography was as accurate as visual assessments from ground level.