

***Phytophthora infestans* transmitted to seedlings growing from tomato fruit rotted by late blight**

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The impetus for this investigation was an outbreak of late blight that appeared to have originated from volunteer tomatoes. This occurred during early spring 2011 in a greenhouse in Maine. There were no potatoes growing in or near the greenhouse to serve as a source of inoculum.

A study is underway using tomato fruit from plants grown outdoors that were naturally infected with *Phytophthora infestans* genotype US-23 during the 2011 outbreak on Long Island, NY. Symptomatic fruit were collected from 5 varieties in a garden on 27 Aug and 5 Sept. Late blight symptoms were first observed on 13 Aug on a few leaves there. Most fruit for the first experiment were collected on 27 Aug. They were kept in tubs for 11 days at ambient temperature for further disease development. On 7 Sept the fruit from both collection dates were put on potting mix in trays, then covered with more potting mix. Two duplicate sets of trays were set up. One was placed in a greenhouse where conditions would be favorable for seedling growth while the other went in a dark, unheated trailer. Trays were kept lightly moistened. Seeds of the cherry-type 'Sweet Treats' were the first to germinate. There were many seedlings of this variety at the cotyledon stage on 15 Sept in the greenhouse. On 20 Sept brown stem lesions were observed and confirmed to be caused by *P. infestans*. All six seedlings with symptoms were removed for testing. About half of the remaining healthy-appearing plants were removed and transplanted as small groups into 11 pots on 20 Sep. Symptoms have developed since on a few additional plants, which were then removed. Brown lesions appeared first on the lower stem. Lesions on the upper stem were associated with abnormal bending. Sporangia were observed where the pathogen had progressed into leaf tissue. Fewer seedlings have grown from fruit of the other varieties, which are SunGold (cherry), Juliet (large grape), Amish Paste (Roma) and Better Boy (beefsteak). For several fruit this is because the fruit epidermis has remained intact. Many volunteer seedlings grew in the garden after removal of the affected tomato plants and most dropped fruit. On 1 Oct symptoms were observed on the lower stem of 4 of these seedlings out of 120 examined. Many more had symptoms on 5 Oct (130 out of 223).

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