

ABSTRACT

Miller, J. S., Johnson, D. A., and Hamm, P. B. 1998. Aggressiveness of isolates of *Phytophthora infestans* from the Columbia Basin of Washington and Oregon. *Phytopathology* 88:190-197.

The aggressiveness of 22 isolates of *Phytophthora infestans* collected from naturally infected potato plants in the Columbia Basin of Washington and Oregon was determined on detached potato leaflets at 18°C in an incubator. Selected isolates were evaluated on whole plants in a greenhouse. Aggressiveness was measured by using the area under the lesion expansion curve (AULEC), incubation period, latent period, sporulation capacity, and lesion size on detached leaflets and the area under the disease progress curve and sporulation capacity on whole plants. The detached-leaflet assay was useful in that a large number of isolates were tested, several components of aggressiveness were studied, and signifi-

cant differences were found among isolates. Significant variation for components of aggressiveness was found within and among isolates classified according to genotype. Significant interactions among isolates and cultivars were found for some components of aggressiveness, so results were pooled according to cultivar. On average, US-8 and US-11 isolates had higher AULEC scores, indicating aggressiveness higher than that of US-7, US-6, and US-1 genotypes. One US-8 genotype isolate had a higher standardized sporulation capacity than isolates of the other genotypes. US-6 genotype isolates were the least aggressive group, as indicated by low AULEC, sporulation capacity, and lesion size values. The replacement of the US-1 genotype by the US-8 genotype in the Columbia Basin may be partially explained by the increased aggressiveness of US-8 isolates. Additionally, potato growers may need to shorten intervals between fungicide applications and begin applications earlier.