

Abstract: Potato tuber blight caused by *Phytophthora infestans* accounts for significant losses in storage. There is limited published quantitative data on predicting tuber blight. We validated a tuber blight prediction model developed in New York with cultivars Allegany, NY 101, and Katahdin using independent foliar and tuber blight incidence data from Michigan on the cultivar Snowden. In both New York and Michigan, disease was initiated by artificial inoculation with pathogen isolates (US 8 genotype, A2). Late blight severity ranged from 0-94% at New York, and 0-93% at Michigan field sites. Similarly, mean tuber blight incidence ranged widely, from 0.7-40% in New York and 0-15% in Michigan. The tuber blight prediction model was validated by fitting a regression equation to weather and foliar blight data from the field site in Michigan, and comparing predicted vs. observed tuber blight incidence at the same location. The model correctly predicted tuber blight incidence in 7 out of 9 years (2000 to 2009), with low CV (9%) and standard errors. Although inoculum availability is assumed in the model, additional improvements in prediction accuracy might be accomplished by incorporating *P. infestans* inoculum density and propagule survival.