

Pest or Pathogen Spread Model Case Study with Late Blight

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Late blight, a disease caused by the pathogen *Phytophthora infestans*, is a major concern for potato and tomato production around the world. The disease spreads via sporangia that germinate when weather conditions are suitable and can wipe out a field of the host in a matter of days. The Pest or Pathogen Spread model, “PoPS”, was developed as a species-agnostic model for forecasting disease or pests in various systems with an explicit spatio-temporal framework. It simulates reproduction, dispersal, and establishment of study organisms based on weather, host, and environmental conditions. It is flexible with scale and resolution in both the spatial and temporal domains. We used Late Blight data from a small field study in Western North Carolina as a case study of the disease with PoPS to calibrate the model and produce a forecast of the spread of the disease, which we validate with data collected during the study.