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Effects of global changes on plant virus epidemiology and ecology

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Since the industrial revolution, the Earth global ecosystem has shifted from the Holocene to the Anthropocene, in which human activities have become the main driver of climate and environmental change. Anthropogenic changes have led to dramatic climate alterations, losses of biodiversity, and interferences with the nitrogen and phosphorus cycles, and to significant stratospheric ozone depletion, ocean acidification, and modifications of freshwater and land-use. These human driven environmental changes have been shown to alter ecosystem functioning and services (e.g. species biomass production, diversity and composition). The simultaneous trends in emergence of infectious diseases have spurred many investigations into the effects of these changes on host-parasite interactions. We will review some evidence of the effects of global changes, especially in climate, biodiversity and biochemical cycles, on plant virus epidemiology, emergence and ecology.