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### Plant Pathology and Public Health

The day will come when the sign of the plant pathologist will stand forth in the street alongside that of the physician and surgeon. . . . For what will it profit us if all the ills and diseases of the human race be banished and we then face starvation because of diseases and pests in our food (1).

**To the Editor:** Every year plant diseases affect human society, resulting in inadequate nutrition and economic loss. The potato famine in the mid-1800s is the best-known example of a fungal plant pathogen's effect on history (2-4); *Phytophthora infestans* has recently reemerged in the Americas (5). Among the silent problems that have enormous effects on human society each year are crop infections by geminiviruses and tomato spotted wilt virus (6). These plant viruses are transmitted by whiteflies, leafhoppers, or thrips to hundreds of species of plants. They cause diseases of crops and ornamental plants around the world.

More obvious problems include ergotism, caused by the alkaloids produced by the fungus *Claviceps purpurea*. Ergotism was associated with the growth of rye, particularly in cool climates that cannot support wheat, and was implicated in the aberrant human behavior responsible at least in part for the Salem witch trials and St. Anthony's fire (2,7). In the last 5 years, a new plant disease, sorghum ergot (*Claviceps africana*), has spread north from Brazil into the United States. This fungus also causes disease in Australia, a sudden change from its known occurrence in Africa (8). Sorghum is the fifth most important cereal crop in the world, with approximately 45 million hectares under cultivation for food, beverages, feed, and fodder (8). Ergot alkaloid toxicity has not yet been demonstrated, but potential nutritional and economic losses could have substantial impact on public health.

With our increased awareness of the fragility

of the environment, including the quality of our drinking water, opportunities may exist for physicians to interact with plant pathologists. Concern is growing about the use of *Burkholderia cepacia*, a bacterial phytopathogen, for the biologic control of seedling diseases (9). Although *B. cepacia* is effective for the biologic control of fungal diseases in the agricultural environment (10), this bacterium could contaminate the public water supply and subsequently influence the health of the immunosuppressed or persons with cystic fibrosis (9-11). This risk exemplifies the need to integrate plant health measures with human and veterinary health guidelines.

Plant pathology and public health also intersect with post-harvest fungal infections of seed and grain, particularly *Aspergillus flavus* and *Fusarium moniliforme* (2), which produce aflatoxin and fumonisin, respectively. During the past 2 drought years in Texas, aflatoxin in contaminated corn and peanuts has become a public health problem. In 1998, more than 50 pet dogs died of aflatoxicosis, perhaps by eating aflatoxin B1-contaminated corn used in dog food (12).

Although the veterinary and medical communities are well aware of the risks associated with plant pathogens when they enter the animal or human food supply, more routine interactions with plant pathologists could benefit public health. For example, plant pathologists can often predict impending plant disease outbreaks. This information can be used by epidemiologists to sound a warning about impending food shortages or poor food quality, particularly in developing countries. Plant pathologists are also developing new types of resistance in host plants and alternative strategies for managing plant diseases. These measures should improve food quality and reduce the negative public health impact associated with plant diseases.

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### Pet-Associated Zoonoses

**To the Editor:** We read with interest the article by Grant and Olsen on preventing zoonotic diseases in immunocompromised persons (1). We completely agree with the benefits of communication between physicians and veterinarians. However, we want to emphasize that pet-associated illnesses are not limited to the immunocompromised; pregnant women and young infants should be included in this high-risk category. Our recently published survey (2) reaffirms the need for education of the general public, parents, and—to a lesser extent—pediatricians regarding pet-associated hazards.

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