

***Dickeya* Species Affecting Potato: Current Distribution in the U.S. and Outlook for 2017**

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Soft rot, aerial stem rot, and blackleg of potato are caused by multiple species of *Pectobacterium* and *Dickeya*. Several species within the genus *Pectobacterium* are endemic in U.S. potato production and it appears one or two *Dickeya* species are rapidly increasing in prevalence, becoming an expensive problem for the potato industry. For example, *Dickeya dianthicola* was first reported the northeastern U.S. in 2015 and was later reported in 10 different states at the end of 2015, including states that produce seed potatoes. By the fall of 2016, *D. dianthicola* was detected in 23 states and two Canadian provinces. Based on testing of seed potatoes from affected states, *D. dianthicola* will likely cause losses again in 2017. Given the difficulty of eliminating bacterial pathogens from seed potato, this bacterial pathogen will continue to be a problem for many years.

Pectobacterium atrosepticum, *P. carotovorum*, and *P. wasabiae* are also present in U.S. potatoes and cause soft rot diseases. In addition to *D. dianthicola*, two other species of *Dickeya*, *D. dadantii* and *D. chrysanthemi*, are present in U.S. potato but their impact on production has not been documented. It is common to find multiple species of these two bacterial genera in a single field or a single plant. Thus, the observed disease problems in the field may be a result of a pathogen complex. While not all of these species are equally aggressive on potato, it is not known how new species may interact with those soft rot pathogens that are endemic. Therefore, it is important to study the biology of both genera including the potential interactions that may occur among all species of the pathogen complex.

Multiple pathogenic species of *Dickeya* and *Pectobacterium* can cause seed piece decay, blackleg, stem rot and wilt, and tuber soft rot. Disease losses can occur at planting, during the growing season and in storage. Current management options rely primarily on cultural practices and no commercial potato varieties are resistant. No systemic antibacterial compounds are registered for use in potato and since the pathogens colonize the plant vascular system, contact materials are of limited use after the pathogens colonize the plant or tuber. Currently, the best management practice is exclusion, to exclude the pathogens from the farm, but complete exclusion is a nearly impossible task. Disease management also relies on sanitation and proper handling of potatoes before and during planting, and at harvest and during storage. Accurate diagnosis and detection of the pathogen at key points of seed potato production can also help to reduce the impact soft rot bacteria.

It appears that the potato industry will be dealing with soft rot diseases caused by both *Pectobacterium* and *Dickeya* species for a long time to come. This is not a reason for panic, but a reminder to be vigilant when it comes to management of bacterial diseases. Researchers are currently seeking funding to develop improved management strategies for this pathogen complex and economic analysis tools to guide the implementation of the management strategies.