Example Dickeya Management Program for Certified Seed Production

Developed by Wisconsin Seed Potato Certification Program (WSPCP) staff including Alex Crockford (Program Director), Brooke Babler, Andy Witherell and inspectors, with assistance from former director Amy Charkowski. Information from Amanda Gevens, Co-Interim Administrative Director WSPCP; Russell Groves, Co-Interim Administrative Director WSPCP

- Non-host crop rotation (legumes and small grains).
- Cleaning of equipment and people between seed lots and/or fields.
- Purchase clean seed on thoroughly sanitized trucks. Control temperature and environmental conditions after seed delivery to minimize free water and condensation.
- Irrigation out of deep wells.
- Sanitation throughout the stored and seed cutting processes. Sanitizers used on knives during and between cutting. If possible, plant uncut seed.
- Copper containing fungicides used judiciously during the production season especially after severe weather events. These are applied to aid in reducing some inoculum and limiting plant to plant spread in fields for Pectobacterium and potentially Dickeya, recognizing efficacy for Dickeya has not been documented. Copper treatments can interfere with detection assays.
- Multiple field inspections done for blackleg: 2-3 inspections with symptom picking and PCR testing specific to Dickeya. Additionally ad hoc field samples submitted by growers/scouts/inspectors following up on suspicious symptoms.
- Manage calcium and nitrogen fertility inputs.
- Smaller tubers are less susceptible to soft rot.
- Harvest tubers with well-developed periderm. Harvests should be carefully timed to reduce damage to tubers and to mitigate periods of high moisture around the tubers at and around harvest. Remove symptomatic tubers at harvest.
- Conduct a survey of all early generation seed. Dickeya testing (400 tubers per lot) in composite samples of 200 or less.
- All testing is based on results of two PCR methods (PelADE for Dickeya confirmation and Dia-C for Dickeya dianthicola confirmation). The University of Wisconsin tissue culture/diagnostic laboratory was involved with the recent multi-state effort to validate assays across 7 labs and there was 98% agreement across laboratories.
• Plants are inspected for blackleg/Dickeya symptoms during the winter grow out in Hawaii. If symptoms appear in the grow out, additional testing of the stored tubers will be conducted.

Additionally, the University of Wisconsin tissue culture/diagnostic laboratory is associated with the Wisconsin Seed Potato Certification Program and has been very active in examining other reservoirs for the pathogen such as tissue culture plantlets and greenhouse grown tubers. Results indicated that these were not latent sources.

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