At a Maine Potato Board Seed Executive Council meeting, the following information was presented:

In voluntary dormant tuber testing from the 2015 crop (347 samples), 16% of the samples tested positive for *Dickeya*.

In voluntary dormant tuber testing from the 2015 crop (277 samples), the following levels for *Dickeya*-positive samples by field year were presented:

<table>
<thead>
<tr>
<th>Field Year</th>
<th>Number tested</th>
<th>% <em>Dickeya</em> Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY1</td>
<td>76</td>
<td>0</td>
</tr>
<tr>
<td>FY2</td>
<td>86</td>
<td>9.3</td>
</tr>
<tr>
<td>FY3</td>
<td>74</td>
<td>24.3</td>
</tr>
<tr>
<td>FY4</td>
<td>38</td>
<td>15.7</td>
</tr>
<tr>
<td>FY5</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

*Dickeya* in Maine seed potatoes is at crisis levels. The 24% of the voluntarily submitted FY3 lots tested positive for *Dickeya*. Likely, some of these are to be planted and the resultant crop will be sold as seed or replanted, harvested, and sold as seed a year later. Certainly, the 9% of FY2 (one field year away from harvesting a crop from planted minitubers) that tested positive for *Dickeya* are to be planted and the resultant crop will be replanted more than once before being sold as seed.
Following this protocol will help mitigate risks associated with *Dickeya* in the production of seed potatoes. The protocol will also be effective for *Clavibacter michiganense* pv. *sepedonicum*, the causal agent of Bacterial Ring Rot; *Pectobacterium* spp., the causal agent of Blackleg, and other bacterial pathogens that can be seed borne or affect potato seed.

The crux of the protocol is a zero tolerance for *Dickeya*. Initially, a zero tolerance for any seed replanted for multiplication is a must. If not, *Dickeya* in FY2 and FY3 seed will continue to increase and have the potential to cause the catastrophic losses some seed recipients have experienced. The end goal is zero tolerance of *Dickeya* in Maine potato seed.

**Introduction**

All potato seed produced must be entered into the Maine Seed Potato Certification Program and be in conformity with the requirements of 01-001 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY Chapter 252: RULES GOVERNING CERTIFICATION OF SEED POTATOES IN THE STATE OF Maine ([https://www1.maine.gov/sos/cec/rules/01/chaps01.htm](https://www1.maine.gov/sos/cec/rules/01/chaps01.htm)). This site lists the legal requirements for nuclear, foundation, and certified potato seed. Listed are also the legal requirements for the facilities that produce these classifications of potato seed including the sanitation and field requirements.

**Nuclear Seed**

**(Field Year 0, 1, 2 and 3 Seed)**

**Facility**

All seed for increase should originate from a nuclear seed facility that follows this protocol. Records tracing each seed lot back to the nuclear seed facility should be kept for a minimum of 5 years. Potato tubers not produced using this protocol (e.g. from outside sources) should not enter this nuclear seed facility. If a seed lot from a source not following this protocol enters the facility, the integrity of the protocol is lost and cannot be regained and the seed lot must be flushed off the nuclear farm.
Equipment
All field and potato handling and harvesting machinery used at the nuclear seed facility must be for the exclusive use at that facility. If machinery that has been in potato fields not following this Dickeya IPM protocol enters potato fields of this nuclear seed facility following this protocol, the integrity of the protocol is lost and cannot be regained and the seed lot must be flushed off the nuclear farm.

Harvest
Field equipment used for harvest must be disinfested with 400 ppm or greater concentration of a commercially acceptable quaternary ammonium solution between seed lots. Handling equipment, e.g., conveyers, must be disinfested with 400 ppm or greater concentration of a commercially acceptable quaternary ammonium solution between seed lots.

Storage containers
Totes, bins, boxes or similar containers from a production facility that does not adhere to this protocol must not be used. All buildings, totes, bins, boxes or similar, must be pressure washed to remove any soil or potato residue and then disinfested with 400 ppm or greater concentration of a commercially acceptable quaternary ammonium solution.

If seed is loaded into containers originating from a facility not following this Dickeya IPM protocol, the integrity of the protocol is lost and cannot be regained without flushing the seed lot. These containers and seed tubers cannot be returned to the nuclear seed facility.

Seed Tubers
If seed tubers leave a facility following this Dickeya IPM protocol and enter a different facility using this Dickeya IPM protocol, the integrity of the protocol is intact.

Should seed tubers leave a facility following this Dickeya IPM protocol and enter a different facility that does not use this protocol, the integrity of the protocol is lost and cannot be regained.
Field Year 0 seed is produced in a lab or a greenhouse
Field Year 0 seed planted becomes Field Year 1 seed when harvested
Field Year 1 seed planted becomes Field Year 2 seed when harvested
Field Year 2 seed planted becomes Field Year 3 seed when harvested
Field Years beyond Field Year 3 seed are not eligible for nuclear designation

Seed Handling
Field Year 0, 1, and 2 seed is preferred to be planted whole (single drop, round seed) rather than cut.

Planting should be done only with a cup-type planter.

Testing
  Dormant tuber testing
Dormant tuber testing should be done at the following rates:
Field Year 0 seed (lab or greenhouse produced): 1 tuber per hundredweight up to 400 tubers per seed lot.
Field Year 1 seed: 1 tuber per 25 hundredweight up to 400 tubers per seed lot.
Field Year 2 seed: 1 tuber per 25 hundredweight up to 400 tubers per seed lot.
Field Year 3 seed: 400 tubers per seed lot.

Samples should be taken at harvest to ensure a random selection of tubers. The presence of *Dickeya* in any seed lot is cause for flushing the seed lot off the nuclear farm. A nonrandom sample will not provide any confidence level of the absence of *Dickeya* in the seed lot; it can only confirm the presence if the lot tests positive for *Dickeya*.

  Field plant testing
Field samples symptomatic with *Dickeya* must be tested. The presence of *Dickeya* in any seed lot is cause for flushing the seed lot off the nuclear farm.
Foundation/Certified Seed
(Field Year 3, 4 and 5 Seed)

Facility
All seed for increase should originate from a nuclear or foundation/certified seed facility that follows this protocol. Records tracing each seed lot traceable to the nuclear seed facility should be kept for a minimum of 5 years. If seed or nonseed tubers not produced in a facility using this protocol (e.g. from outside sources) enter the foundation/certified seed facility, the integrity of the protocol is lost and cannot be regained without flushing the seed lot off the foundation/certified farm.

Equipment
All field and potato handling and harvesting machinery used at the foundation/certification seed facility must be for the exclusive use at that facility. If machinery that has been in potato fields not following this Dickeya IPM protocol enters potato fields of this foundation/certification seed facility following this protocol, the integrity of the protocol is lost and cannot be regained and the seed lot must be flushed off the foundation/certified farm.

Harvest
Field equipment used for harvest must be disinfested with 400 ppm or greater concentration of a commercially acceptable quaternary ammonium solution between seed lots. Handling equipment, e.g., conveyers, must be disinfested with 400 ppm or greater concentration of a commercially acceptable quaternary ammonium solution between seed lots.

Storage containers
Totes, bins, boxes or similar that used in a production facility that does not adhere to this protocol should not be used at the facility. All buildings, totes, bins, boxes or similar, must be pressure washed to remove any soil or potato residue and then disinfested with 400 ppm or greater concentration of a commercially acceptable quaternary ammonium solution.
If seed is loaded into containers originating from a facility not following this *Dickeya* IPM protocol, the integrity of the protocol is lost and cannot be regained without flushing the seed lot. These containers and seed tubers cannot be returned to the foundation/certified seed facility.

**Seed Tubers**
If seed tubers leave a facility following this *Dickeya* IPM protocol and enter a different facility using this *Dickeya* IPM protocol, the integrity of the protocol is intact.

Should seed tubers leave a facility following this *Dickeya* IPM protocol and enter a different facility that does not use this protocol, the integrity of the protocol is lost and cannot be regained.

Field Year 3 seed planted becomes Field Year 4 seed when harvested  
Field Year 4 seed planted becomes Field Year 5 seed when harvested  
Seed beyond Field Year 5 are not eligible for seed designation

**Seed Handling**
Field Year 3 and 4 seed is preferred to be planted whole (single drop, round seed) rather than cut.

Planting is preferred to be done with a cup-type planter rather than a pick-type planter.

**Testing**

**Dormant tuber testing**
Dormant tuber testing should be done at the following rates:  
Field Year 4 seed: 400 tubers per seed lot.  
Field Year 5 seed: 400 tubers per seed lot.

Samples should be taken at harvest to ensure a random selection of tubers. The presence of *Dickeya* in any seed lot is cause for flushing the seed lot off the foundation/certified farm. A nonrandom sample will not provide any confidence level of the absence of *Dickeya* in the seed lot; it can only confirm the presence if the lot tests positive for *Dickeya*.
Field plant testing
Field samples symptomatic with *Dickeya* must be tested. The presence of *Dickeya* in any seed lot is cause for flushing the seed lot off the foundation/certified farm.