

Pioneers In Seed Potato Certification

Much of the early research work on potato diseases and how they spread was done in Germany and Holland around the turn of the century. Scientists found that, through careful monitoring of the crop and removal of unhealthy plants, they could maintain a vigorous, healthy stock indefinitely. Similar research soon was being conducted in the United States. Efforts in Wisconsin led to the establishment of the Wisconsin Seed Improvement Association in 1905. The Association decided to support a formal plan for inspection and certification of potato seed, and in 1914 Wisconsin, along with Maine, Idaho and Vermont, established the first such official state programs in North America. The Wisconsin Seed Potato Certification Program has been administered since inception by the Department of Plant Pathology, College of Agricultural and Life Sciences, University of Wisconsin - Madison. The program retains a full-time staff of experienced professionals to ensure thoroughness and impartiality in inspection and certification procedures.

Strict Standards Mean High Quality From Wisconsin

- *All certified seed potatoes are produced in a limited generation program with a maximum of seven generations of field propagation.
- *Certified seed potato growers must enter their entire potato acreage for certification, and plant all acreage with foundation class seed.
- *Only certified seed potato growers with a record of no bacterial ring rot for two consecutive seasons can produce foundation class seed.
- *All potatoes entered for certification undergo a minimum of two field inspections and a tuber inspection at harvest or in storage.
- *All potatoes meeting field and tuber inspection standards must be post-harvest tested to be eligible for certified seed tags.
- *All potato storage facilities must be inspected and approved prior to filling with certified seed potatoes.
- *All certified seed potatoes must be graded in accordance with Wisconsin seed potato grade standards before official tags can be attached.
- *Post-harvest testing of all certified seed lots ensures that problems from late-season virus infections are identified and assessed according to specific tolerances, preventing the movement of seed lots with potentially yield- and quality-damaging virus infections to commercial potato growers.

Tolerances for Certified and Foundation Seed Potato Classes in Wisconsin

Wisconsin seed potatoes are classified as "certified" or "foundation", depending on disease and mixture levels and intended use. Tolerances for certified class are set to meet minimum acceptable standards for commercial production (see table). Foundation class seed meets much stricter tolerances required to protect the integrity of the seed industry. **Typically over 80% of seed lots entered for certification meet FOUNDATION quality standards for both field and winter-test inspections.**

Field and Harvest Inspection Standards for Certified and Foundation Seed Potato Classes in Wisconsin*

| Disease or Defect | Certi-fied(%) | Founda-tion (%) |
|--------------------|---------------|-----------------|
| Leaf roll | 1.0 | 0.25 |
| Mosaic | 1.0 | 0.25 |
| Spindle Tuber | 0.0 | 0.00 |
| Total Virus | 2.0 | 0.25 |
| Bacterial Ring Rot | 0.0 | 0.00 |
| Variety Mixture | 0.1 | 0.10 |

The Post-harvest Test

Virus infection of seed lots can and does occur after summer inspections are complete. A post-harvest grow-out of all seed lots is designed to prevent the certification of lots infected late in the season with viruses or other diseases.

Post-harvest Test Standards for Certified and Foundation Seed Potato Classes*

| Disease or Defect | Certi-fied(%) | Founda-tion (%) |
|--------------------|---------------|-----------------|
| Leaf roll | 5.0 | 0.50 |
| Mosaic | 5.0 | 0.50 |
| Spindle Tuber | 0.0 | 0.00 |
| Total Virus | 5.0 | 0.50 |
| Bacterial Ring Rot | 0.0 | 0.00 |
| Variety Mixture | 2.0 | 0.25 |

**Seed certified in Wisconsin does not exceed the appropriate tolerances listed in the above tables based on visual inspections. Higher tolerances in the winter test are due to the greater likelihood of selecting infected tubers in single-drop seed, as used in this test.*