

## What is a Certified Seed Potato?

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Seed certification, in general, has the goal of providing a service to the public to monitor the maintenance and increase of quality seed and propagating material of varieties grown and distributed in a state in such a manner as to ensure varietal purity. Seed potato certification is somewhat unique among certified crops in that it strives to also assure that the certified lot does not exceed tolerances for specified disease and other disorders that affect seed quality and performance.

In the US potato production originates as disease-free tissue cultured material that is initially propagated in a protected greenhouse/screenhouse environment to produce disease-tested “minitubers” that are essentially free of disease and pests. These are then increased in the field over a period of years until being planted into a commercial field that is harvested for consumption. Ideally, all commercial production would be planted with these ‘disease free’ minitubers, but that would be cost prohibitive. Therefore this initial ‘seed stock’ is gradually increased in the field over a period of 3 to 6 years until the cost per unit can make a commercial planting profitable.

Each year that a potato crop is planted in the field, it is potentially exposed to a number of entities like virus transmitting aphids, disease spores, soil-born fungi or nematodes, and potential variety mixing at harvest or in storage. The role of seed certification is to assure, to the extent possible, that the final certified seed lot is still acceptable for commercial production. This is done through a ‘Limited Generation System’ in which the crop is inspected and found to be within tolerances of specified diseases, pests, and deleterious conditions like chemical injury. Each ‘generation’ (or field year) has an increasing level of tolerance for disease. The first field year generally has a tolerance of 0% disease or offtypes, with the final year allowing up to 2 to 5% depending on the disease or condition. There is however a zero tolerance for some very deleterious diseases and pests, like Bacterial Ring Rot or Root Knot Nematode, throughout the generation system. Other diseases, like viruses causing tuber necrosis, have a set tolerance for all classes of 0.5% for recertification and 2% for certification.

Potato certification is a 5-step process involving the following:

1. Verification - which ensures the seed used meets requirements for eligibility of variety, seed class and testing, the field meets crop history requirements, and the farm qualifies as a ‘seed farm’;
2. Inspections - generally 2 or 3 in the field, one at harvest or in the bins;
3. Latent Virus Testing - PVX, PVY, sometimes PVY strains, on all or specified ‘latent’ varieties;
4. Post-harvest Test - generally a winter grow-outs carried out on a subset of the lot either in a greenhouse or Hawaii. Sometimes only a virus test is allowed;
5. Tags & Certificates - documenting acceptability, should include a North American Seed Potato Health Certificate (NAHC).

Certification strives to confirm bags tagged as ‘certified’ contain seed that: (1) is the correct **variety** (within tolerances) relying largely on the accuracy of the seed-source documentation; and (2) is within tolerance for a set of specified **diseases**, pests, and conditions. Certified seed is not necessarily ‘disease free’. Even disease with a zero tolerance MAY occur; it just was not detected during standard inspections or testing. Also, even though certification officials like to say “Certified Seed = Quality Seed” there are many other factors that determine the quality of the seed you produce or buy, including how it was handled, its physiological age, its variety, and presence of diseases not scored in the certification process. Certification is just part of process of producing or buying quality, high yielding potato seed, that will perform well in the field.