

Why Certify Seed Genetics?

The unnoticed international system for identity assurance and traceability



Seed genetics are the foundation of our food system. In fact, nine out of 10 bites of food start with seed. But how often do we think about seed genetics? When you're planting your backyard garden, do you think about how the seed itself may impact your final product - whether fruit, vegetables, herbs or flowers? For a tomato, you may pick a specific variety like cherry, roma, hothouse or heirloom seeds, but beyond that, you trust the tomato to grow and be what the packet says it is.

But for farmers planting, food processors buying, and international markets importing, this trust is paramount, and it goes far beyond looks.

In an era of climate change, sustainable food production relies more than ever on farmers planting seed of varieties or genetic identities that are locally adapted to their farm's growing conditions - soils, climate, crop pests and diseases. These genetic identities of seed aren't visible. That's why most food-producing countries have seed laws that support certification programs for genetic identity assurance and traceability.



Plant breeders invest years of research and millions of dollars to develop new seed varieties. They can target trait-specific food, fuel or fibre markets, local pest tolerance problems or global climate change adjustments. As a global grain exporter with a vast diversity of production conditions, this innovative development of new seed varieties is vital to Canada's agri-food sector.

However, it's one thing for a breeder to say they developed a new seed variety for, say, a lentil that is adapted to prairie regions, but when a farmer is trusting that their crop will have increased yields and thrive in

the Canadian prairies and their buyers expect to receive green lentil, there's no room for error. **This is where certification comes in.**

Seed variety, or genetic identity, certification is the officially regulated process for carefully multiplying the small quantities of Breeder seed of new varieties to the large volumes of Certified planting seed required by farmers. Seed certification helps ensure farmers have access to the latest innovative varieties they need to feed a changing world.

Who's Who in Seed Certification

The Canadian Food Inspection Agency (CFIA) oversees plant biosafety, variety registration, and seed certification.

The Canadian Seed Growers' Association (CSGA) sets national varietal purity standards, certifies pedigreed seed crops to those standards, and supports seed innovation and seed growers for the benefit of Canadian agriculture.

To preserve the new genetic identities and traits, Canada's seed crop certification body, the Canadian Seed Growers' Association (CSGA) works with seed grower members to produce and certify seed crops. Seed growers plant small quantities of true-to-type Breeder seed and for several crop production years, follow strict CSGA production requirements with officially recognized, third-party inspections of crops in the field and seed testing in labs until the final generation of Certified seed is available for sale to farmers.

This seed has its own CSGA-issued seed crop certificate, and is labelled with an official blue Canada Certified seed tag issued or approved by the Canadian Food Inspection Agency (CFIA). Certification provides reliable assurance of varietal purity and genetic identity, providing the specific characteristics required by that seed buyer. While *AncestryDNA* and *23andMe* can provide traceability for human genetic identities, CSGA certification records provide that traceability for Certified seed.

With this official Canada Certified seed tag, a farmer can purchase a drought-resistant wheat seed, trusting they will get what they are promised. And what if we choose to export this wheat seed? Seed certification is essential for trade as well.

Two international organizations of seed certifying agencies ensure coordination of seed certification standards: the European-based *Organization for Economic Co-operation and Development (OECD) Seed Schemes*, with 61 member countries, and the United States-based *Association of Official Seed Certifying Agencies (AOSCA)* with member agencies in 44 US states, Argentina, Australia, Brazil, Chile, New Zealand, and South Africa. Canada is a leading participant in the OECD Seed Schemes and a founding member of AOSCA.

Remember the 9 of 10 bites of food? Canadian seed growers also produce trait-specific Certified seed of over 60 different crop kinds that other farmers plant to grow the crops that produce our bread, beer, bacon, eggs, and most other products that fill your grocery shelves.

Farmers plant Certified seed for many reasons but most importantly, to access high-quality, identity-verified seed of new improved genetics. Certified seed sales also support variety development research and a reliable national seed certification system.

Food processors using grains and oilseeds grown from Certified seed are assured they start with the ingredient characteristics required for product differentiation. Different barley varieties provide different flavours for beer. Different soybean varieties produce different textures, firmness, and flavours for tofu. Different wheat and durum varieties produce different textures and crispness for cookies and pasta.

So why seed certification? Trust. Trust that the seed a farmer plants will produce the crop they expect. A trust that ripples all the way down the value chain, from processors, grocery shelves, and international markets.

This trust makes Canada's seed growers and seed certification the foundation of the Canadian seed sector, essential to a sustainable Canadian agri-food sector. In 2021, Canadian seed growers produced 1.25 million acres of 64 different crop kinds of more than 2,000 different seed varieties or genetic identities! The Canadian seed sector's economic impact, which includes more than 2,500 seed farms, was almost \$6.0 billion, with annual seed sales of about \$3.2 billion, employing 60,000 people.



Next time you're in the grocery store deciding which type of bread to buy or about to take that first sip of your favourite beer at the pub - take a second to appreciate Canada's world-class seed certification system.

To learn more about Canadian Certified seed and certification, visit CSGA at seedgrowers.ca.