

The background features a large, faint watermark of the International Seed Testing Association (ISTA) logo. The logo is circular and contains the text "INTERNATIONAL-SEED TESTING ASSOCIATION" around the perimeter. In the center, there is a scale of justice and the year "1924".

ISTA Wild Species Committee (WSC)

Testing Wild Seeds on focus

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What is Wild Species?



Wild Species:

Wild plant species are flora that grow, reproduce, and adapt in natural environments without human cultivation or intervention.

Wild species is generally broken down into **native**, **introduced**, and **naturalized** plants, each defined by how they originated and interact with their local environment.

While **naturalized** plants often live in harmony with native flora, some introduced species become **invasive**.



Wildflowers in a mountain meadow, Rocky Mountain National Park. Photo credited to NPS / Walker Hall

What is Native Species?

Native species:

Indigenous flora that have naturally occurred and evolved in a specific region or ecosystem over thousands of years.

For example, in Canadian prairie,



Prairie Crocus (*Anemone patens*): A slow-growing, early spring perennial with blue or purple flowers, typically blooming from mid-April to June. *Photo by Vladimir Kricsfalusy*



Western Red Lily (*Lilium philadelphicum*): A native wildflower featuring striking red-orange blooms with dark spots, found in meadows and open woods.

Value of Native Species:

Support Local Wildlife: They form the foundation of local food webs. Native insects, birds, and pollinators depend on them to survive.

•**Low Maintenance:** Because they adapted to your local environment, they require less water, fewer fertilizers, and no harsh pesticides once established.

•**Climate Resilient:** Their deep root systems help prevent soil erosion and improve water absorption, helping them withstand local droughts and weather extremes.

•**Preventing Invasives:** By planting native species, you displace non-native, invasive plants that can overtake local habitats.



Acer saccharum,
native to Canada

Wild vs. Native species?



The **origin** and **evolution** separated native or introduced wild plant species.

The same species could be native to one place, introduced, naturalized or invasive in another area.

Cirsium arvense, Canada thistle,
Naturalized in Canada



Rudbeckia hirta, black-eyed Susan,
Native to Canada

Commercialization of Native Species

Driven by rising ecological awareness, native species has been used for restoring local biodiversity, mitigating climate impacts, and supporting pollinators and wildlife for a healthy and balanced ecosystem.

Market Factors:

- **Land Reclamation & Restoration**
- **Horticulture & Landscaping**
- **Agriculture and Phytochemistry**

The native plant industry is a rapidly expanding sector of the broader green industry, valued in **the billions of dollars globally**.



Industry Challenges of Native or Wild Plant Species



Supply & Demand Imbalance: insufficient native seed inventories for large-scale restoration projects.



Genetic Sourcing Complexity: Sourcing starter seeds locally and keeping them genetically separated requires specialized handling that traditional nurseries lack.



Mechanization Deficits: Harvesting, cleaning, and processing diverse, fluffy, or oddly shaped native seeds often requires highly specialized or custom-modified machinery.

Seed Reproduction and Testing for Native/Wild Plant Species

Sourcing and reproduction seeds:

- Local Ecotypes (nativar)
- Wild Collection
- Reproduction

Determine native seed quality?

- Quality factors:

Purity (lack of inert matter/weeds), viability (whether the seed is alive), germination, dormancy (common in native species), and origin.

- Testing methods:

Many species has no testing method available in testing rules (e.g., ISTA, AOSA)



Native plant garden for pollinators
cited from <https://wildaboutsaskatoon.org/>

Seed Quality Difference of Native /Wild vs. Agricultural



Seed quality of Native and Wild

- Retain high genetic variation
- Slow growing and longer maturation time for wild survival
- High quality for ecosystem adaptation

Seed quality of Agriculture

- Breed for high genetic purity
- Fast growing and cultivated for maximum field uniformity
- High quality for uniformity and high yield



Dypsis spp



Arctotis venusta



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Cicer arietinum



Survey on Native Seed Companies-2016

General Conclusion of the Survey

- Majority of seed companies sold natives species solely in country
- 17% companies sold some natives in other countries
- 68% companies feel there is a lack of methods to test natives
- Lack of uniformity in testing natives
- Standard methods world-wide may not be appropriate approach

The background–ISTA WS Committee

Responding to the demand for testing methodology from the industry

- A working group was formed in 2015 to develop a website to share recommended seed testing protocols based on existing methodologies used by many seed labs and seed banks.
- A formal technical committee of ISTA established in 2024 -WSC

Royal Botanic Gardens **Kew**



ISTA
Seed Quality Assurance



Association of Official Seed Analysts



Society of Commercial Seed Technologists

ISTA WSC Composition



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Members	Country
<u>Susan Alvarez</u>	USA
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<u>Edith Marie Sylvie Daboue</u>	Burkina Faso
<u>Rachael Davies</u>	UK
<u>Stefanie Krämer</u>	Germany
<u>Heidi Larson</u>	USA
<u>Sergio Pasquini</u>	Italy
<u>Adele Scott</u>	New Zealand
<u>Razia Sultana</u>	India
<u>Fabricia Cristina dos Reis</u>	Brazil

*Note: 2 vacant position available

End-use based definition

A plant species intended to be used for the restoration and maintenance of habitat or ecosystem, soil or land erosion control, enhancement of biodiversity, or botanical value such as in landscaping. These plants, in some regions called native species, may provide food resources for various species and/or enhance the resilience of the ecosystem against pests and climate fluctuations.



The Goal of the ISTA Wild Species Committee



To develop or recommend testing protocols and methodologies for wild species **without testing rules** in order to evaluate as accurately as possible on seed quality for planting value, which usually includes purity, germination, dormancy and viability.



WSC Prioritised Species



The priority list has about 2000 species that are currently **not** in the ISTA of AOSA Rules for seed testing, and the rest of the list contains all species that are not in the rules, to prevent making protocols for species that already have official seed testing Rules.



Testing Wild Seeds

The seed test protocol database for wild seeds



- Website has been launched in 2026
- Built to host and manage website content

www.wild-seeds.net

Thank you!

