NORDIC GENETIC RESOURCE CENTER

Leafy Vegetables Collection at NordGen

Status of the active collection · September 2026

Pawel Chrominski, PhD
Senior Scientist
Curator, Vegetable and Potato Collections

NordGen



Lactuca serriola, NGB24497 Nyköping bro 13603

Nordic Genetic Resource Center - NordGen

Knowledge center for genetic resources and genebank conserving and distributing plant genetic resources











Pawel Chrominski *PhD*
Senior Scientist
Curator: vegetables and potatoes



- Building on over 50 years of Nordic cooperation
- Established in 1978 as Nordic Gene Bank
- Headquarters in Alnarp, Sweden
- Gene bank for seed propagated species and potatoes for Denmark, Finland, Iceland, Norway, and Sweden.



NordGen

The collection at a glance

Active leafy vegetable accessions maintained by NordGen

353

active accessions

21

taxa in 13 genera

96%

of Nordic origin

79%

safety-duplicated in both Denmark and Svalbard

42%

included in AEGIS

41%

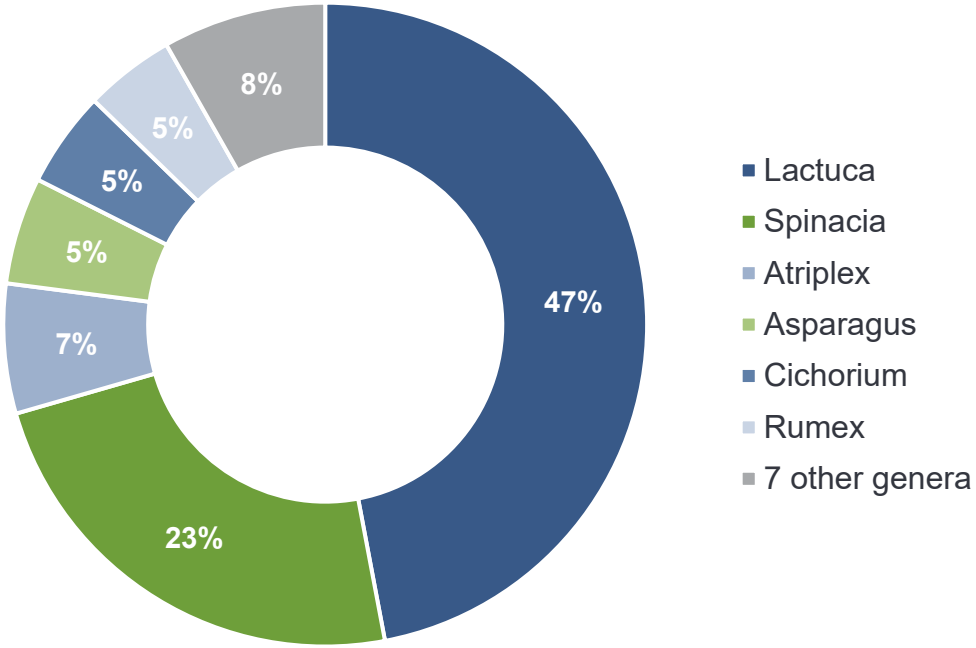
wild, semi-natural or weedy material



Spinacia oleracea, NGB2027 Kongen af Danmark Duran

Lettuce and spinach make up over 70% of the collection

Accessions per genus (n = 353)



Lactuca · 166

84 wild prickly lettuce (*L. serriola*) populations and 82 cultivated lettuces, incl. breeding lines.

Spinacia · 83

Spinach cultivars, mainly of Danish origin (69) – a strong historical cultivar set.

A long tail of minor crops

Orache, sorrel, Caucasian spinach, Good King Henry, chicory and more – 11 genera with fewer than 25 accessions each.



Regeneration of *Asparagus officinalis* NGB23644 Falsterbo Fyr SJ0101

All 21 taxa in the collection

Active accessions per taxon, sorted by size (n = 353)

Taxon	Common name	Acc.
Lactuca serriola	prickly lettuce	84
Spinacia oleracea	spinach	83
Lactuca sativa var. capitata	head lettuce	54
Lactuca sativa	lettuce	28
Atriplex hortensis	garden orache	23
Asparagus officinalis	asparagus	19
Cichorium intybus	chicory	15
Cicerbita muralis	wall lettuce	10
Hablitzia tamnoides	Caucasian spinach	7
Rumex obtusifolius	broad-leaved dock	6
Rumex acetosa	common sorrel	4

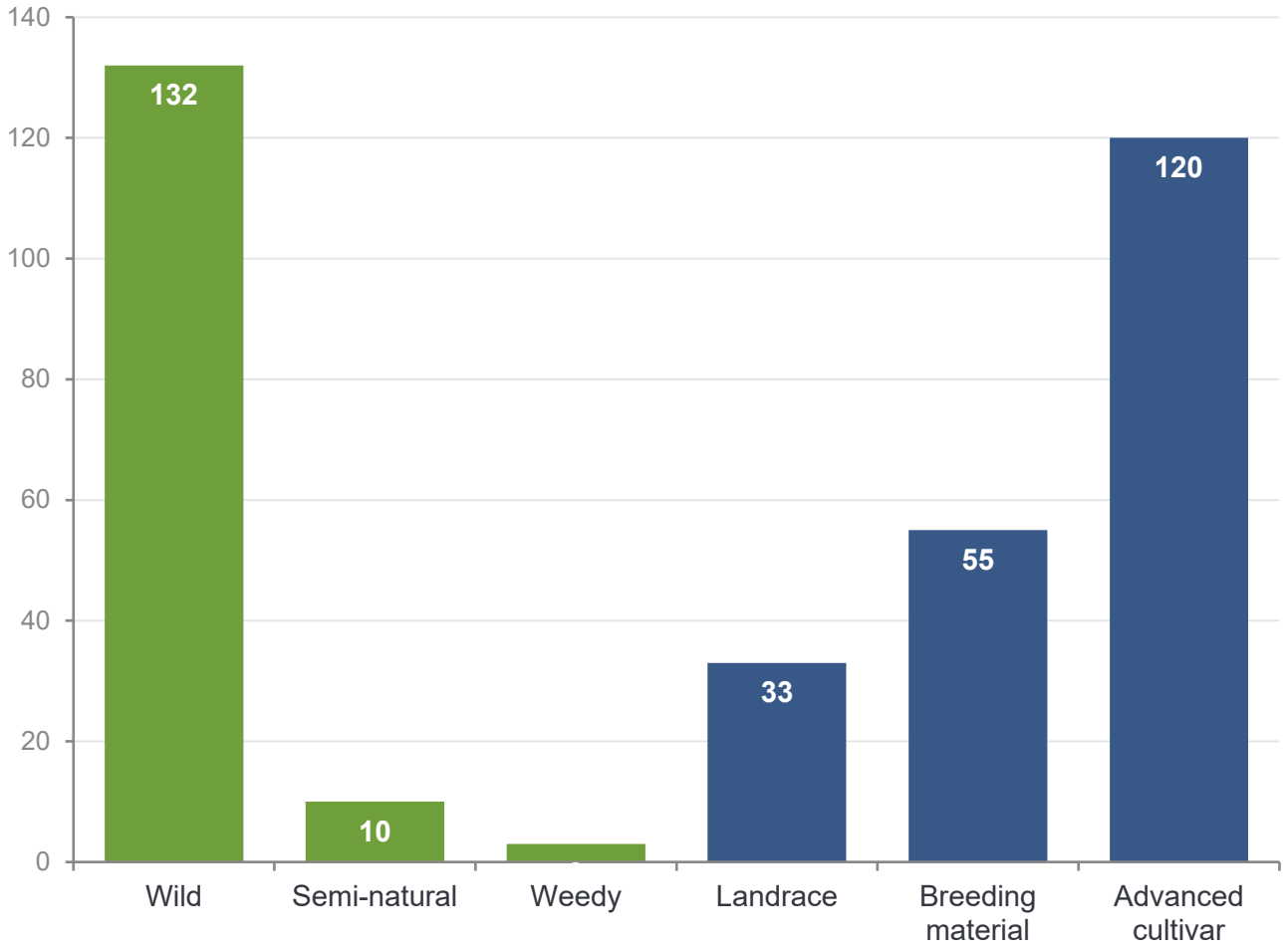
Taxon	Common name	Acc.
Blitum bonus-henricus	Good King Henry	3
Chenopodium album	fat hen	3
Rumex rugosus	garden sorrel	3
Cichorium endivia	endive	2
Lepidium campestre	field pepperweed	2
Rumex longifolius	northern dock	2
Valerianella dentata	toothed cornsalad	2
Diplotaxis muralis	annual wall-rocket	1
Lepidium latifolium	dittander	1
Rumex acetosella	sheep's sorrel	1
Total (21 taxa)		**353**



Regeneration of *Blitum bonus-henricus* at NordGen, NGB20317 Lammi Old Vicarage

From wild relatives to modern cultivars

Accessions per biological status (level of improvement)



41%

wild, semi-natural or weedy (145)

59%

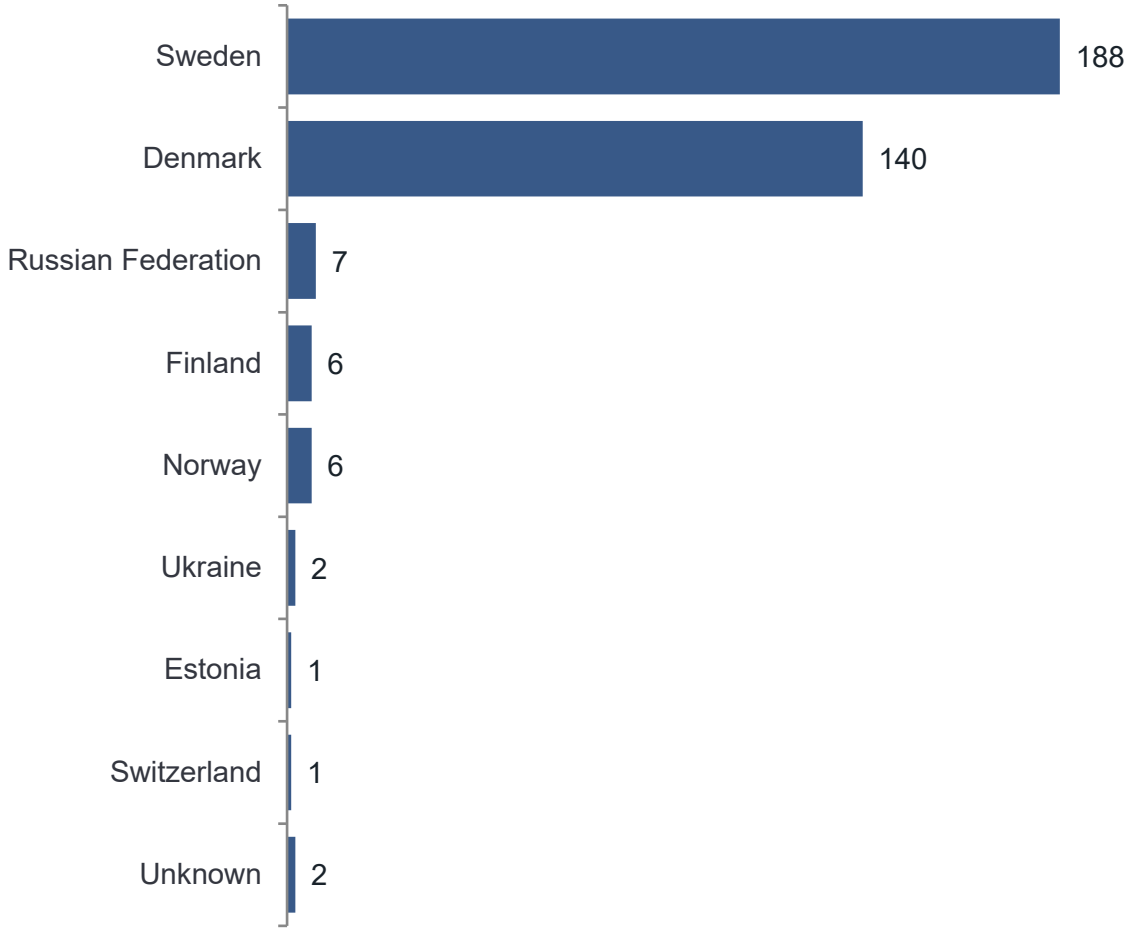
landraces, breeding material and cultivars (208)



Regeneration of *Atriplex hortensis* in NordGen's field. NGB20143 Moster Karens 'spinat'

A truly Nordic collection

Accessions per country of origin



96%

of accessions originate in the Nordic countries (340 of 353)

Sweden and Denmark alone account for 93%.

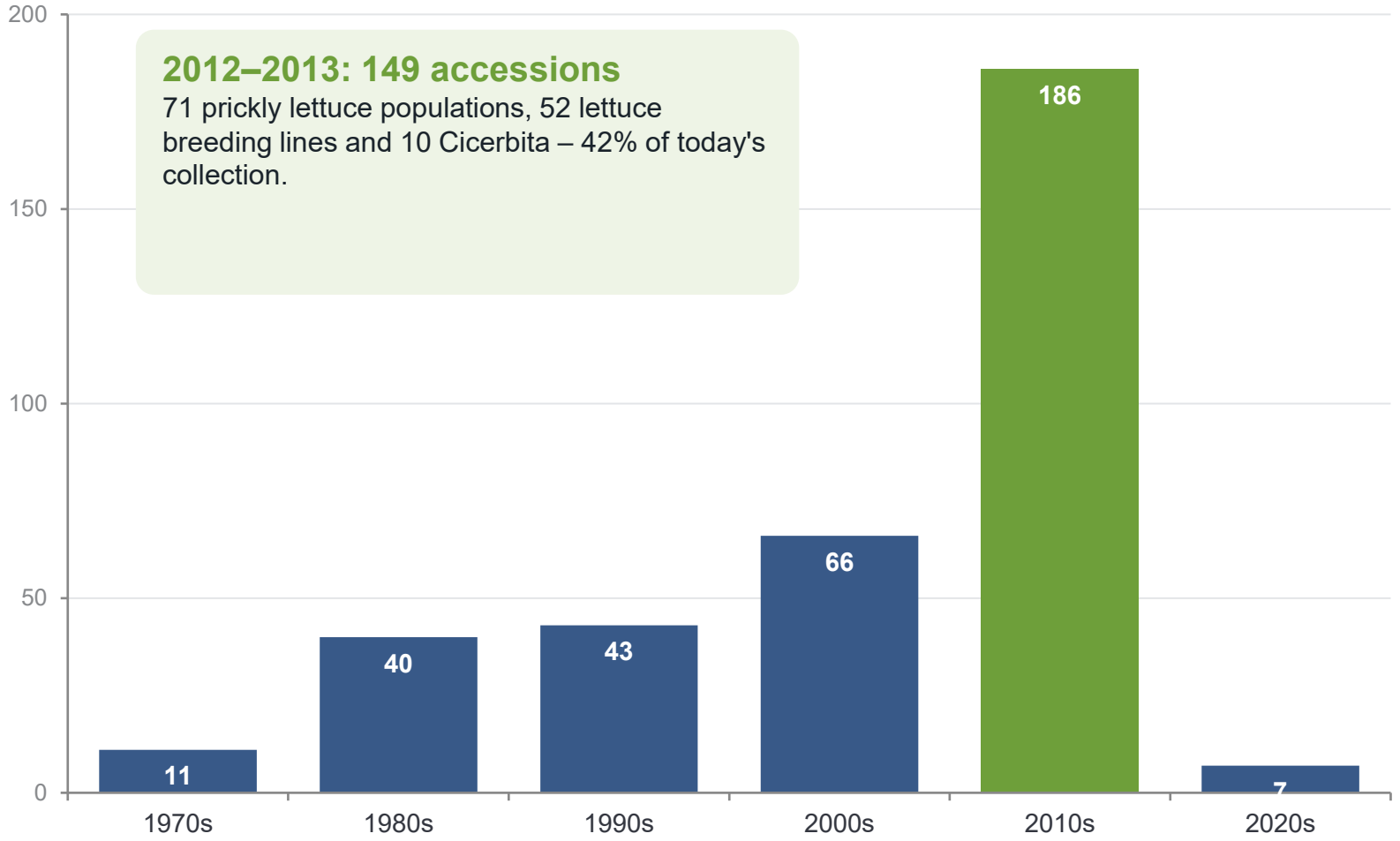
Material from Ukraine comes from the Swedish settlers of Gammalsvenskby.



Katrinetorp, Sweden - historic kitchen garden, which grows heirloom vegetables from the late 19th century.

How the collection was built

Accessions by decade of acquisition

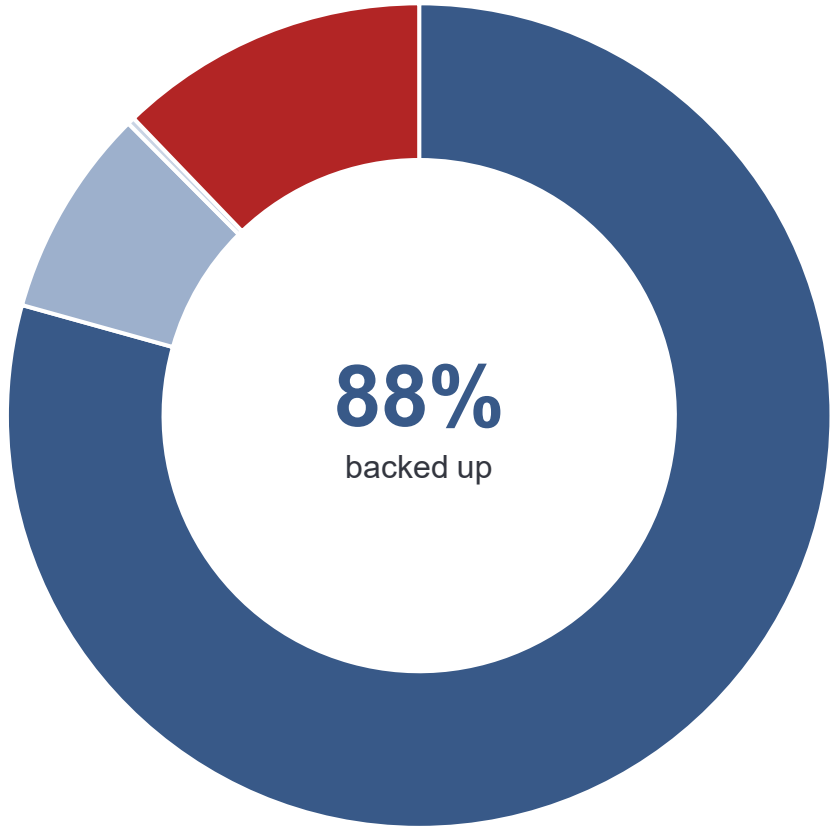




Regeneration of *Lactuca serriola* at NordGen

Safety duplication: well secured, with one clear gap

Combined backup status (NordGen Denmark and Svalbard Global Seed Vault)



309

88% duplicated at NordGen Denmark

281

80% deposited in the Svalbard Global Seed Vault

43 accessions (12%) have no safety backup

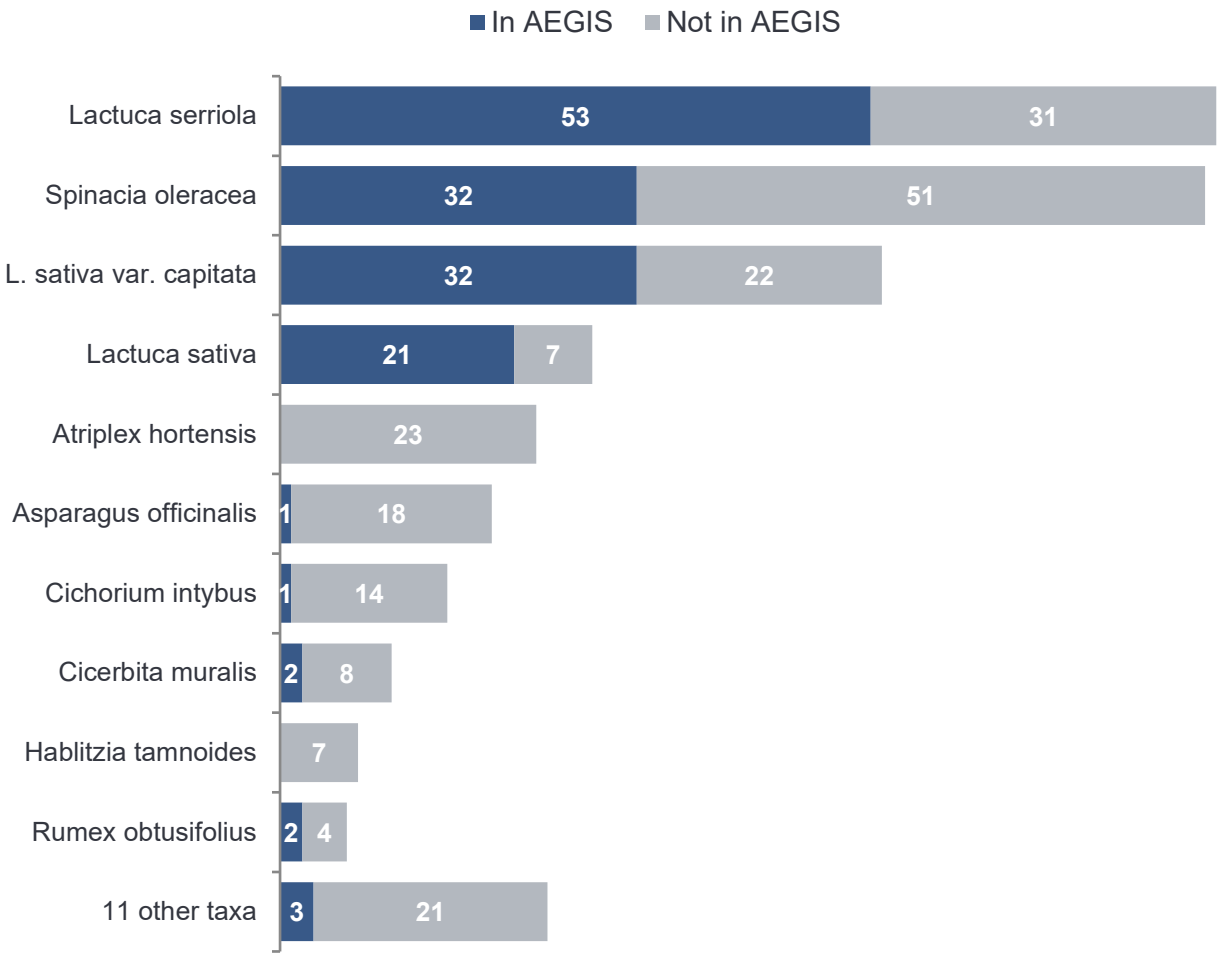
29 of them are spinach, mostly F1 hybrid cultivars; the rest are mainly asparagus and lettuce.



Inside the Svalbard Global Seed Vault

AEGIS: 147 accessions in the European collection

AEGIS status per taxon



42%

of active accessions are in AEGIS

89 from the vegetable collection

58 crop wild relatives

Lactuca accounts for 106 of the 147 AEGIS accessions.



Regeneration of *Lactuca sativa,* NGB18164 Hjerter Es

What keeps accessions outside AEGIS?

Three patterns in the current data

Non-core status

0 of 56

in AEGIS

Every accession marked as non-core is outside AEGIS – no exceptions.

Not backed up

0 of 44

in AEGIS

None of the accessions flagged as not backed up are in AEGIS.

Landraces

1 of 33

in AEGIS

Traditional cultivars are almost entirely outside AEGIS – 32 of 33.



Atriplex hortensis, NGB17954 Lönneberga

PhD project “Back to Basics”

Nordic heirloom vegetables for food security and sustainable farming – SLU & NordGen

PhD candidate: Linda Groot Nibbelink, SLU
Co-supervision: NordGen

Aim

To explore how Nordic heirloom vegetables from genebank collections can strengthen food security and climate-resilient, sustainable farming – starting with garden orache (*Atriplex hortensis*), a leafy vegetable once common in Northern Europe.

2025 evaluation at NordGen

Morphology and yield of 48 orache accessions, compared with 2 commercial spinach cultivars.



23 Nordic
NordGen

25 European
IPK Gatersleben

2 spinach
checks





Sowing (spring) and assessing (summer) the orache evaluation plots, 2025

Summary and priorities

Strengths

Rich Nordic heritage

96% Nordic origin, incl. historical Danish and Swedish cultivars.

Strong wild relative base

145 wild or weedy accessions, incl. 84 prickly lettuce populations.

Well secured

88% duplicated in Denmark and 80% in Svalbard.

Priorities

Close the backup gap

43 accessions without safety backup – many spinach F1 hybrids.

Revisit AEGIS nominations

Landraces and minor leafy crops are almost absent from AEGIS.

Complete passport data

Life form missing for 69 accessions, origin for 2.

Expand the collection

Collect further relevant Nordic accessions, e.g. wild relatives and heirlooms.



Svein Solberg (NordGen) collecting asparagus seeds near Falsterbo lighthouse (fyr), Southern Sweden, January 2001

Thank you

Pawel Chrominski, PhD
NordGen · Alnarp, Sweden
www.nordgen.org

NordGen



Regenerations at NordGen's garden