



NordGen

Nordic Genetic Resource Center



Hvad gøres for at få genmaterialet fra NordGen markedsført og brugt?

- What is done to increase utilization of genebank material -

– NordGen presentation –

DanSeed Symposium 8.-9. Marts 2010, Morten Rasmussen



- NordGen - Nordic Genetic Resource Center
- Hvem bruger NordGen idag? - users
– og hvor meget?
- Hvordan øger vi brugen af PGR? – how to increase
- Igangværende initiativer – ongoing activities



NordGen

NordGen



- Nordisk Institution under Nordisk Ministerråd
 - bl.a. den fælles Nordiske genbank -
- Stiftet 1. Jan. 2008; ved sammenlægning af
 - NSFP (Nordisk Skovbrugs Frø-og Planteråd)
 - NGH (Nordisk Genbank for Husdyr)
 - NGB (Nordisk Genbank)
 - NGR miljø (siden 1.Jan. 2009)





NordGen

NordGen

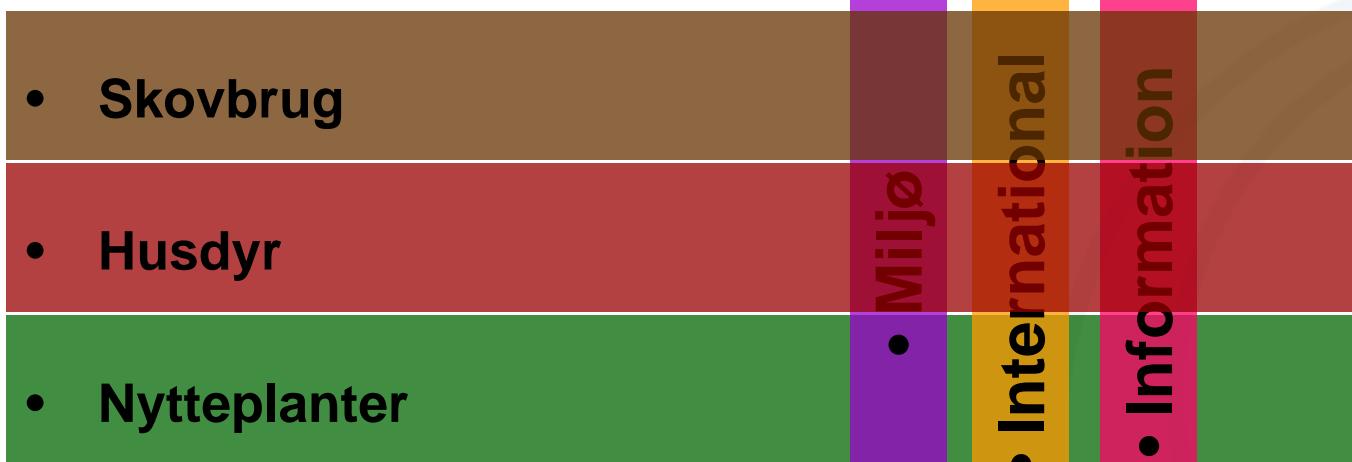
Nordisk genressourcecenter



norden

Nordic Council of Ministers

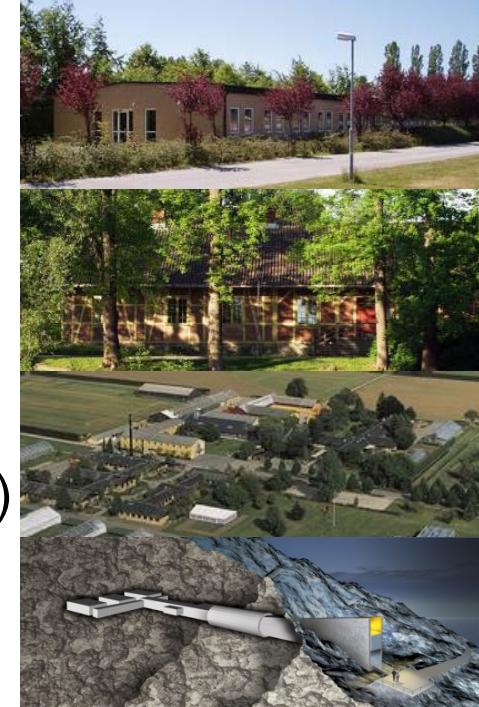
- Bevaring og Bæredygtig Udnyttelse af GR i





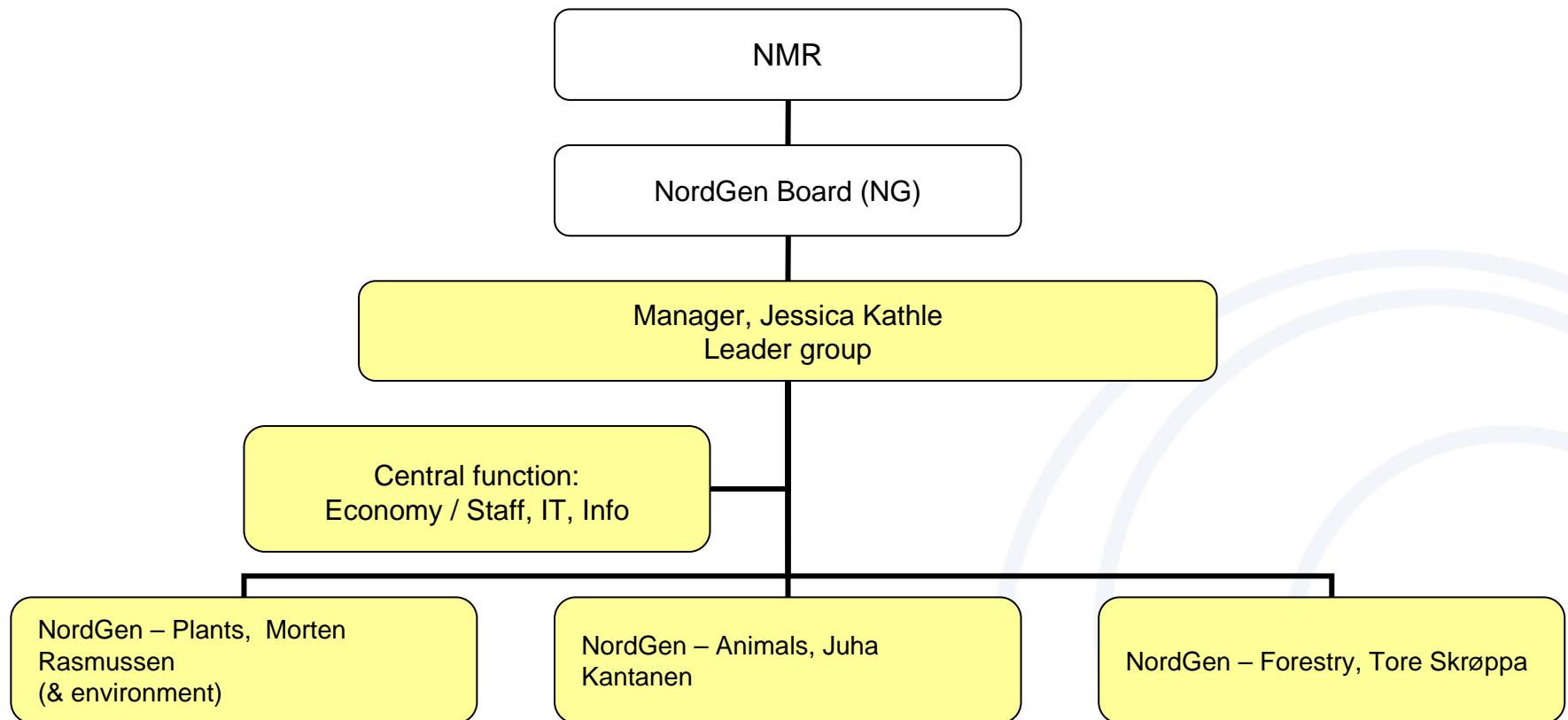
NordGen

- Placing
 - Hovedkontor + Plantesektor i Alnarp, Sverige (v. SLU)
 - Husdyr- + Skovsektor på Ås Norge (v. UMB)
 - (Basislager på Årslev, Danmark – v. ÅU-DJF)
 - (Sikkerhedslager på Svalbard, Norge)
 - (Kartofler..... Ikke besluttet FI/DK/SE?)
- Ansatte: ~33 personer fordelt på ~ 28 årsværk
- Budget 3,3 Mill. EUR (1,8 fra NMR)
- Mere information: <http://www.nordgen.org>





Organisation



Vision

Contribute to secure livelihood for
present and future





Opgaver & forventninger...

- **Sikre bevaringen** af Nordiske genresourcer og genressourcer relevante for Norden (GR)
 - - for planter i genbanken og i Svalbard globale frøhvælv (SGSV)
- **Sikre adgang til diversitet** og **fremme brug** af GR indenfor planterdyrkning, husdyravl og skovbrug;
 - - påvirke kommercielle avlsorganisationer I Norden til en bedre og **bæredygtig brug** af GR
- **Skabe og øge synergি** mellem:
 - **Landbrugs- og miljøsektoren** på GR-området
 - **nationale og Nordisk** GR-aktiviteter (forskning/forædling, politisk og administrativ)
 - Nationale og nordiske **videnskabelige netværk**
 - **Nordisk policy** i internationale organisationer
- "Markedsføre" **vigtigheden** af **adgang til genetisk diversitet**

Grundlag

- Kalmar Declaration (2003)
- ITPGRFA (sMTA & multilateral system since 2007)
- CBD – Basic principles for conservation of GR
- TRIPS - Framework for rights on living organisms /EU-dir
- FAO: Global Plan of Action for AnGR
- Interlaken Declaration, sept 2007
- State of the World's Forest GR (FAO, juni 07)



NordGen

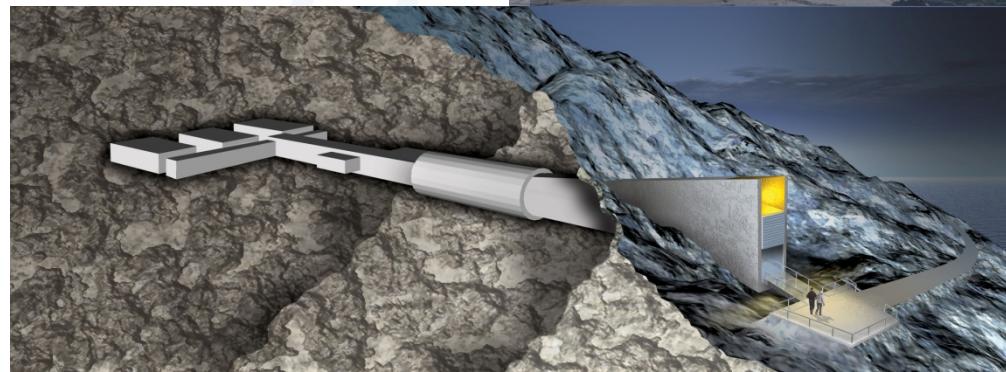


Svalbard Global Seed Vault

- 3-partsaftale mellem NordGen, Global Crop Diversity Trust (FAO) og Norges landbruksministerium
- NordGen har det operationelle ansvar
- International succes
- Stor opmærksomhed - Informationsbehov



Roland von Bothmer – Ola Westengen





Ex Situ frøgenbank

- ◆ Aktiv samling - Alnarp, Sverige
 - Distribution, opformering, spiringsanalyser, karakterisering/evaluering/beskrivelser
- ◆ Basissamling - Årslev, Danmark
 - Basislager, frøforyngring
- ◆ Sikkerhedssamling – Svalbard Global Seed Vault (SGSV), Norge
 - Kopi af basissamling, mindre frømgd.

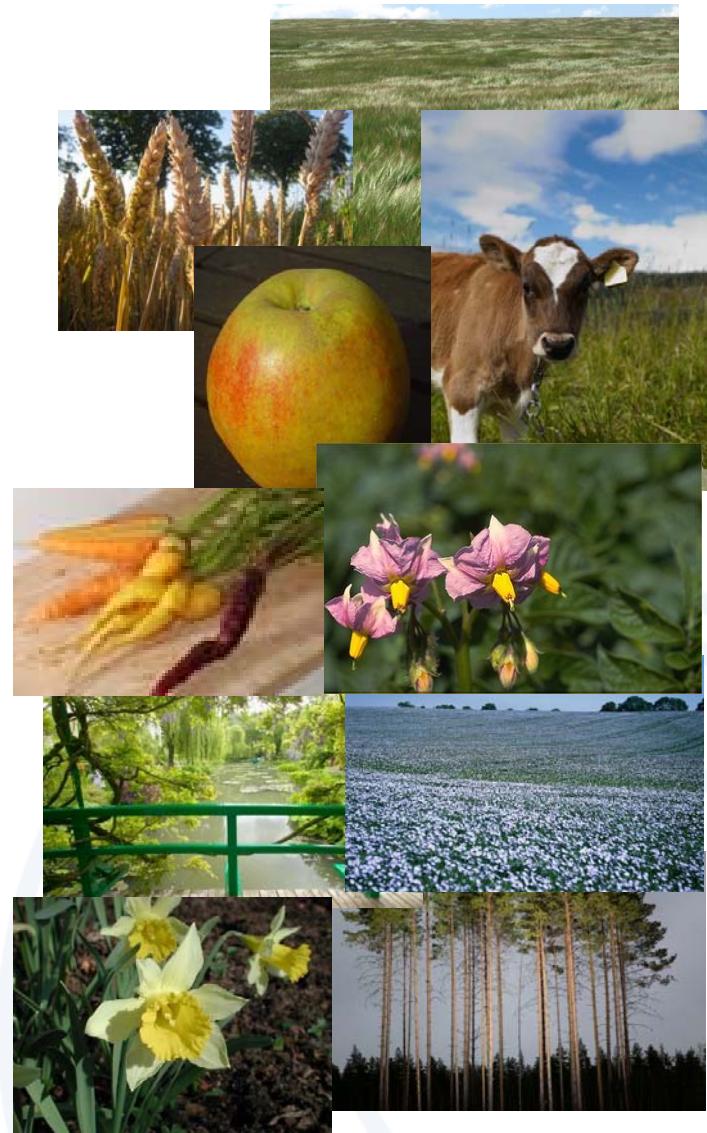




- **Materiale – Primære samlinger:**

| | |
|------------------------------------|-------|
| • Cerealier | 17532 |
| • Foderafgrøder | 5067 |
| • Frugt & bær (info.) | 153 |
| • Kartoffel | 557 |
| • Oileafgrøder | 1554 |
| • Grønsager | 6446 |
| • Industriafgrøder | 156 |
| • Landskabsplanter | 14 |
| • Skovtræer (frø) | 16 |
| • Krydderuerter & Medicinalplanter | ~300 |
| • Prydplanter (under opbygning) | - |

TOTAL: ~33.000 +





- **Materiale på vej ind...**

- Vavilov's Nordiske materiale
- Risø's frølager ...
- Historiske frø – “Danefrø?”
- Louis Lehman samling
- Reliktarter (indsamling DK 2009)
- KU-Life samling (forventet efterår 2010)
- Hammenhög grønsager (in transition)
- Havre, svensk forskningsmateriale
- Risoë/KVL mutant samling – 2011?
- ***In Situ....***





Ex situ - Klonarkiver.....

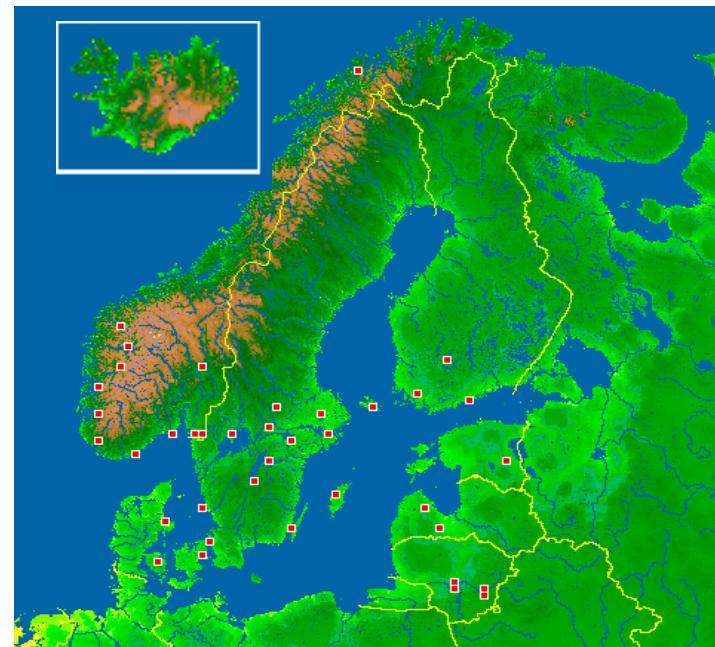
Norge: 20

Sverige: 14

Finland: 6

Danmark: 2(+6)

Island: 1(+1)



Lena Ansebo





- Hvem bruger NordGen idag?
 - og hvor meget?



NordGen Planter - netværk

- *Arbejdsgrupper (forædling/forskning/+)*
- *Nationale Programmer for PGR*
- *Øvrige netværk*
 - *Plante-forædlere & forskere*
 - *"Nye" brugergrupper*



The collage includes:

- A screenshot of the NordGen website showing a search bar and navigation menu.
- A screenshot of the PLANTEARVEN website, featuring a header with the NordGen logo and a banner about the "PROGRAMMET FOR ØDLAD PLANTER".
- A screenshot of the MTU Agricultural University of Iceland website, featuring a header with the MTU logo and a banner about "PLANTER OG PLANTEFORÆLDNING".
- A screenshot of the Agricultural University of Ireland (AUI) website, featuring a header with the AUI logo and a banner about "Jordbrugets planterøntekniske ressourcer i Danmark".
- A screenshot of the Jordbrugens Rådgivningscenter website, featuring a header with the Jordbrugens Rådgivningscenter logo and a banner about "Håndbog for Jordbrugens planterøntekniske og naturgenetiske teknikker i Danmark 2004-2005".



- **Brugere**

- Universiteter / forskning
- Planteforædlere





- **Brugere**

- **“New players”**



- **Lokale producenter – “håndværksmad”**
 - **Slow Food bevægelse / økologer**
 - **“New Nordic Food” – segmentet (Nordisk oprindelse)**





- **Brugere**

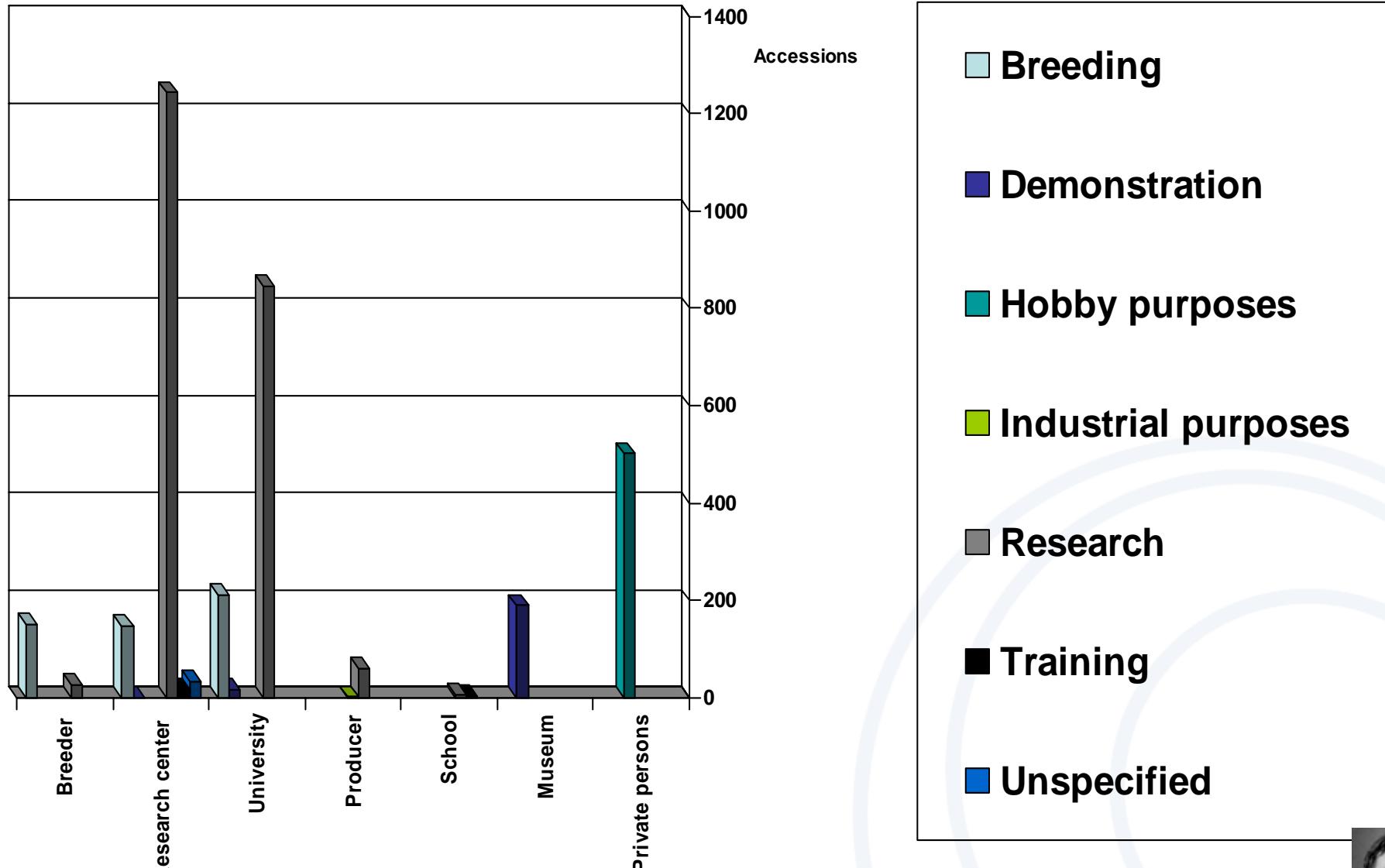
- **“New players”**

- **Museer, botaniske haver**
- information/formidling
 - **Generel offentlighed**
- private





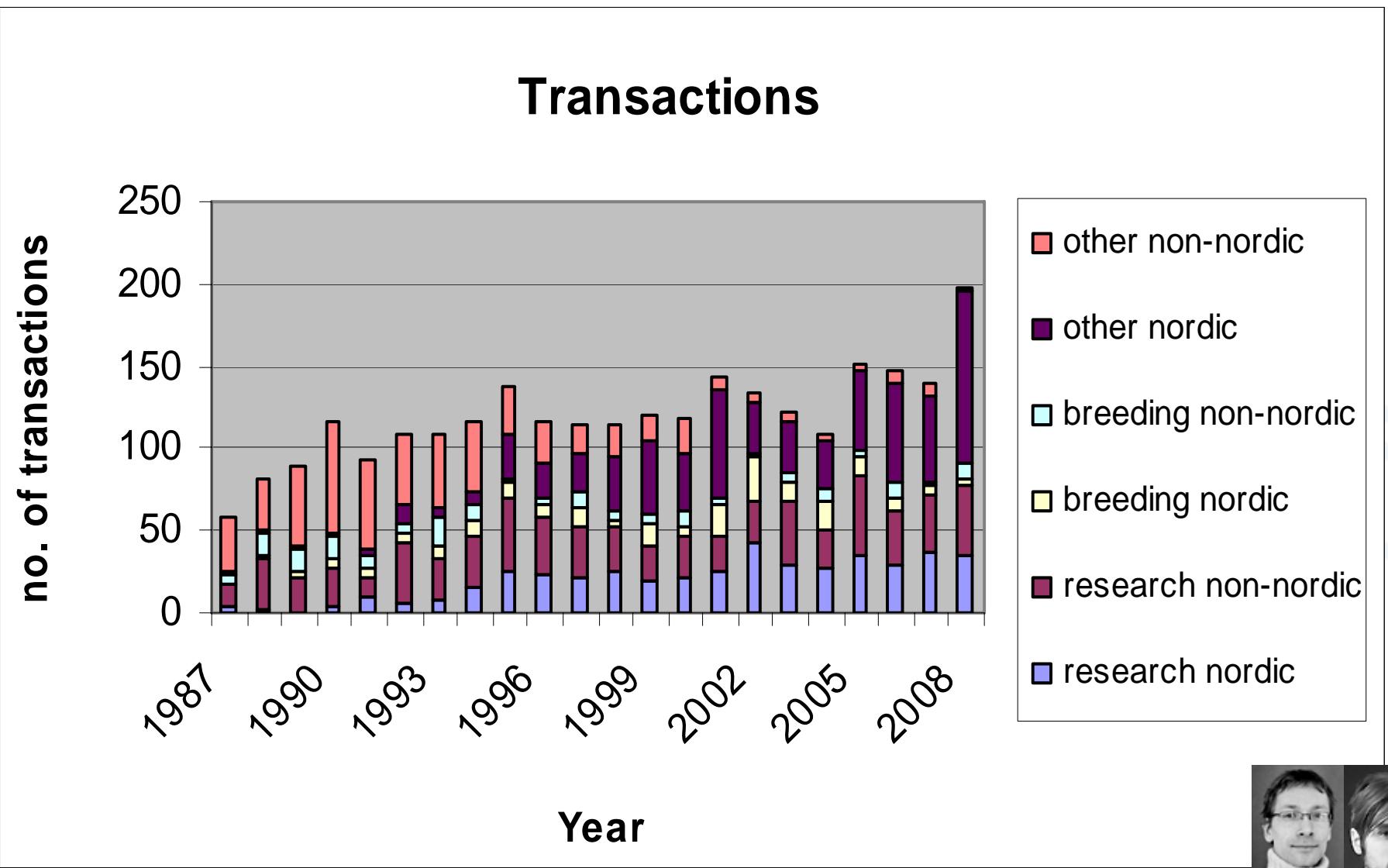
Requests 2009



2009: 212 requests - 3465 accessions



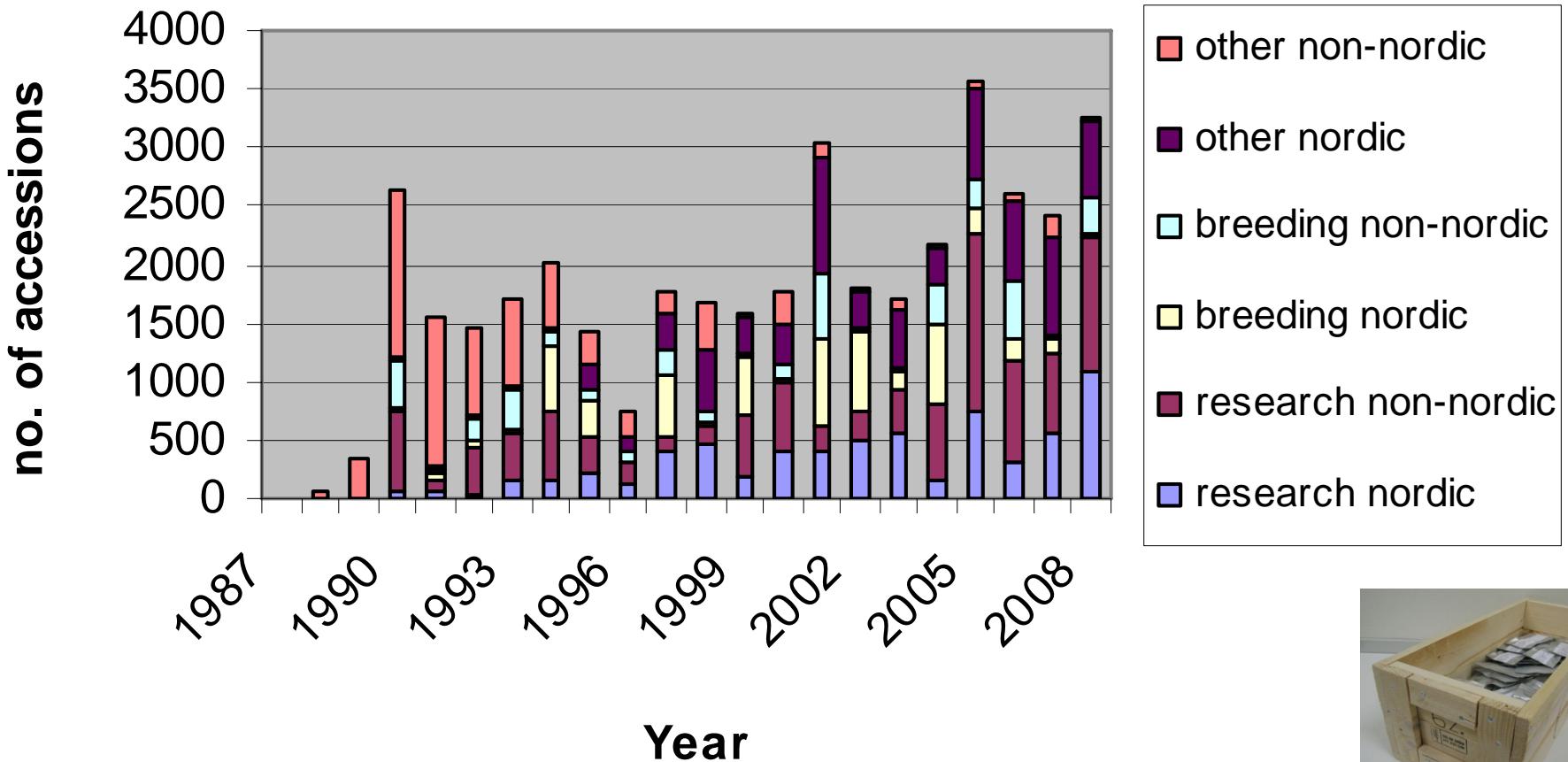
Transactions - how many order seeds -





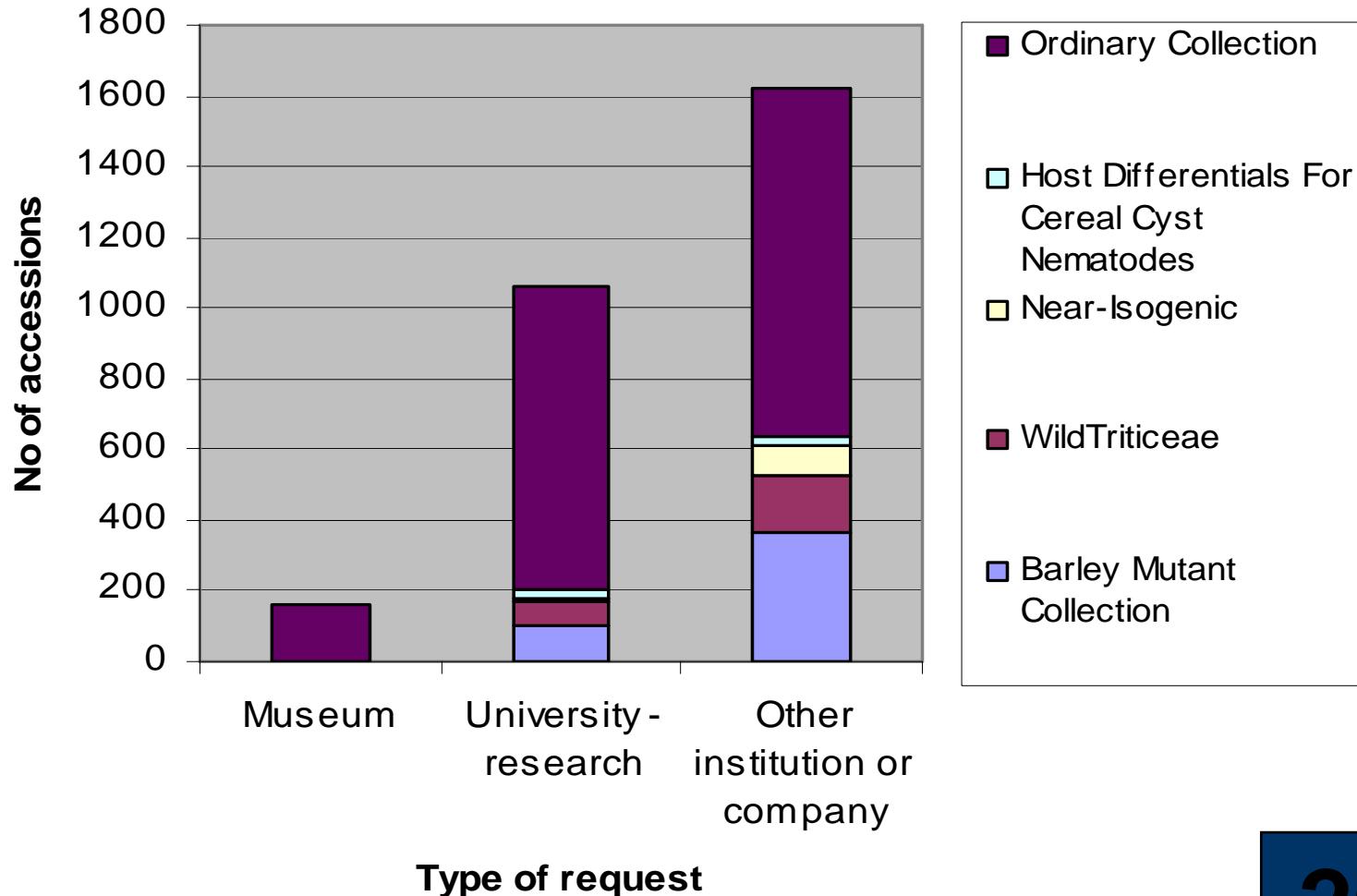
No of accessions - how many genotypes -

Distribution of accessions





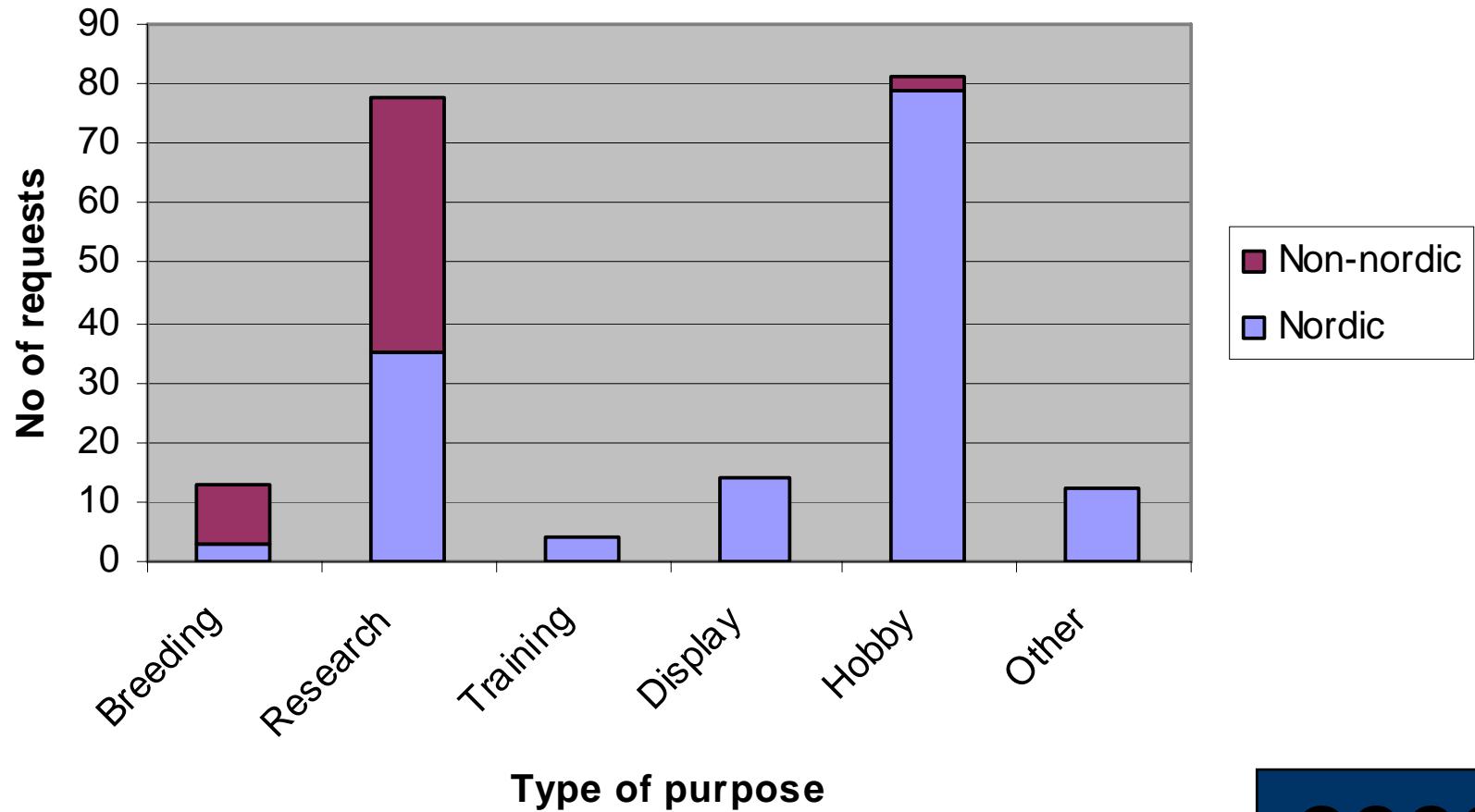
Use of special collections 2008



2008



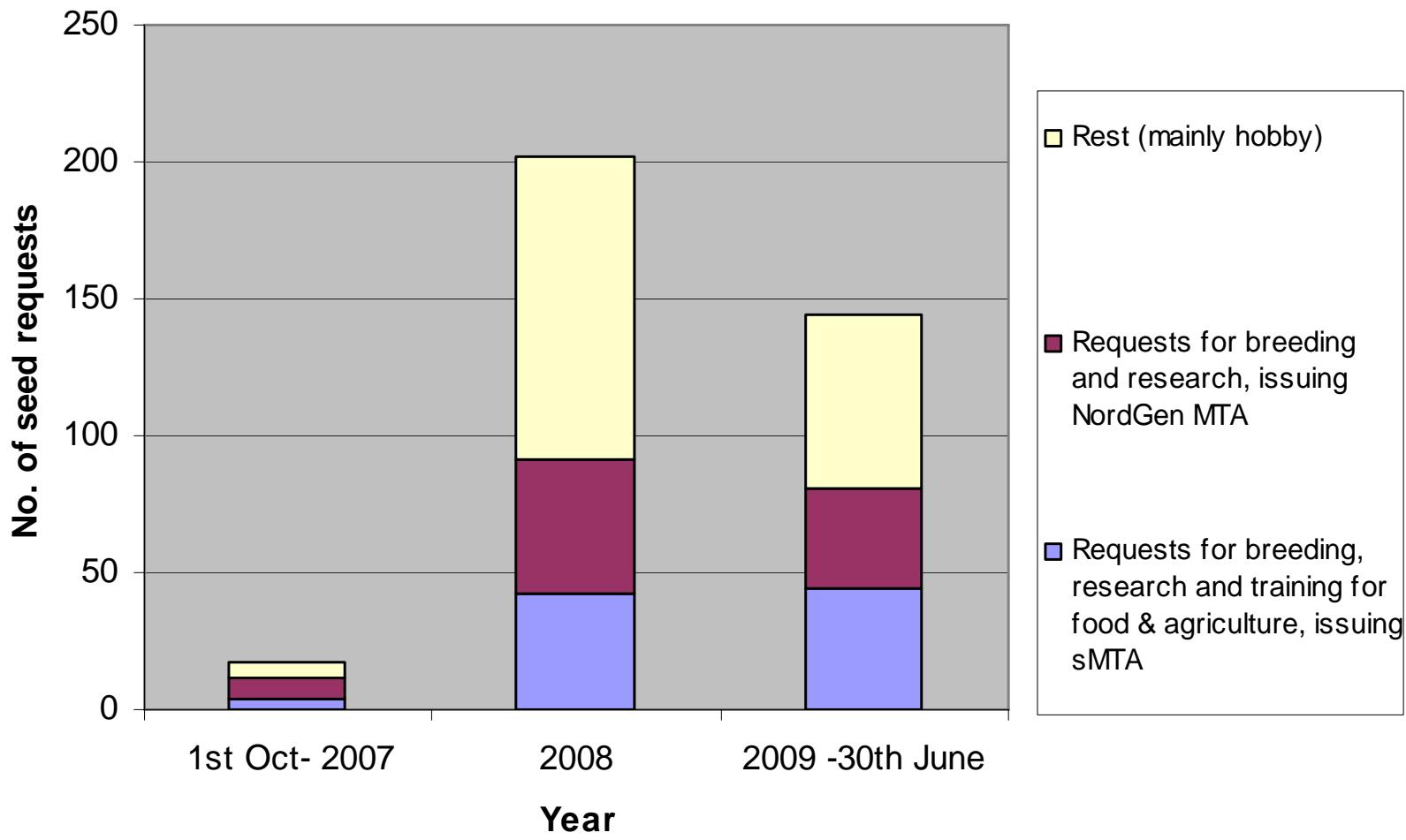
Seed requests 2008 - purpose



2008

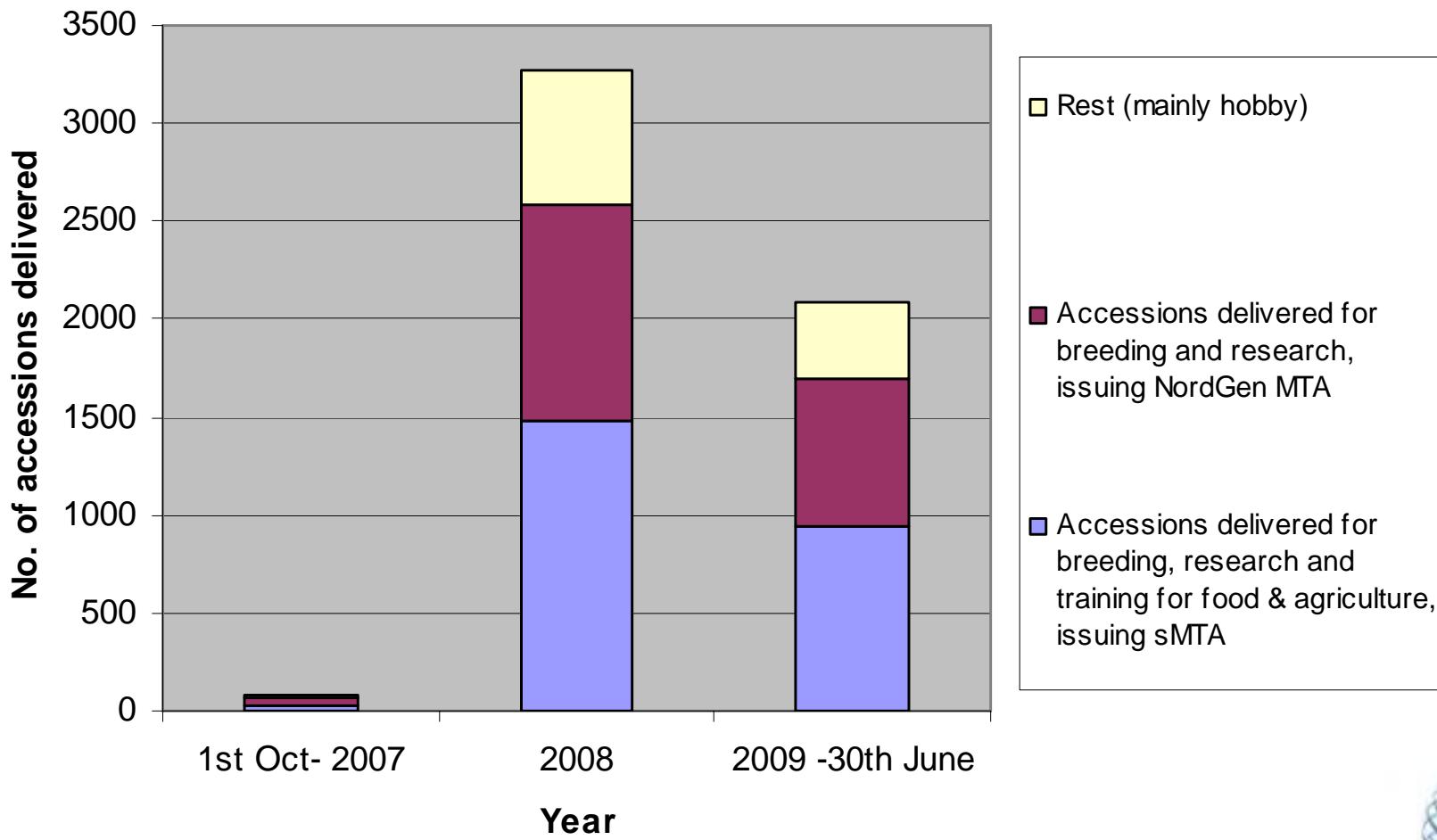


MTA handling 2007-2009: Seed Requests





MTA handling 2007-2009: Acessions delivered





- Hvordan øger vi brugen af PGR? – how to increase



- NordGen spænder MEGET bredt....
- Meget omfattende mandat - udfordrende
 - positive og negative konsekvenser... -





- forædling



- forskning



- genbanker

- forskning
 - forædling
 - genbanker
- 



SLU – Nordisk undersøgelse

- “forædlingslandskabet” i Norden
- Public-Private Partnership
- NordGen sekretariat
- Udnytte eksisterende strukturer
- Koble forskning-forædliging-genbank sammen
- Opbakning fra industrien, forskningen og NordGen





- **FUNDING...**
- Nordisk ministeriel arbejdsgruppe;
bæredygtig finansiering af:
 - NordGens genbank & regenereringsfaciliteter
 - NordGens laboratorie
 - NordGens bygninger
 - Kobling til brugere, - herunder PPP
 - Personale, - herunder 8-års regel
- 15 Maj 2010
- Venter med spænding!!! (2010 “mellem-år”)





- Igangværende initiativer

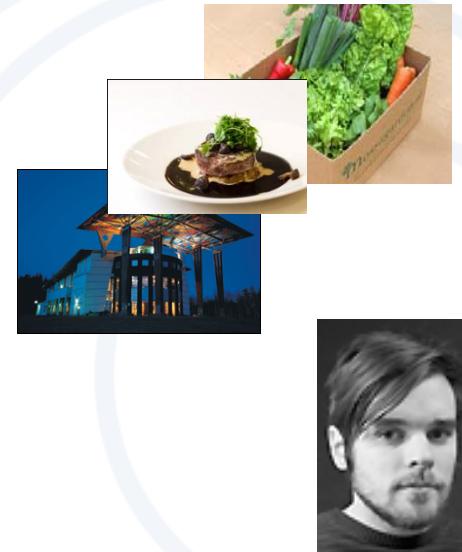
- Historical Gardens

- Collaboration with museums and similar organisations. Ex.: GI Estrup- DK
- Display gardens of old historical cultivars
- Different times and types
- Meet interest from public



- Rational service
for public!!

- Food Network
 - Multiplication/production of relevant crops, collaboration with “Hvilan” gardening school
 - Testing at selected restaurants
 - Testing at Nordic Food Lab
 - Data back to NordGen
- Providing relevant information



- NMR Globaliserings program -Climate change program:
- Joined project:
Sustainable primary production in a changing climate
 - Network, coordinated by Risø, Rikke Bagger Jørgensen (DTU,KU-Life,SLU,MTT, Sejet, Nordic Seed,Graminor, Boreal,NordGen)
 - Plant health
 - Conservation, adaptation and utilization of genetic resources
 - Adaptation and mitigation in the cereal production system
 - Sustainable biomass production
 - Model crops barley & oilseed rape



Joined NordGen – ECPGR – MTT – SLU Workshop on Pre-breeding in Cereals 24-25th November 2009 – Alnarp

- applied for follow-up meeting autumn 2010


 NordGen
 Nordic Genetic Resource Center

We are pleased to invite you to participate in the conference "[Joined SLU - ECPGR Pre-Breeding in Cereals Workshop](#)"

Agenda:

24/11

12.00 Lunch and Welcome

SESSION I – Pre-breeding in Cereals - status

13.00 Global perspective - needs & gaps
Pre-breeding activity - status

SESSION II - Examples on existing, functioning Collaborations

14.00 Regional & Global system, ICARDA's

Push-pull research & public-private collaboration

Breeding for abiotic stress tolerance

The Vavilov system - Russia

Molecular genetics perspective

Deployment of landraces

SESSION III - Breeding goals & needs - from plant breeding industry, science and market perspectives

16.30 Role of private breeding companies - possibilities & limitations

Adapting to climate change

Yield increase

Quality improvement

Disease resistance

Regional needs

Applying wild relatives

19.00 Conference dinner



Alnarp, 01st October 2009

Practical information:

Place and time:

Alnarp, Sweden, [Map](#). Tuesday 24 November – Wednesday 25 November 2009.

Registration:

[Before 22 October](#) by sending e-mail to kolbrun.arnadottir@nordgen.org

Conference fee, incl. 1 night at First Hotel Garden: 2500 SEK

Conference fee, incl. 2 nights at First Hotel Garden: 3500 SEK

Conference fee, no hotel incl.: 1500 SEK

Travel:

Participants arrange their own travel. Nearest airport is the Copenhagen/Kastrup Airport. [Ground trains](#) that will take you straight to Malmö central station are conveniently located at the airport.

Conference language:

English

Further information:
[Kolbrún Árnadóttir](#) tel: +46 (0)40 53 65 41 , or
[Morten Rasmussen](#) tel: +46 (0)40 53 65 56



Agnese Kolodinska
 Morten Rasmussen
 Marja Jalli MTT
 Anders Nilsson SLU
 Kolbrún Árnadóttir

NMR Baltic Sea Strategy:

Network of institutions for

- management,
- conservation and
- use

of plant genetic resources (PGR)
in the Baltic Sea Region
under changing climate conditions

Aiming at EU-funding



WG activity - Relevant data:

- Disease resistance reaction in wheat to Yellow Rust, *Puccinia striiformis*
- Disease resistance reaction in wheat and barley to Stem Rust, *Puccinia graminea*

| Yellow rust resistance reaction: R= resistant, I=intermediate, S=susceptible | | | | |
|--|---|---------|--------------------------|------------------------------|
| Accession | Species | Origin | Isolate - new aggressive | Isolate - common NW European |
| NGB2435 | Triticum aestivum ssp. aestivum L. | Sweden | R | I |
| NGB4495 | Triticum aestivum ssp. spelta (L.) Thell. | Sweden | R | segregating |
| NGB4496 | Triticum aestivum ssp. aestivum L. | Sweden | R | R |
| NGB6683 | Triticum aestivum ssp. aestivum L. | Sweden | R | R |
| NGB6702 | Triticum aestivum ssp. aestivum L. | Sweden | I | I |
| NGB7474 | Triticum aestivum ssp. aestivum L. | Sweden | R | I |
| NGB7475 | Triticum aestivum ssp. aestivum L. | Sweden | I | R |
| NGB7476 | Triticum aestivum ssp. aestivum L. | Sweden | I | R |
| NGB9691 | Triticum aestivum ssp. aestivum L. | Sweden | R | R |
| NGB9700 | Triticum aestivum ssp. spelta (L.) Thell. | Denmark | R | R |
| NGB13041 | Triticum aestivum ssp. aestivum L. | Sweden | R | R |
| NGB13446 | Triticum aestivum ssp. aestivum L. | Denmark | R | I |
| NGB15070 | Triticum aestivum ssp. aestivum L. | Denmark | R | R |
| NGB15072 | Triticum aestivum ssp. aestivum L. | Denmark | R | R |
| NGB15076 | Triticum aestivum ssp. aestivum L. | Denmark | R | segregating |
| NGB16679 | Triticum aestivum ssp. aestivum L. | Denmark | R | R |
| NGB16909 | Triticum aestivum ssp. aestivum L. | Denmark | R | R |
| NGB17135 | Triticum aestivum ssp. aestivum L. | Finland | R | segregating |
| NGB11486 | Triticum aestivum ssp. aestivum L. | Sweden | R | I |





- Og derudover:



Nordic Seminar on In Situ conservation

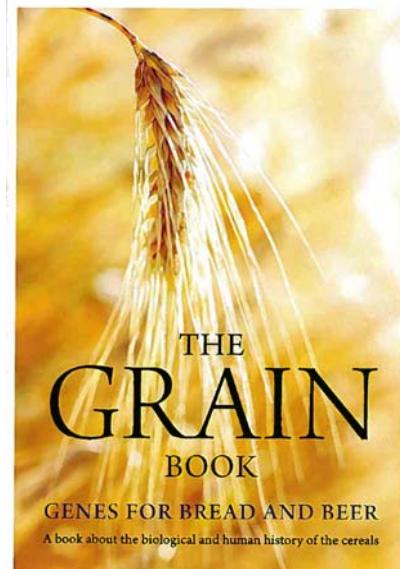
Autumn 2010 – more to be announced....



Erik Persson

Nordic Cereal Book – NMR

- Åsmund Bjørnstad
- Origin of Nordic Cereals, genetics, cultural history, technology, production & use
- ready winter 2010



Åsmund Bjørnstad
Agnese Kolodinska
Morten Rasmussen



Molecular diversity of *Angelica archangelica*



- Was Angelica brought to the North Atlantic Islands during settlement or was only native material utilized?
- Is the sweet Norwegian 'Vossakvann' genetically distinct from other populations?
- Populations from Greenland, Iceland, Faroe Islands, Finland, Norway and Sweden analysed by molecular markers
- Collaboration between Icelandic Agricultural University, Icelandic Genetic Resource Council, NordGen and University of Bergen



Magnus Göransson

Brassica project

Domestication and diversity of cole crops

- Collaborative project with Bioversity International, Catania University, Swedish Agricultural University and NordGen
- Linguistic indications of cultivation and use of Brassica plants
- Cultivation practice of leafy kales in Southern Italy
 - (on farm conservation)
- Characterisation of genetic diversity of leafy kales grown in Southern Italy
- Genetic and phenotypic diversity of leafy kales
- Introgression between cultivated and wild brassica species



Gert Poulsen

AEGIS

A European Gene Bank Integrated System

- A virtual gene bank for Europe – join forces
- Identify unique material & share responsibility
- Agreed minimum standards - quality assurance system
- Apply same sMTA
- Internationalization & Interdependency
- Application for FP7
- European collaboration for many years to come



Gert Poulsen



Collection mission of relic species

Denmark 2009

- 3 locations: Bornholm, South Sealand, Mols
- Collaboration with Bernt Løjtnant
- Cultivated plants, no longer in use, surviving at historical sites
- Spices, herbs, medicinal plants.....



Svein Solberg



- INTERNATIONAL PROJECTS
- SADC collaboration
 - Gene bank & capacity building Southern Africa
 - End 2010
- EAPGREN collaboration
 - Gene bank & capacity building Eastern Africa
 - End 2011(?)





SIDA project Central Asia

- Gene bank building
- Staff training & education
- Lab development
- Kyrgyzstan
- Tadzhikistan



Alfia Khairullina

Thank you for your attention!

Morten Rasmussen





ITPGRFA - Dec 2009

