

AnGR BIOBANKS - GENOMICS RESEARCH AND BREEDING PERSPECTIVE

Eli Grindflek
NORSVIN,
Norway



NORSVIN:

norsvin

- ❑ Founded in 1958 as a co-op by the Norwegian pig producers
- ❑ Production of 1,5 mill slaughter pigs per year in Norway for the domestic market only but much more in other countries:
 - + local AI stations etc: Sweden, Lithuania, Poland, USA
 - + Long term supply: Finland, Iceland, Spain, Estonia.....
- ❑ Norsvin annually reinvests approx. 30% of the annual financial turnover into R&D



Foto: Jens Haugen

Norsvin – data – flow:

norsvin

Boar testing station (3500/y)



- Nucleus herds
- Multipliers
- Slaughter production
- Herds in other countries

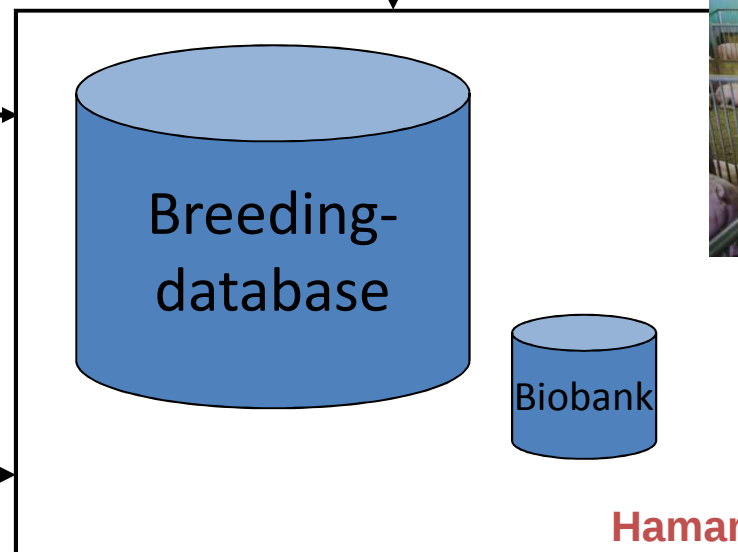


AI-station



400 boars/y

AI-stations –
other countries

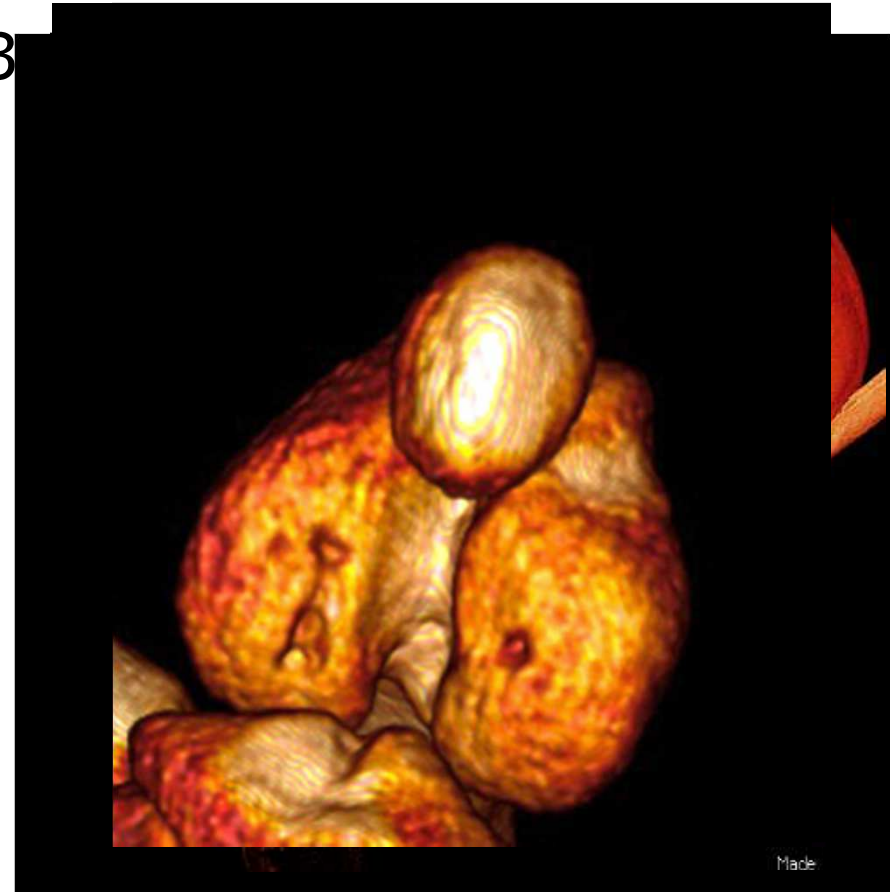


Breeding-advisors/
Technicians

CT (computer tomography)



- 1100 pictures per animal
- 24 animals per day
- 3



Linking phenotypes with genotypes:

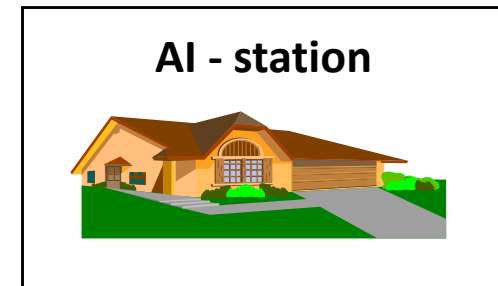
Biological sampling in Norsvin:



All boars (3500/year)
since 2002
-For all final selection
Candidates from 1990's
(paternity testing/Hal)



From sows in research-
projects – since 1990's



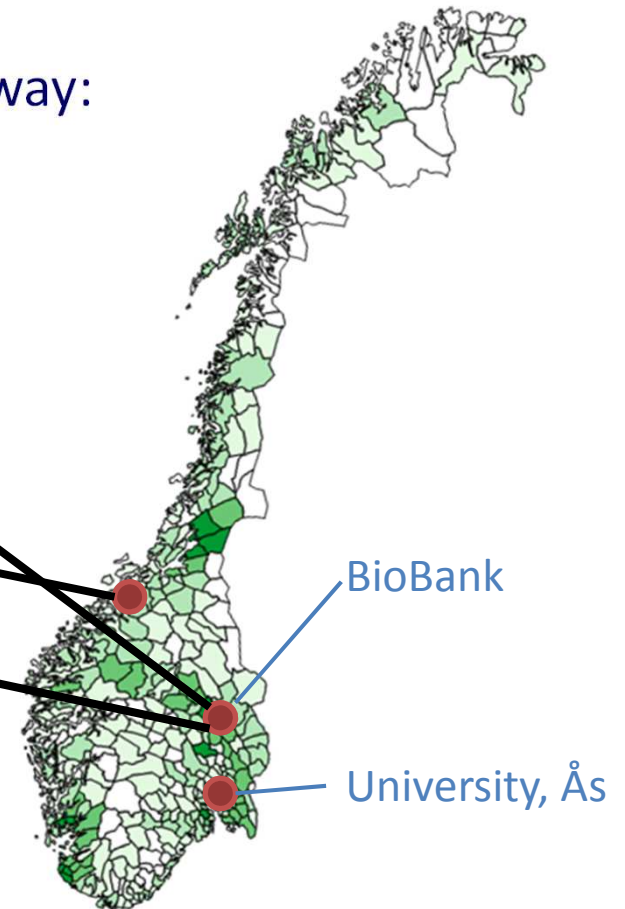
From all AI-boars since
2000 – a selection of boars
since 1985



From slaughter house
in research-projects

BioBank Ltd

- BioBank Ltd was established as a national biobank for livestock and fish in 2005,
By the three main Breeding Companies in Norway:



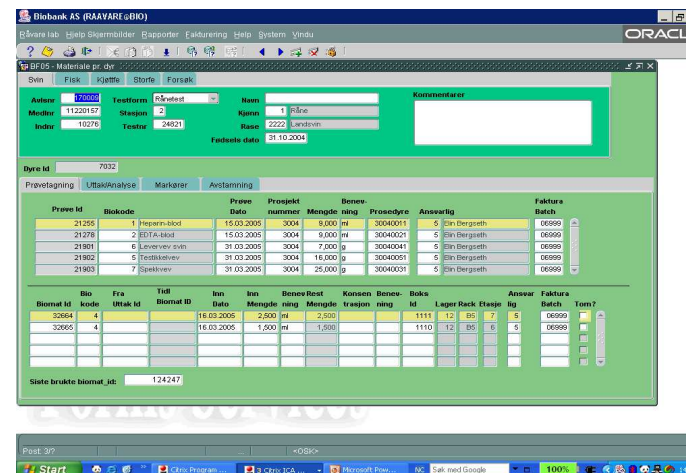
**Sampling +
optimize/
making protocols
etc.**

Transport

Reception and Registration



Foto: Tore Mælumsæter



norsvin

Sample
preparations



Storage



The BioBank storage - status 2012:

- > 180.000 samples
- > 30 different materials
- Different species:



Ordering samples from BioBank:

Identify
position – pull
out



DNA extraction



Optimisation of
extraction for
sample type and
requirements



CUSTOMER



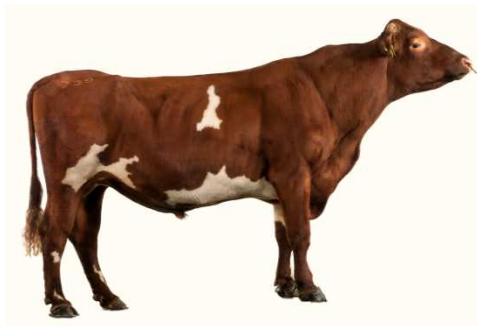
DNA Quality/Quantity -
check



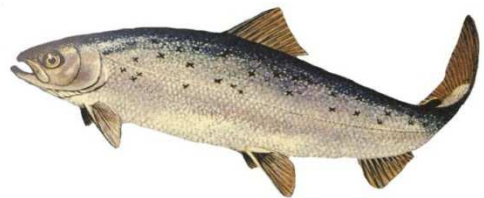
1. Biobank material for use in the breeding schemes directly:



- ☐ Paternity testing of final selection candidates
 - AI – boar candidates (N=500) + nucleus herds
- ☐ Some marker-genotype frequencies on AI-candidates – for observation.



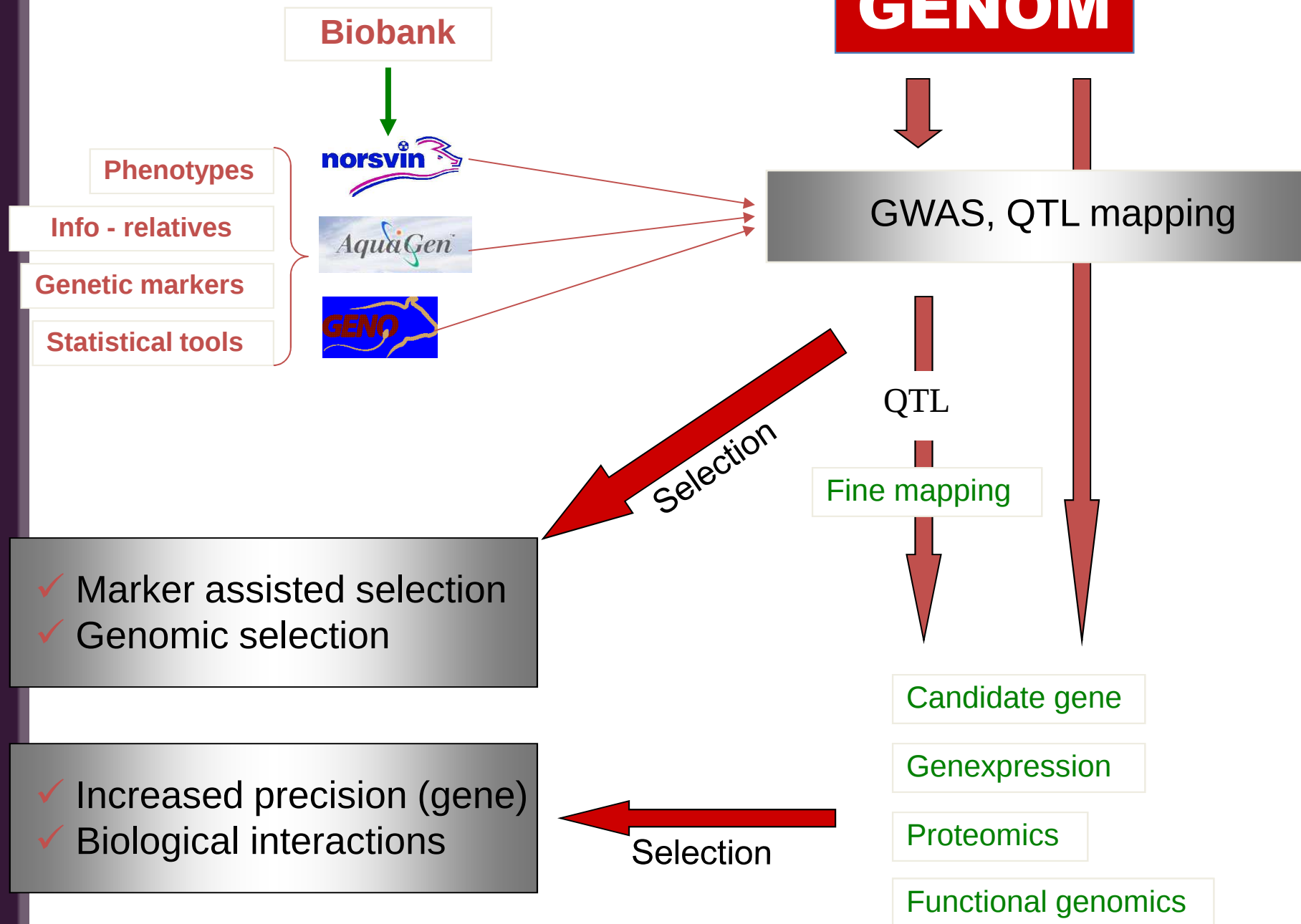
- ☐ Paternity testing of final selection candidates (N=300)
- ☐ Some marker-tests on AI-candidates (N=1000)
- ☐ 800K/250K/50K – genotyping for genomic selection



- ☐ Paternity testing of selection candidates (this year)
- ☐ IPN – marker-test on selection candidates (N=10-20 000)

2. Biobank material for research:

norsvin



CATTLE

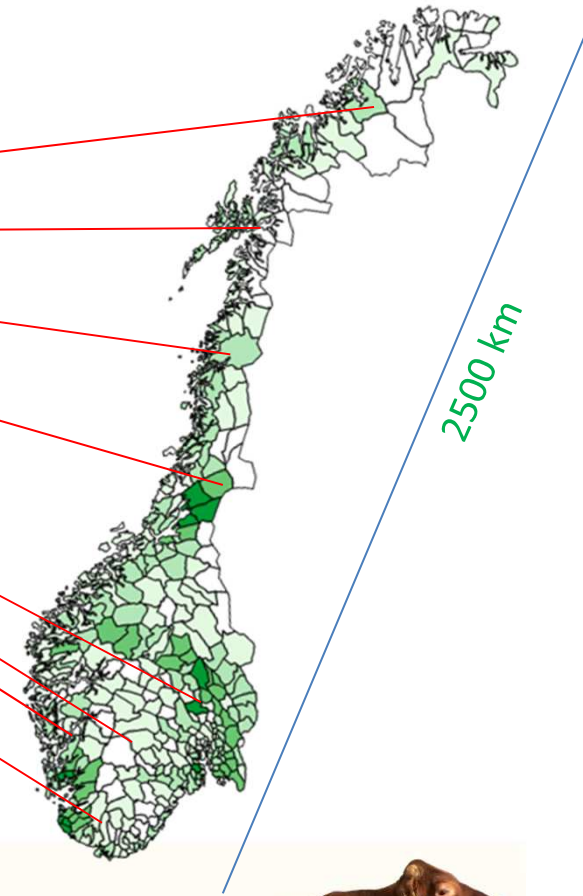
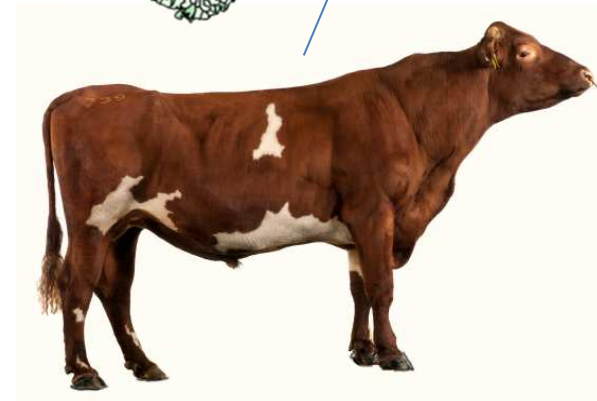
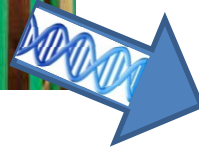
norsvin

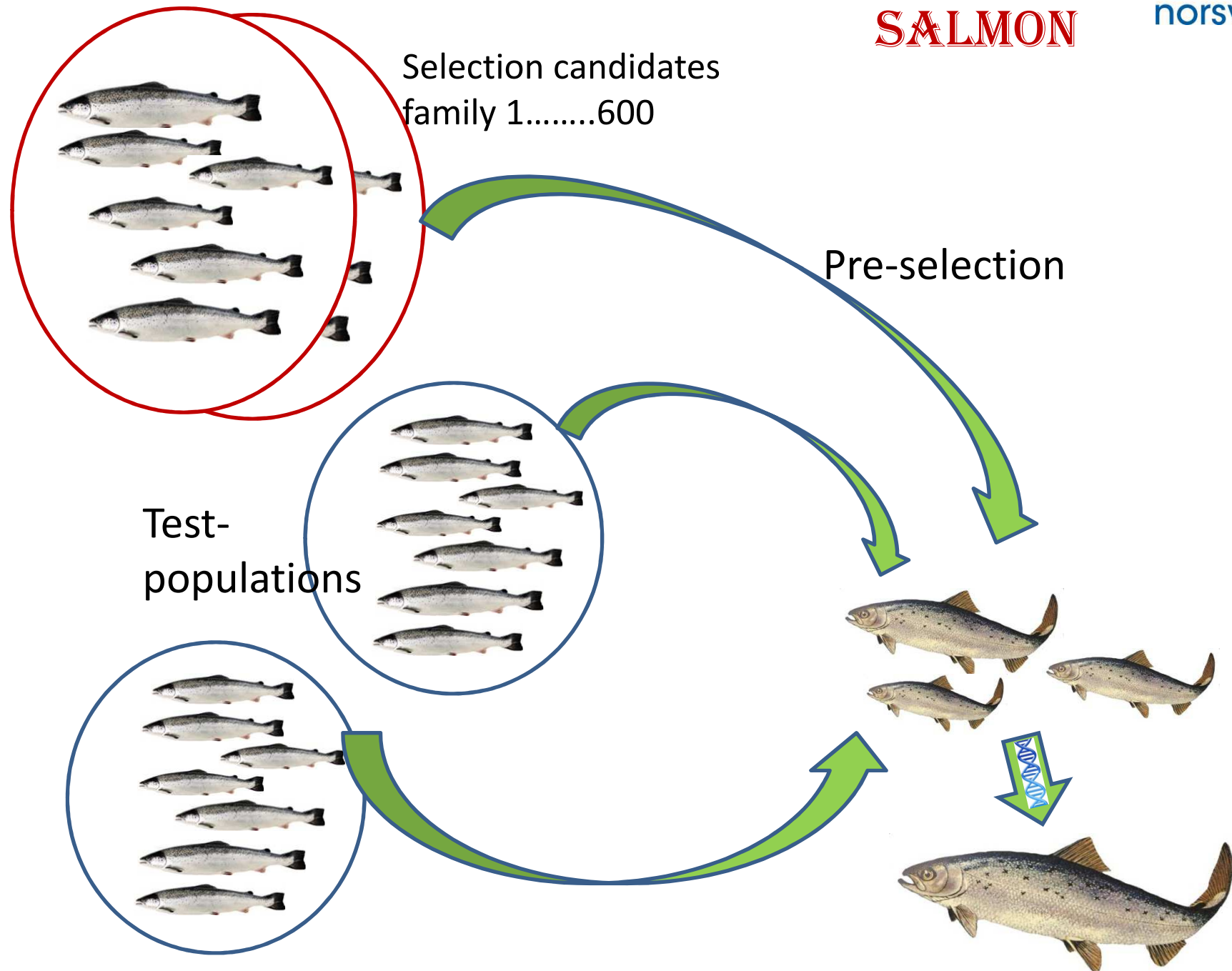


Pre-selection



Test station



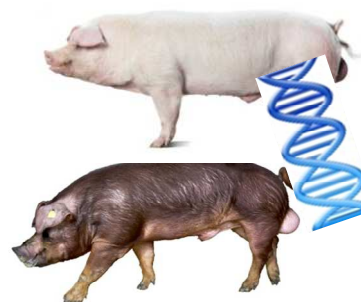


PIG

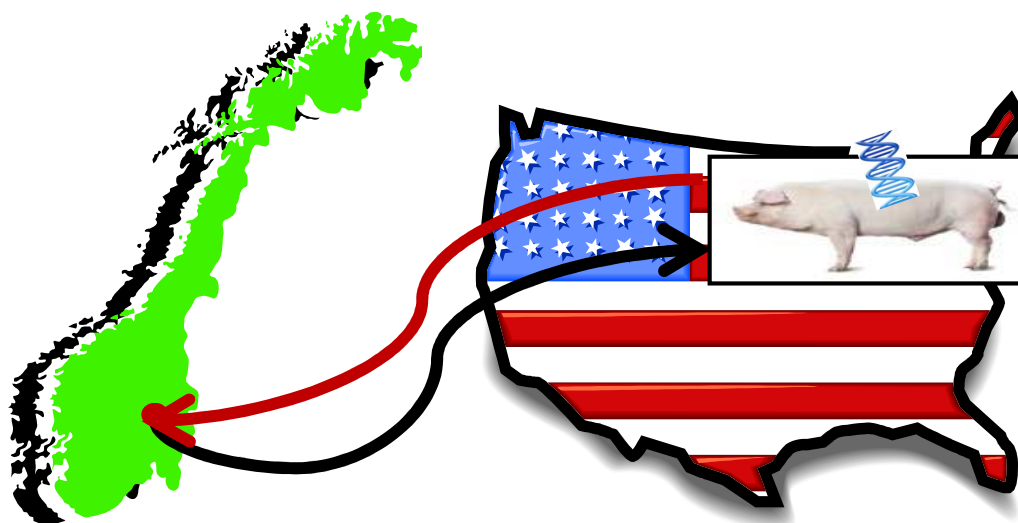


Gentypes from
mother traits

SNP-
effect



Boar test station



Thank you for your attention !

