

Advancing genomic evaluations



Relate DNA
to performance

A**C**CG



A**T**CG



Reference population

- Knowledge of the association between DNA and performance enables genomic predictions
- Including cows in the reference population increases the accuracy of such predictions:

Trait accuracy	Parent average	Reference population	
		Sires only	Sires & cows
Milk	0.61	0.68	0.73
Fat	0.43	0.56	0.62
Protein	0.51	0.64	0.68

Minimize risk

Herd size
(incl.
heifers)

Minimum
number of
bulls

51-100

7

101-150

8

151-200

10

201-250

11

251-300

12

301-350

13

Bull team reliability $\geq 95\%$

Other benefits of genomics

Determine
parentage

Determine breed
composition

Mating
advice

Monitor major
genes

Traceability

Monitor lethal
genes

DNA-based
registrations

Monitor
inbreeding



Take home messages

- Genomics increase EBI reliability
- All the benefits of genomics can be achieved through DNA calf registration