Pedigree verification by use of genotypes – results from Nordic beef

NAV workshop –September 2024

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NAV communication

Verification of the pedigree

In October 2017 verification on SNP started up

Microsatellite are still used but decrease all the time in numbers

Follow the ICAR guidelines

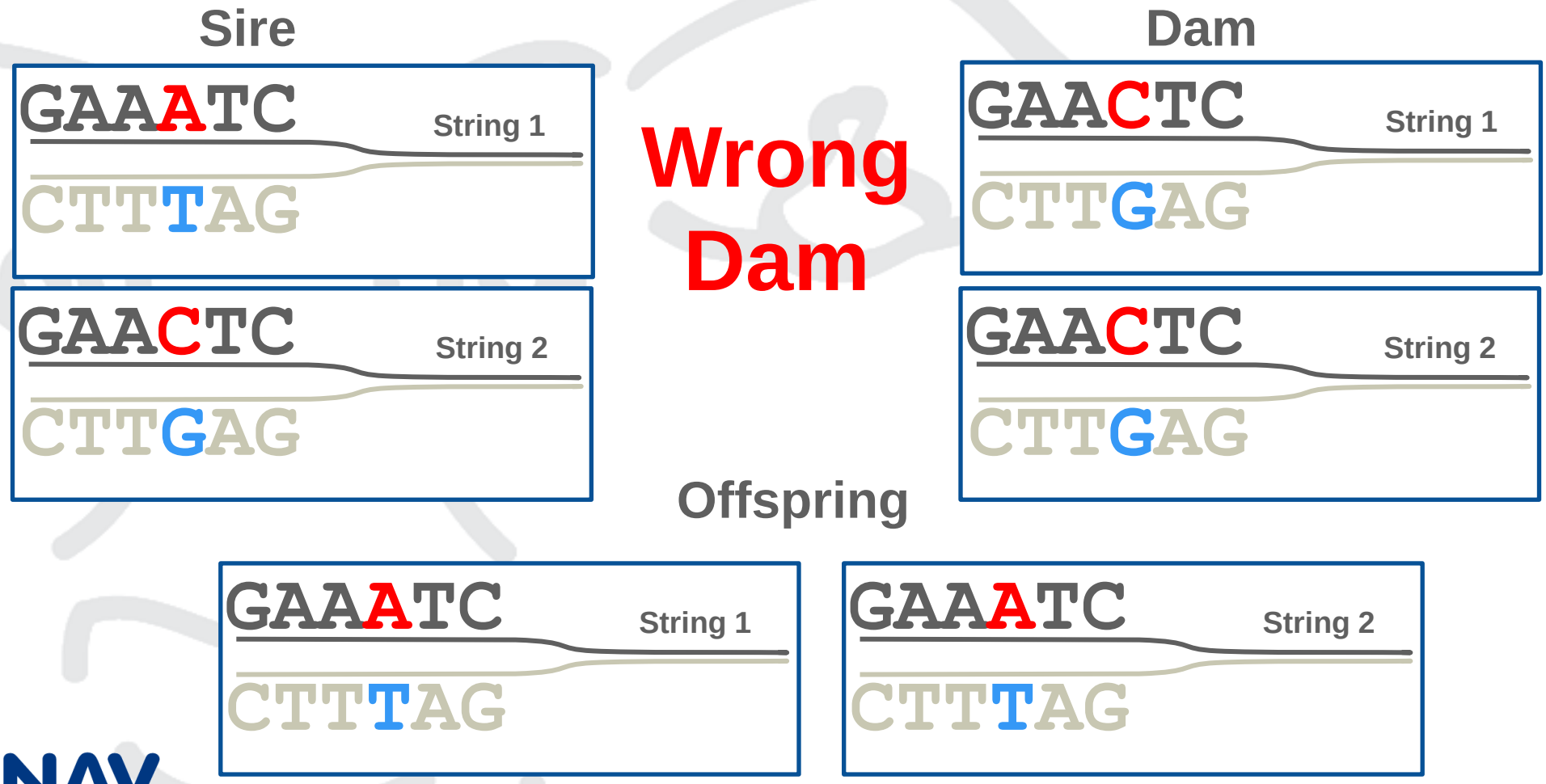
- Test on minimum 196 SNP's (ICAR), but often more
- When searching for a sire and MGS verification is done on 554 SNP's for sire and 875 SNP's for MGS
- All three countries have ICAR accreditation

Very reliable method

What can we verificate

- Need SNP's from the involved animals
- Confirm only pedigree from animals with a SNP
- Three ancestors can be confirmed
  1. Sire
  2. Dam
  3. Maternal grand sire

How does SNP verification work?



Pedigree mistake in Nordic beef - DNK

First status*

	AAN	BAQ	CHA	HER	HLA	LIM	SIM	Total
DNK	474	86	169	441	133	836	562	2701
Accepted	96,0%	94,2%	97,0%	95,7%	95,5%	95,7%	96,4%	95,9%
Rejected	4,0%	5,8%	3,0%	4,5%	4,5%	4,3%	3,6%	4,1%

Current status*

	AAN	BAQ	CHA	HER	HLA	LIM	SIM	Total
DNK	474	86	169	441	133	836	562	2701
Accepted	98,7%	97,7%	97,6%	98,4%	98,5%	98,4%	98,6%	98,4%
Rejected	1,3%	2,3%	2,4%	1,6%	1,5%	1,6%	1,4%	1,6%

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*Timeperiode for genotype: Aug 2022 – Aug 2024

Pedigree mistake in Nordic beef - FIN

First status*

	AAN	BAQ	CHA	HER	HLA	LIM	SIM	Total
FIN	1258	123	1212	1227	3	760	1399	5982
Accepted	91,0%	87,0%	94,5%	96,0%	100,0%	88,2%	88,4%	91,7%
Rejected	9,0%	13,0%	5,5%	4,0%	-	11,8%	11,6%	8,3%

Current status*

	AAN	BAQ	CHA	HER	HLA	LIM	SIM	Total
FIN	1258	123	1212	1227	3	760	1399	5982
Accepted	96,6%	93,5%	98,5%	99,1%	100,0%	95,0%	95,0%	96,9%
Rejected	3,4%	6,5%	1,5%	0,9%	-	5,0%	5,0%	3,1%

NAV *Timeperiode for genotype: Aug 2022 – Aug 2024

Pedigree mistake in Nordic beef - SWE

First status*

	AAN	BAQ	CHA	HER	HLA	LIM	SIM	Total
SWE	1206	144	1804	3062	36	1137	1578	8967
Accepted	97,0%	96,5%	94,9%	97,6%	100,0%	98,2%	97,1%	97,0%
Rejected	3,0%	3,5%	5,1%	2,4%	-	1,8%	2,9%	3,0%

Current status*

	AAN	BAQ	CHA	HER	HLA	LIM	SIM	Total
SWE	1206	144	1804	3062	36	1137	1578	8967
Accepted	97,1%	97,2%	97,2%	98,5%	100,0%	99,0%	98,2%	98,1%
Rejected	2,9%	2,8%	2,8%	1,5%	-	1,0%	1,8%	1,9%

NAV *Timeperiode for genotype: Aug 2022 – Aug 2024

Bonus with verification of pedigree by genotype

Do it the easy way – Use DNA ear tags

Advantages of a genomic test

- **Verification of the pedigree including the maternal sire**
- **Search for possible pedigree**
- **Genomic values**
- **Monogenetic traits**

Joint benefit through a better reference population

Thank you!