Sheep Ireland
www.sheep.ie

# Parentage & Scrapie Update

eagasc
Agriculture and Food Development Authority

# Determining Parentage

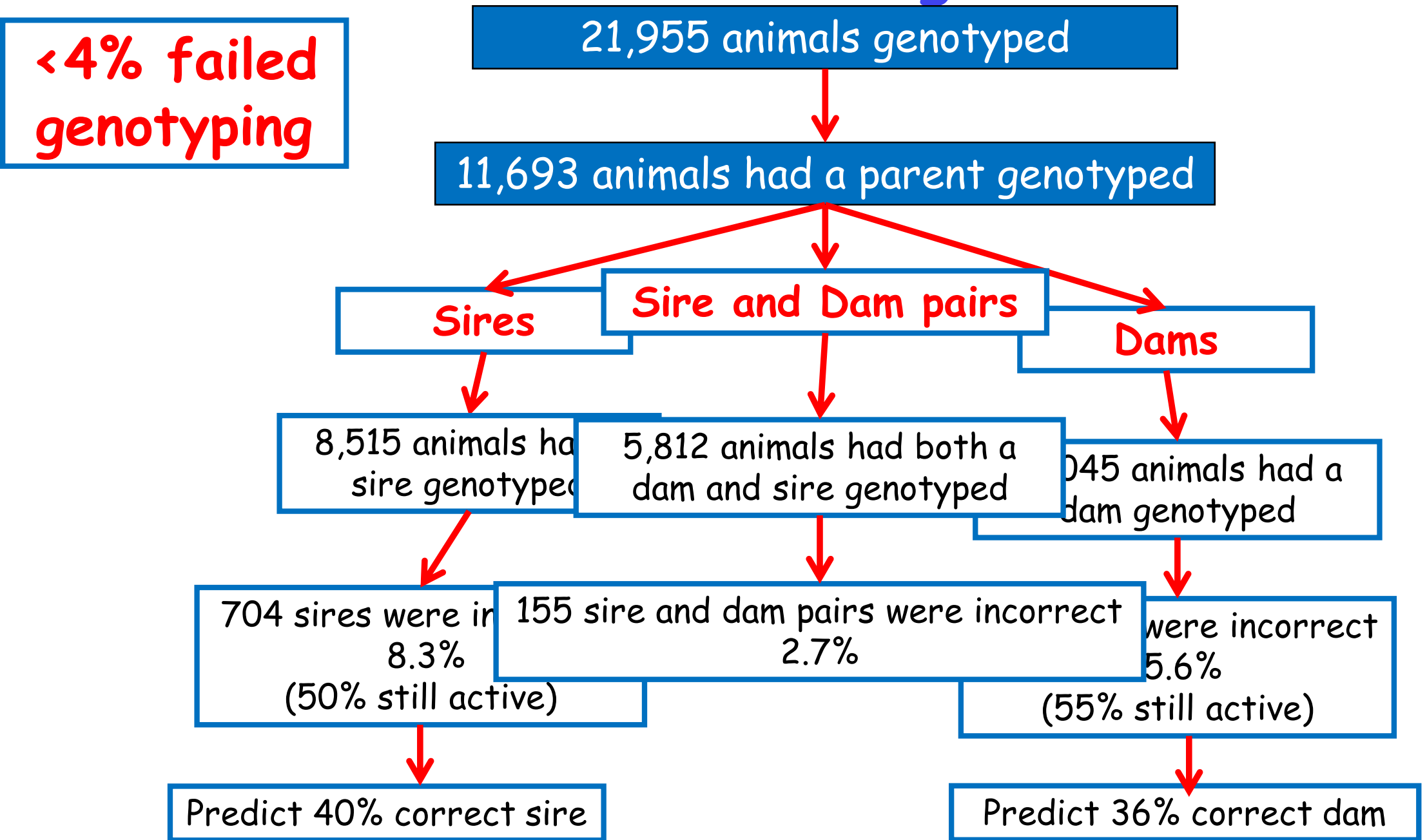
Sire

Dam

Parents must also be genotyped

Animal genotyped

# Parentage


<4% failed genotyping
21,955 animals genotyped
11,693 animals had a parent genotyped
Sires
Sire and Dam pairs
Dams
8,515 animals ha
sire genotyped
5,812 animals had both a dam and sire genotyped
045 animals had a dam genotyped
704 sires were ir
8.3%
(50% still active)
155 sire and dam pairs were incorrect
2.7%
were incorrect
5.6%
(55% still active)
Predict 40% correct sire
Predict 36% correct dam

# Parentage

- Animal can have the following parentage results:
  - Match
  - Mismatch
  - Failed call rate
  - Sire/Dam not genotyped
- Animal & it's parents need to be sampled to get a parentage result
- Predictions will be implemented
  - Where a parent can't be predicted- the incorrect parent will be removed & left blank on ancestry tree

# Predicting parents

Sire

Genotype Database

…..CGATACTCTCTA….

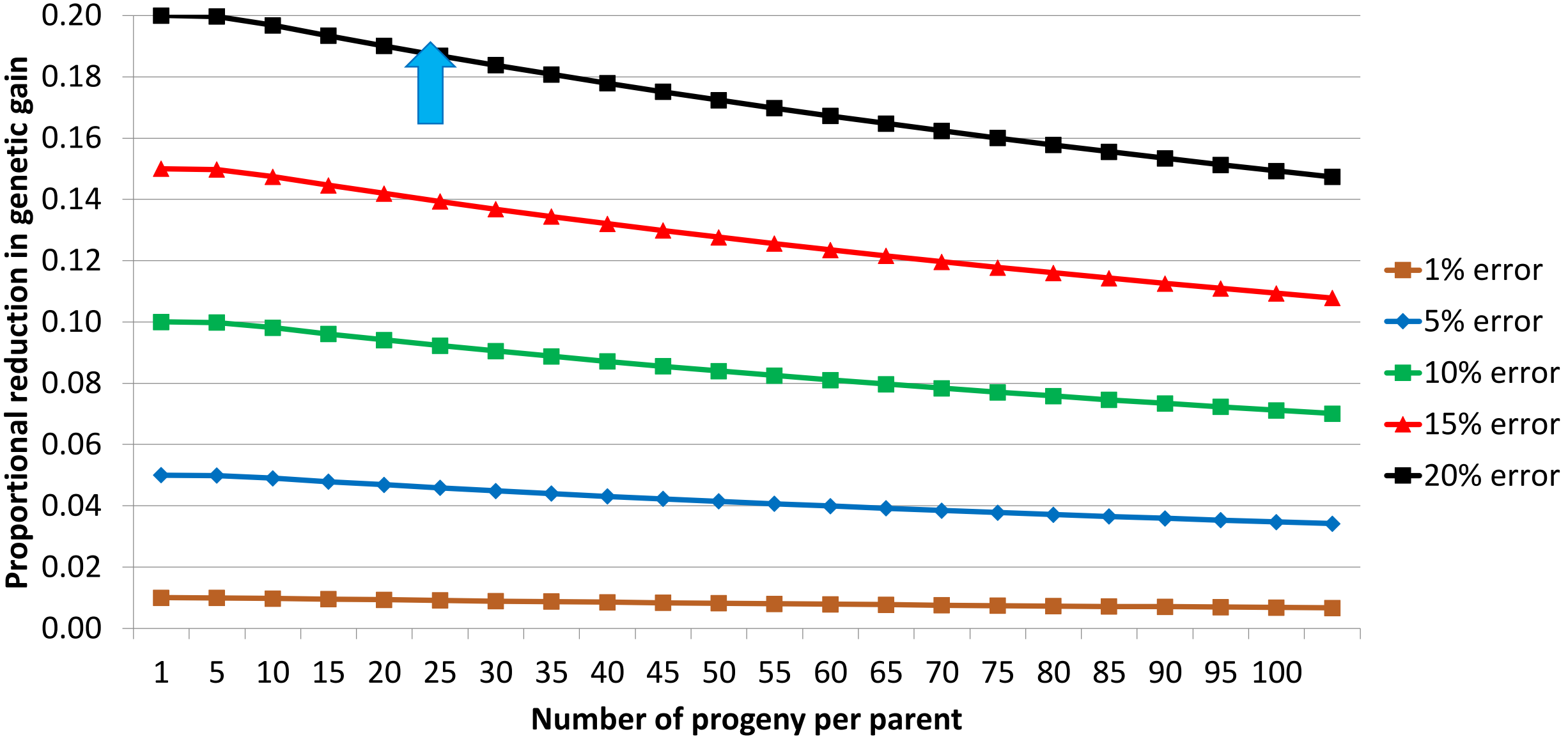
…..TTCAGTCAT….

…..GT…ATTCTGTCTT….

**What's the impact of parentage correction & errors?**

Lamb

# Impact of parentage errors - theoretical



# Impact of parentage errors – reality

# Impact of parentage errors – reality

| | Average | Range |
|---|---|---|
| **Replacement (€)** | -0.03 | -4.96 to 7.98 |
| **Acc. REP (%)** | -3 | -36 to 41% |
| **Terminal (€)** | 0.01 | -1.70 to €1.97 |
| **Acc. TER (%)** | 6 | -42 to 51 |

## Sire A

249 progeny

Dam Mismatch

Replacement Index

Was: €7.72 Acc 73%

Now: €7.76 Acc 71%

## Sire B

0 progeny – young ram

Dam and Sire Mismatch

Replacement Index

Was: €0.52 Acc 33%

Now: -€0.10 Acc 24%

## Dam A

8 progeny

Sire Mismatch

Terminal Index

Was: €0.66 Acc 49%

Now: -€0.06 Acc 38%

# Scrapie

- **5 DNA markers determine the Scrapie genotype**
  - 3 "locations"
  - 3 of the markers are tricky
  - Markers right beside each other in third "location"
- **Validation of previous samples →not consistent**
  - Genotype from SNP chip did not match gold standard 100%
- **New Lab and Chip for genotyping 2019**
  - Validation of Scrapie requisite for tender
  - Samples have been tested in 4 labs
  - Validated successfully by Weatherbys on new chip