

# Can we breed healthier sheep?

Breeding as a strategy to improve sheep health

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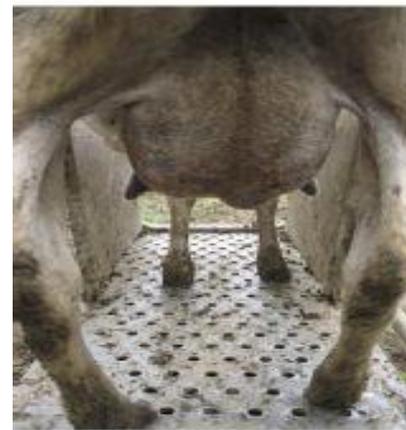
# What do we know?



Cost €5 million  
per year



Per **But...** at  
slaughter  
What is the prevalence?  
What is the cost?



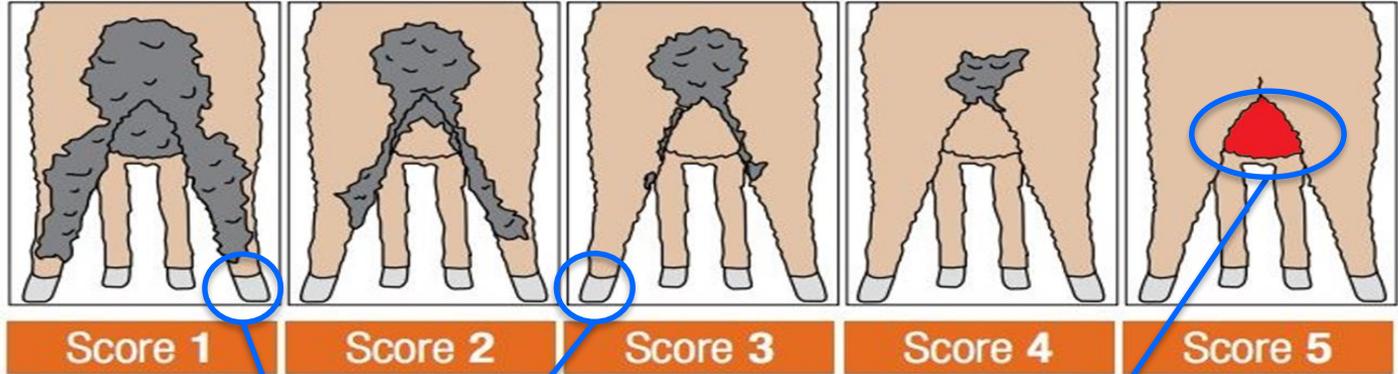
Largest  
individual  
reason for  
culling ewes

Is there a difference between lambs and adults?

## Can we actually breed for health?

# Phenotypes

## Dagginess



## Lameness

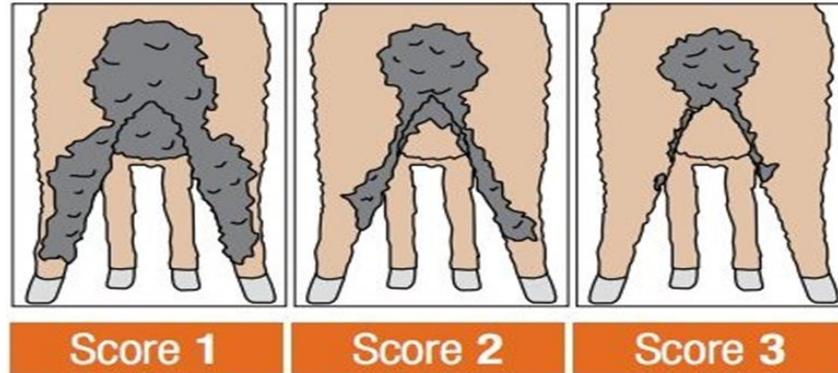
- No = not lame
- Yes = any sign of lame

## Mastitis

- No = no evidence of mastitis
- Yes = evidence of (historic) mastitis

# Current prevalence

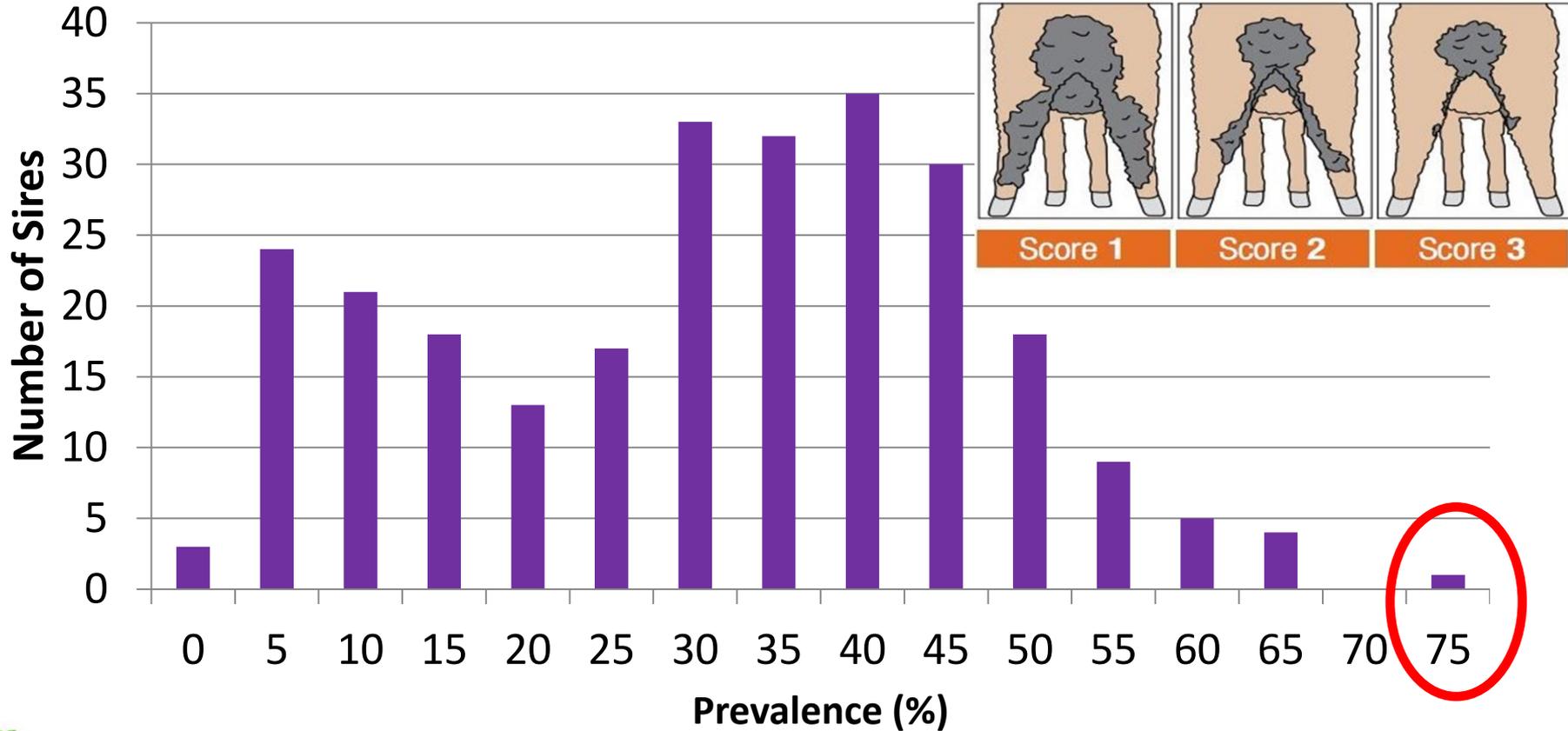
		Adults	Lambs
Dagginess	Soiled	30.2%	22.22%



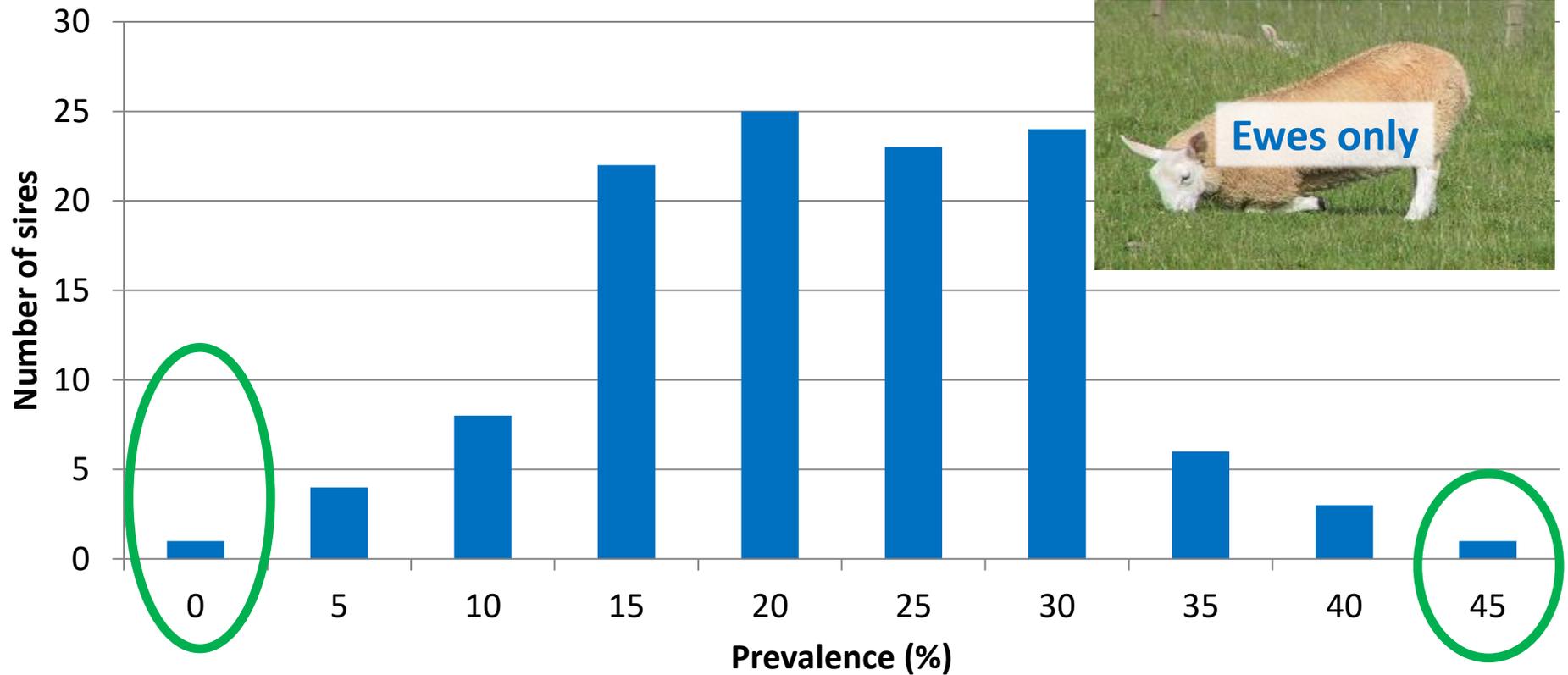
# Breeding goal

- For any trait to be included in a breeding goal – 3 criteria
  1. Socially or economically important
  2. Exhibit genetic variation
  3. Measurable on a large scale
    - Or correlated with a trait that is

# Sire prevalence - dagginess



# Sire prevalence - lameness



# Health data

39,315  
observations



264 flocks



Ewes  
8,046

Lambs  
31,269

Belclare



Charollais



Texel



5 main breeds

Suffolk



Vendéen



# Heritability estimates



Dagginess: 14% - 15%

Lameness: 6% - 12%

Mastitis: 4%



Dagginess in lambs had  
a maternal heritability  
of 5%

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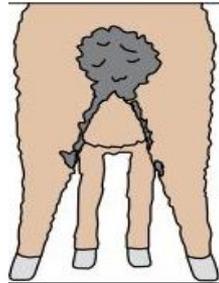
# Health index

Trait	Terminal	Replacement
Days to slaughter	34.10%	10.75%
Carcase conformation	6.60%	2.08%
Carcase fat	12.68%	4.00%
Single lambing difficulty	2.11%	0.76%
Multiple lambing difficulty	1.14%	0.41%
Lamb survival	42.12%	15.21%
<b>Health – Dagginess</b>	<b>1.15%</b>	<b>0.17%</b>
<b>Health - Lameness lamb</b>	<b>0.11%</b>	<b>0.02%</b>
<b>Health - Lameness ewe</b>		<b>0.04%</b>
Maternal days to slaughter		10.96%
Maternal carcase conformation		2.53%
Maternal carcase fat		4.87%
Ewe mature weight		14.13%
Maternal lamb survival		20.49%
Maternal single lambing diff		0.21%
Maternal multiple lambing diff		0.11%
Number of lambs born		13.26%

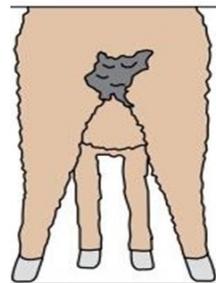
# Health index

Trait	Economic value	Relative emphasis (%)	
		Terminal	Replacement
Dagginess	-€0.34 (score)	1.15	0.17
Lameness – lamb	-€0.08 (%)	0.11	0.02
Lameness - ewe	-€0.24 (%)		0.04

100  
lambs



Score 3



Score 4



# Health index

Trait	Economic value	Relative emphasis (%)	
		Terminal	Replacement
Dagginess	-€0.34 (score)	1.15	0.17
Lameness – lamb	-€0.08 (%)	0.11	0.02
<b>Lameness - ewe</b>	<b>-€0.24 (%)</b>		<b>0.04</b>

100  
ewes

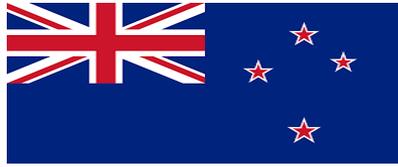


€1.20

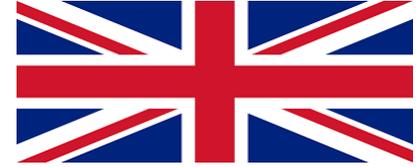
# Elsewhere...



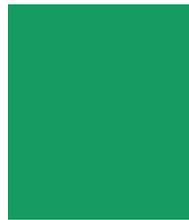
Worm FEC



Worm FEC  
Facial Eczema  
Dagginess



Worm FEC



Lameness  
Dagginess



# In conclusion...

## Can we breed for healthier sheep?



## We have all the tools so why not?