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Welfare, environmental impact and production – conflicting pig breeding goals

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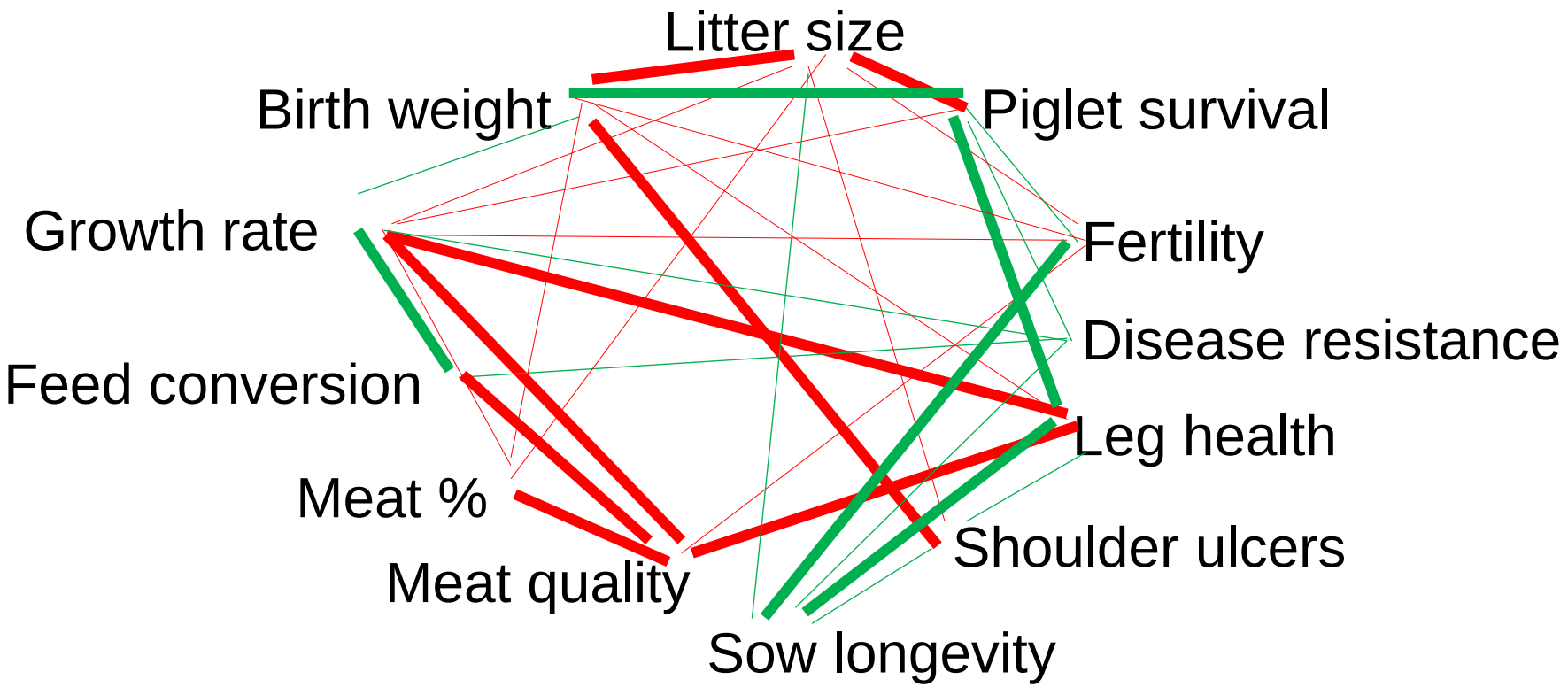
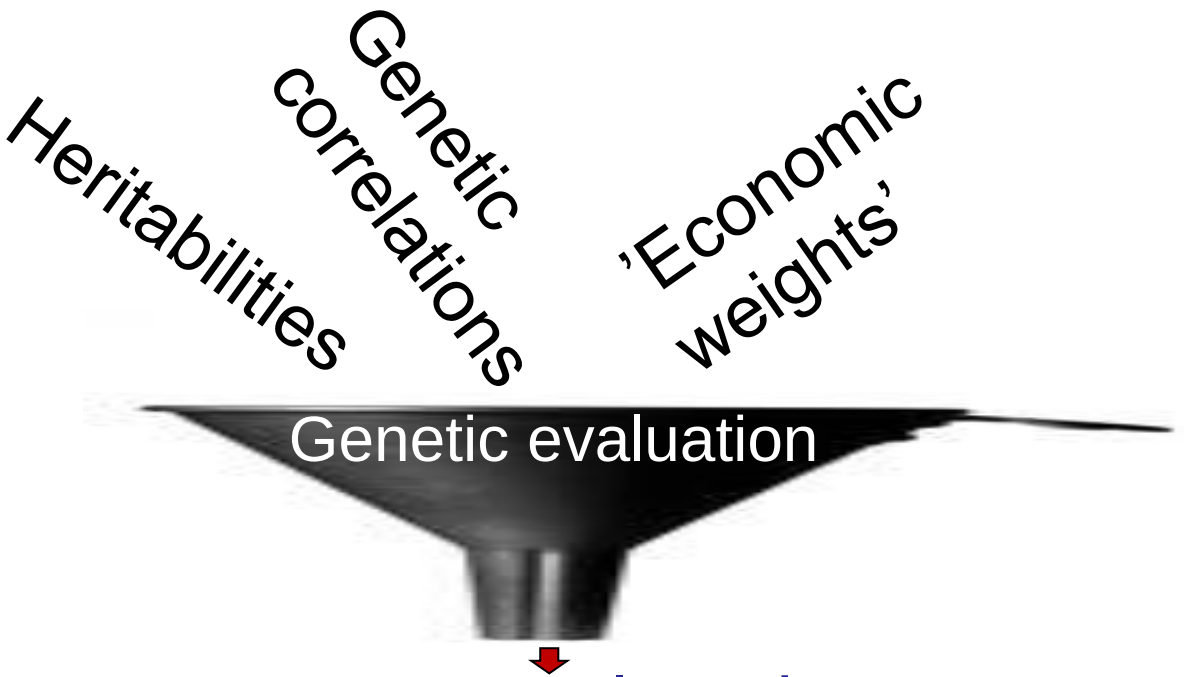
We want a high production level
and a good animal welfare

Need for broad, balanced breeding goals

Genetic correlations between goal traits



Create balance between goal traits with ’economic weights’



One total merit breeding value

Aims

Investigate farmers' views on

- which traits should be in the breeding goal
- how much weight should these traits have
- which traits effect animal welfare

Estimate

- difference in genetic change between alternative 'Welfare' and 'Current' breeding scheme

Questionnaire with selection index

110 Swedish pig farmers

15 % organic production

85 % conventional

28 % piglet production

24 % slaughter pig

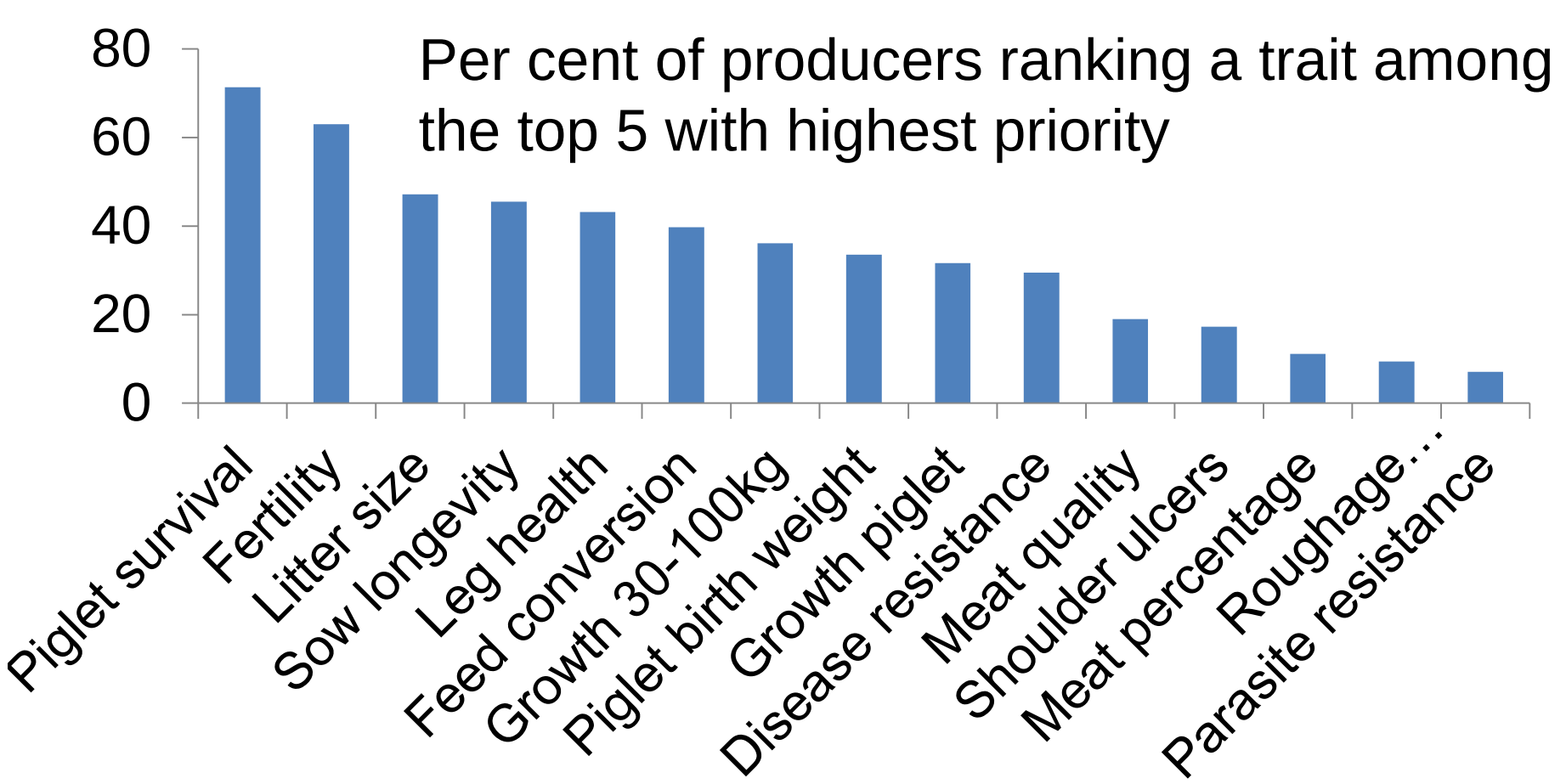
48 % both

Farmers were asked to rank 15 traits

Piglet growth rate
Growth rate, 30-100kg
Roughage consumption
Feed conversion
Meat percentage
Meat quality

Fertility
Litter size
Piglet survival
Piglet birth weight

Disease resistance
Parasite resistance
Shoulder ulcers
Leg health
Sow longevity


Per cent of producers ranking a trait among the top 5 with highest priority
80
60
40
20
0
Piglet survival
Fertility
Litter size
Sow longevity
Leg health
Feed conversion
Growth 30-100kg
Piglet birth weight
Growth piglet
Disease resistance
Meat quality
Shoulder ulcers
Meat percentage
Roughage…
Parasite resistance

Which weights should the traits have to get the genetic gain you want in your herd?

Steg : 3 av 6

Hur ska egenskaper
framsteg som du vill se i din besättning?

Längst ned på den här sidan finns det en instruktionsvideo som du kan scrolla ned till och
omöjligt att uppnå stort genetisk framsteg i alla

När du hittat en för dig optimal eller godtagbar
på "fortsätt".

5 highest ranked traits
Relative weights, add up to 100
Resulting genetic change
Repeat until satisfied

Egenskap / Trait	Vikt / Weight	Förändring * / Change	
Grovfoderkonsumtion	0	-	Suggor förändr
Parasitresistens	0	-	Andele förändr
Köttighet	0	-	Köttprocenten kommer att förändras så här mycket.
Tillväxt smågris	0	-	Tillväxten hos smågrisar kommer att förändras med så här många gram per dag.
Kvar att fördela	100		

* Genetisk förändring per generation

Beräkna

Fortsätt

Genetic changes (from selection index), based on economic weights given by producers

Meat percentage	-0.2	%
Growth rate, 30-100 kg	+8	g/d
Litter size	-0.1	born alive
Piglet survival	+1	% of liveborn

SLU

Enkät

Steg : 4 av 6

What effect do you consider each trait to have on profitability and animal welfare?

Vilken effekt tror du a

En långsiktigt hållbar avelsstrategi måste ta hänsyn till flera olika aspekter, till exempel lönsamhet, djurvälfärd och miljöpåverkan. Grisarnas egenskaper kan vara kopplade till dessa aspekter i större eller mindre utsträckning, ibland inte alls.

Ange hur stor inverkan du tycker att de egenskaper som finns angivna i tabellen har på lönsamheten, djurens välfärd och miljön (ingen inverkan, liten inverkan eller stor inverkan).

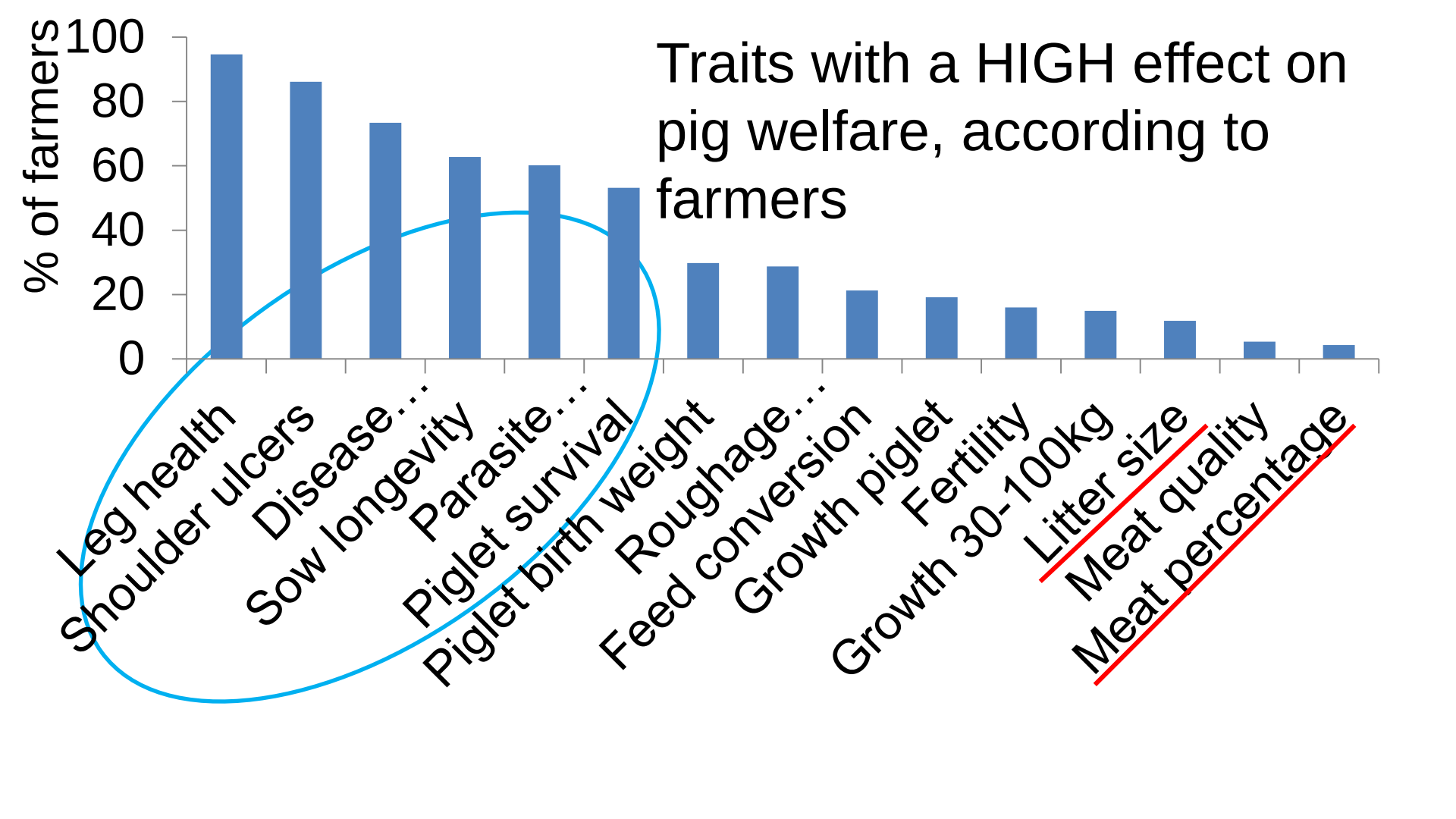
No, Medium or HIGH effect

Egenskap	Lönsamhet			Djurvälfärd			Klimat/miljö		
	ingen	mellan	stor	ingen	mellan	stor	ingen	mellan	stor
Tillväxt slaktgris	○	○	○	○	○	○	○	○	○
Smågrisöverlevnad									
Köttkvalitet									
Produktiv livslängd sug									
Foderomvandlingsförmåga									
Benhälsa	○	○	○	○	○	○	○	○	○
Bogsår sugga	○	○	○	○	○	○	○	○	○
Födelsevikt smågrisar	○	○	○	○	○	○	○	○	○
Grovfoderkonsumtion	○	○	○	○	○	○	○	○	○
Fertilitet	○	○	○	○	○	○	○	○	○
Parasitresistens	○	○	○	○	○	○	○	○	○
Kullstorlek	○	○	○	○	○	○	○	○	○
Köttighet	○	○	○	○	○	○	○	○	○
Sjukdomsresistens	○	○	○	○	○	○	○	○	○
Tillväxt smågris	○	○	○	○	○	○	○	○	○

Fortsätt

Organic and conventional producers associated the same traits with animal welfare

Most farmers (90 %) considered all traits except roughage consumption to have medium or high impact on farm profitability

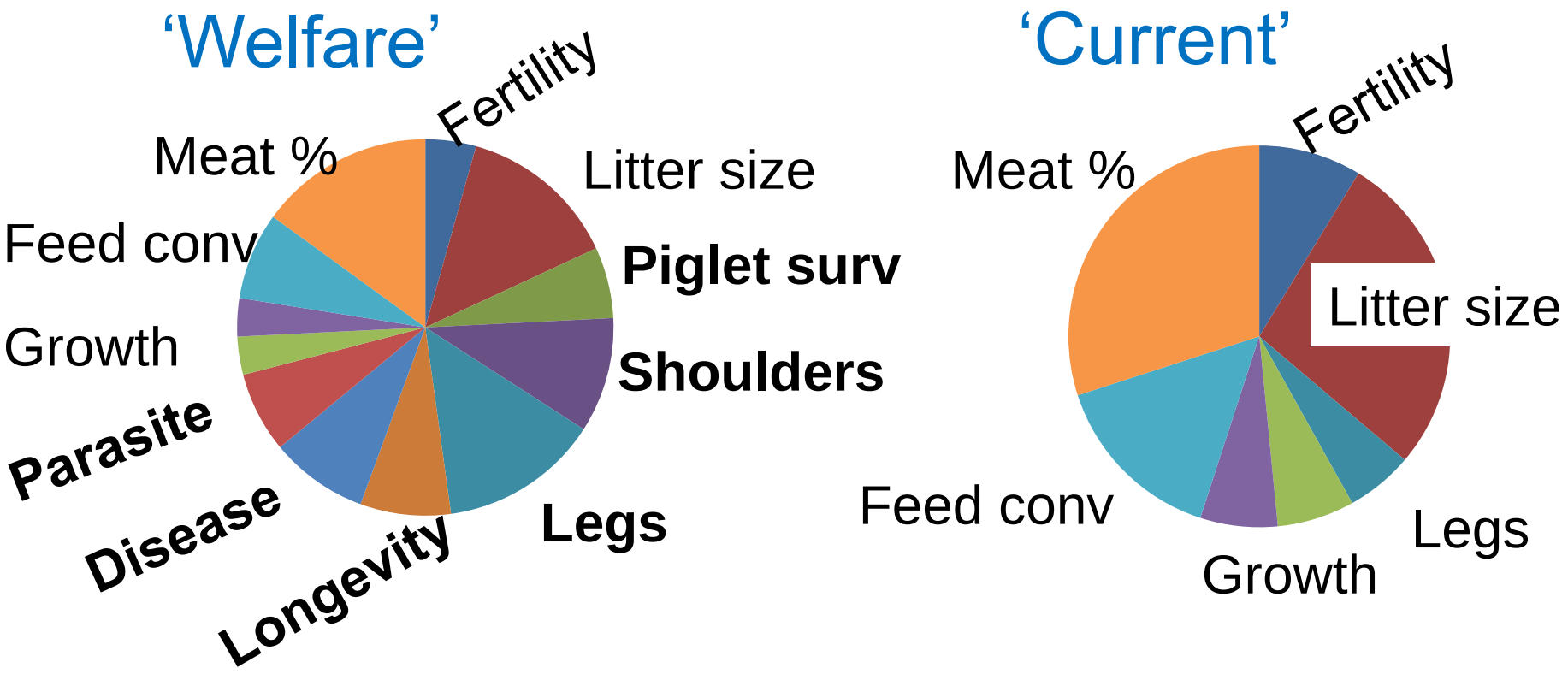

Traits with a HIGH effect on pig welfare, according to farmers
% of farmers
100
80
60
40
20
0
Leg health
Shoulder ulcers
Disease…
Sow longevity
Parasite…
Piglet survival
Piglet birth weight
Roughage…
Feed conversion
Growth piglet
Fertility
Growth 30-100kg
Litter size
Meat quality
Meat percentage

Simulated the new breeding program ‘Welfare’

Leg health
Shoulder ulcers
Disease resistance
Sow longevity
Parasite resistance
Piglet survival

} 50% of total economic weight in breeding goal

Proportionally reduced weight on all other traits (litter size, growth, meat percentage etc)



Relative economic weights

Estimated genetic trends, change per generation

	‘Welfare’	‘Current’
Leg health	-0.0	scores
Shoulder ulcers	-0.1	% free
Disease resistance	+0.2	% healthy
Sow longevity	+1.7	days
Parasite resistance	+0.2	% health
Piglet survival	-0.2	% of liveborn

Estimated genetic trends, change per generation

	‘Welfare’	‘Current’	
Litter size	-0.00	+0.02	piglets
Growth, 30-100 kg	+6	+19	g/d
Feed conversion	+0.5	+0.8	g/MJ Me
Meat percentage	+0.2	+0.3	%

The progress in ‘welfare traits’ is accompanied by reduced progress in production traits

Who should pay for increased welfare?

- The farmer
- The industry
- The society – political governance
- The consumer

To conclude

- Farmers' opinions about breeding goals can be studied with a web questionnaire
- Farmers are interested in 'welfare traits' and may accept less progress in production traits
- Societal demands must be related to willingness to pay for animal friendly products

To discuss

- Who pays for improved welfare?