



NATIONAL RESEARCH INSTITUTE OF ANIMAL
PRODUCTION
DEPARTMENT OF PIG BREEDING



Vagina-cervix length (VCL) as a tool to predict a litter size of primiparous sows

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Ovulation
rate

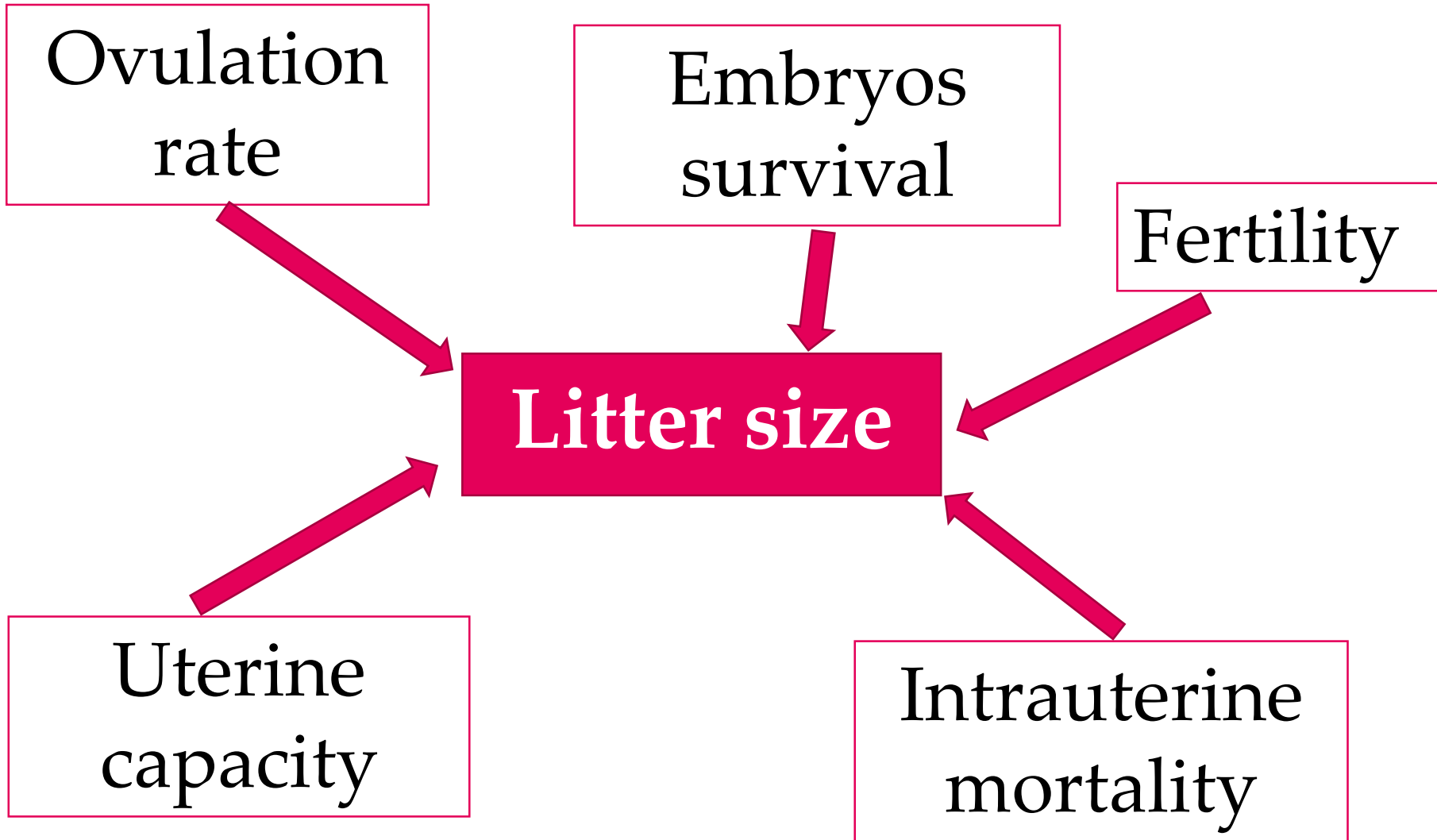
Embryos
survival

Fertility

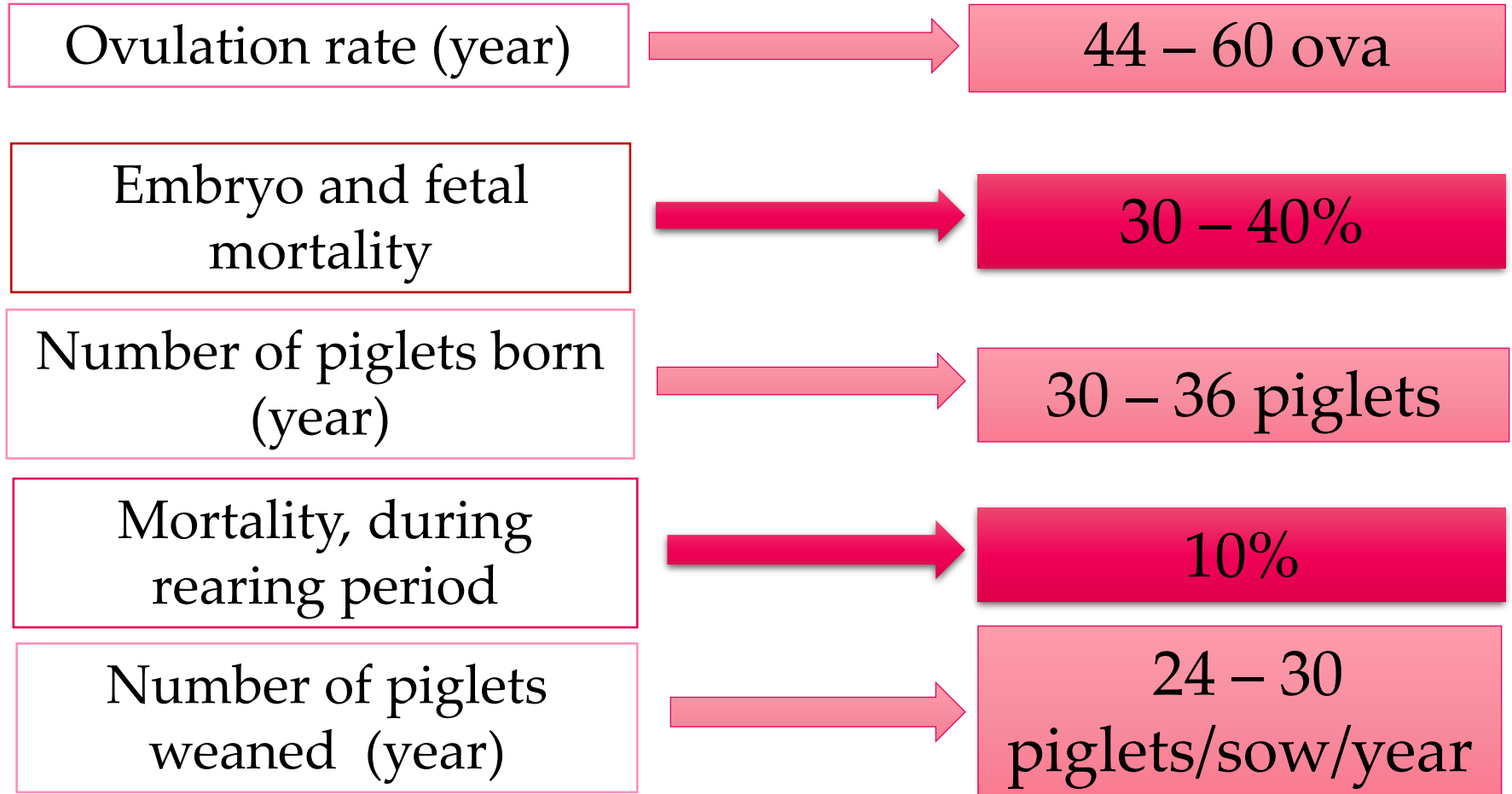
Litter size

Uterine
capacity

Intrauterine
mortality



Reproductive potential



Causes of mortality

- Intrauterine crowding (IUC),
- Intrauterine growth restriction (IUGR).



Properly developed reproductive system

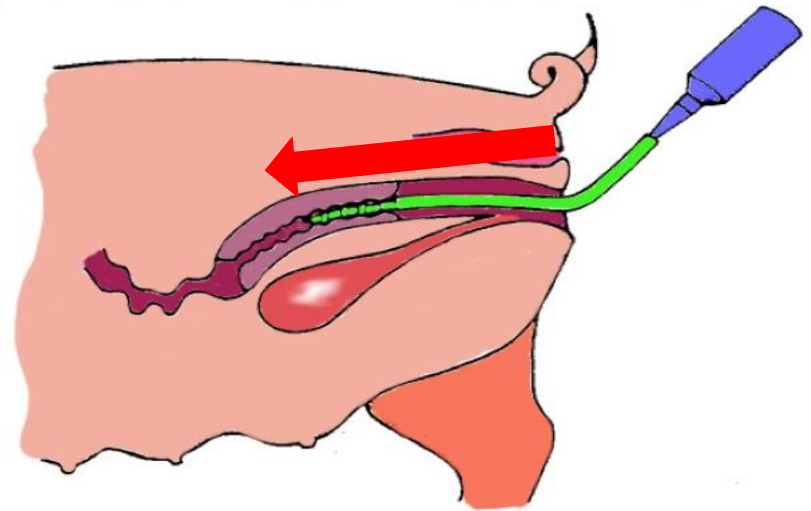
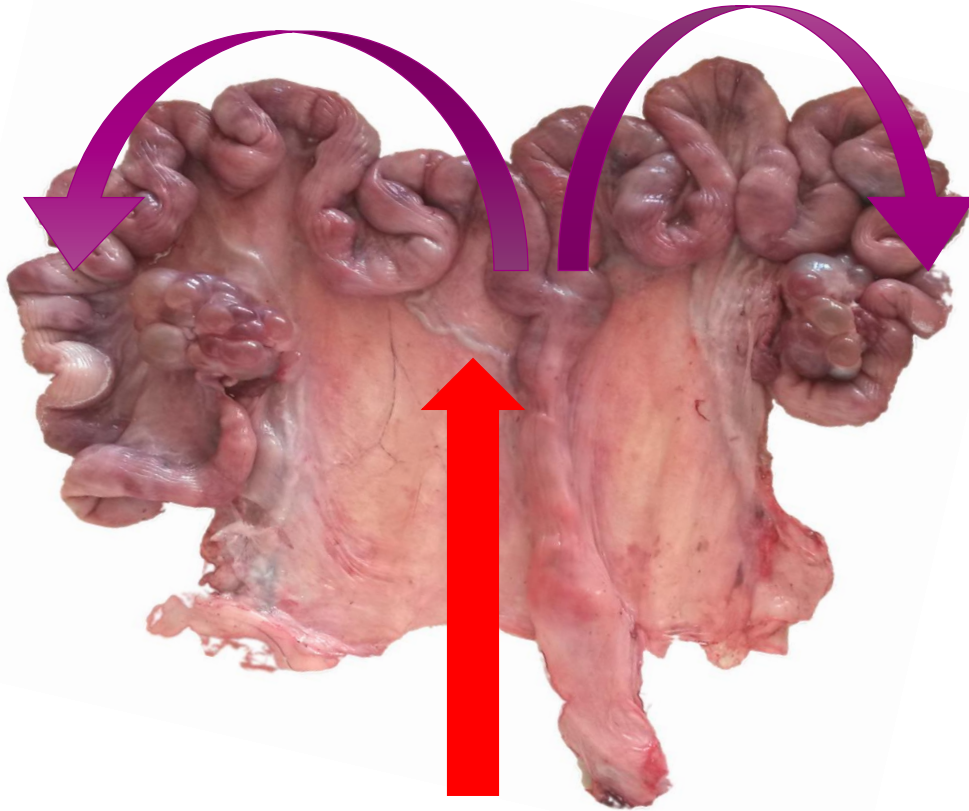
Improvement in reproduction efficiency

Current criteria for selecting replacement gilts

- ❖ Age,
- ❖ Backfat thickness,
- ❖ Body weight,
- ❖ Body condition,
- ❖ Structural soundness,
- ❖ Dam's reproductive history.



Vagina Cervix Length (VCL)



Rillo et al. (1998); Chen & Dziuk (1993)

Research aim

determine the relationship between vagina-cervix length (VCL) and litter size.



Materials and methods

121 hybrid sows PIC, second estrus - VCL measurement

Group:

- small (N=23; VCL 18.0-23.0 cm),
- medium (N=65; VCL 23.1-28.0 cm)
- large (N=33, VCL 28.1-33.0 cm)



Analyzed:

- Number of live born piglets
- Number of stillborn piglets
- Number of total born piglets

Results

Index	Vagina Cervix Length (VCL) (cm)		
	Small	Medium	Large
VCL	21.11 ^A ±1.39	25.77 ^B ±1.34	30.02 ^C ±1.48
Number of live born piglets	11.00 ^{Aa} ±2.73	12.95 ^{Bb} ±2.06	14.12 ^{Bc} ±2.64
Number of stillborn piglets	0.30±0.63	0.20±0.54	0.42±0.79
Total number of piglets born	11.30 ^{Aa} ±2.72	13.15 ^{Bb} ±2.21	14.55 ^{Bc} ±2.71

Within rows means denoted by different letter superscripts differ ^{AB}P<0.01; ^{ab}P<0.05

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Results

	VCL
Number of live born piglets	0.514**
Number of stillborn piglets	0.01
Number of total born piglets	0.509**

** - $P < 0.01$

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** - $P < 0.01$

Conclusion

The use of VCL evaluation as a potential predictor to litter size or as a method to selection of gilts is possible. Although, more research on different genotypes and herds are necessary.





Thank you for your attention!