



Water usage as health indicator

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Research goal and motivation



Motivation



Hypothesis: water intake is an important indicator for animal health & welfare



Water usage measured at many pig farms, but...

Goal



Is there a relation between water usage and animal health?



Ultimate goal: enable early warning/intervention, prevent disease outbreak

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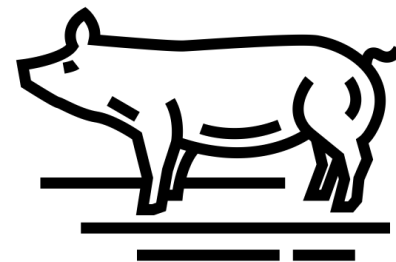


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Animals and farms

Research at **commercial** farms

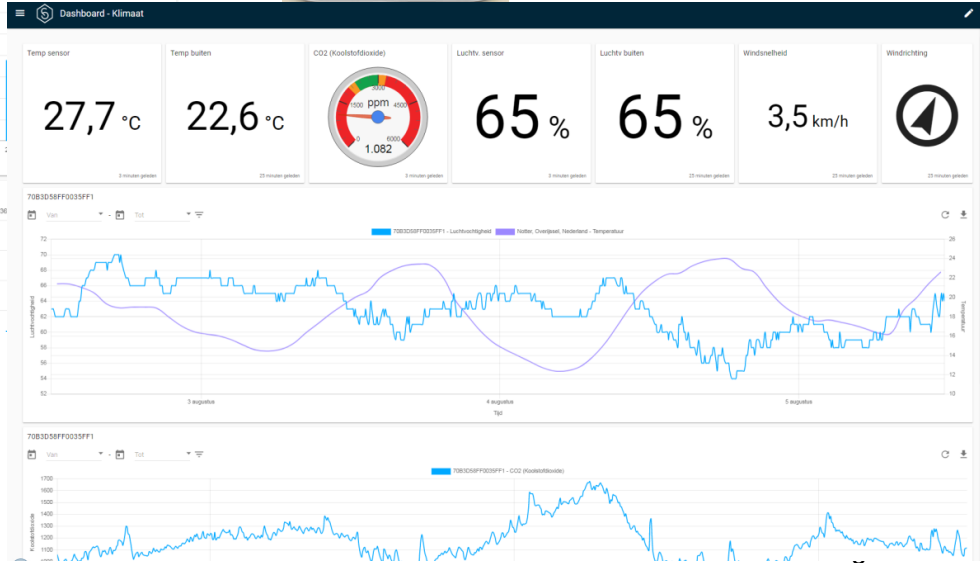
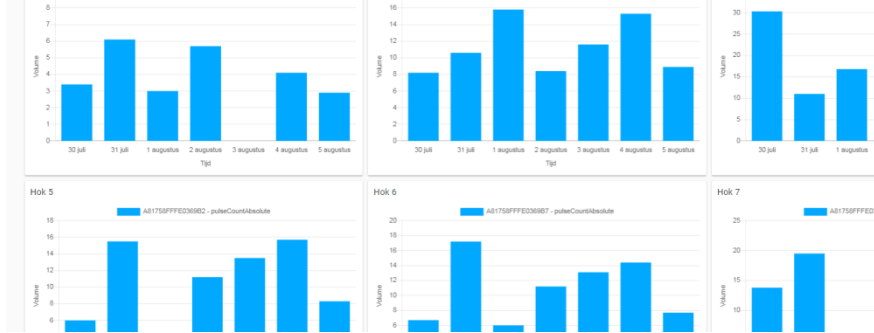
- Piglets
- Finishing pigs
- Farrowing sows



Created by Creative Mania
from Noun Project

	Piglets	Finishing pigs	Farrowing sows
Measurement level	Compartment	Compartment	individual
Nr of animals per cycle	135-230	290	10+9 (2 farms)
Nr of cycles	5	5	8+6=14

Measurements



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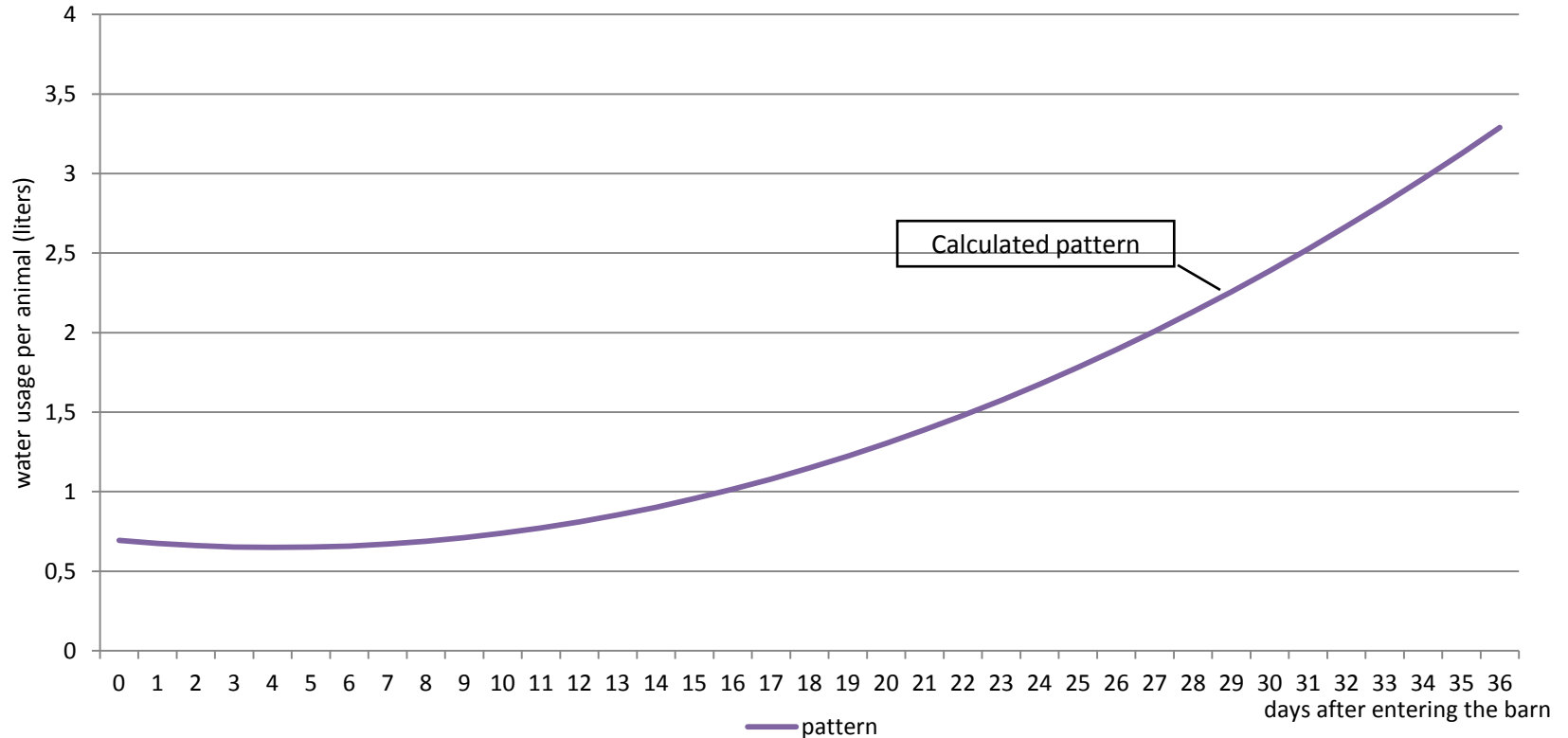


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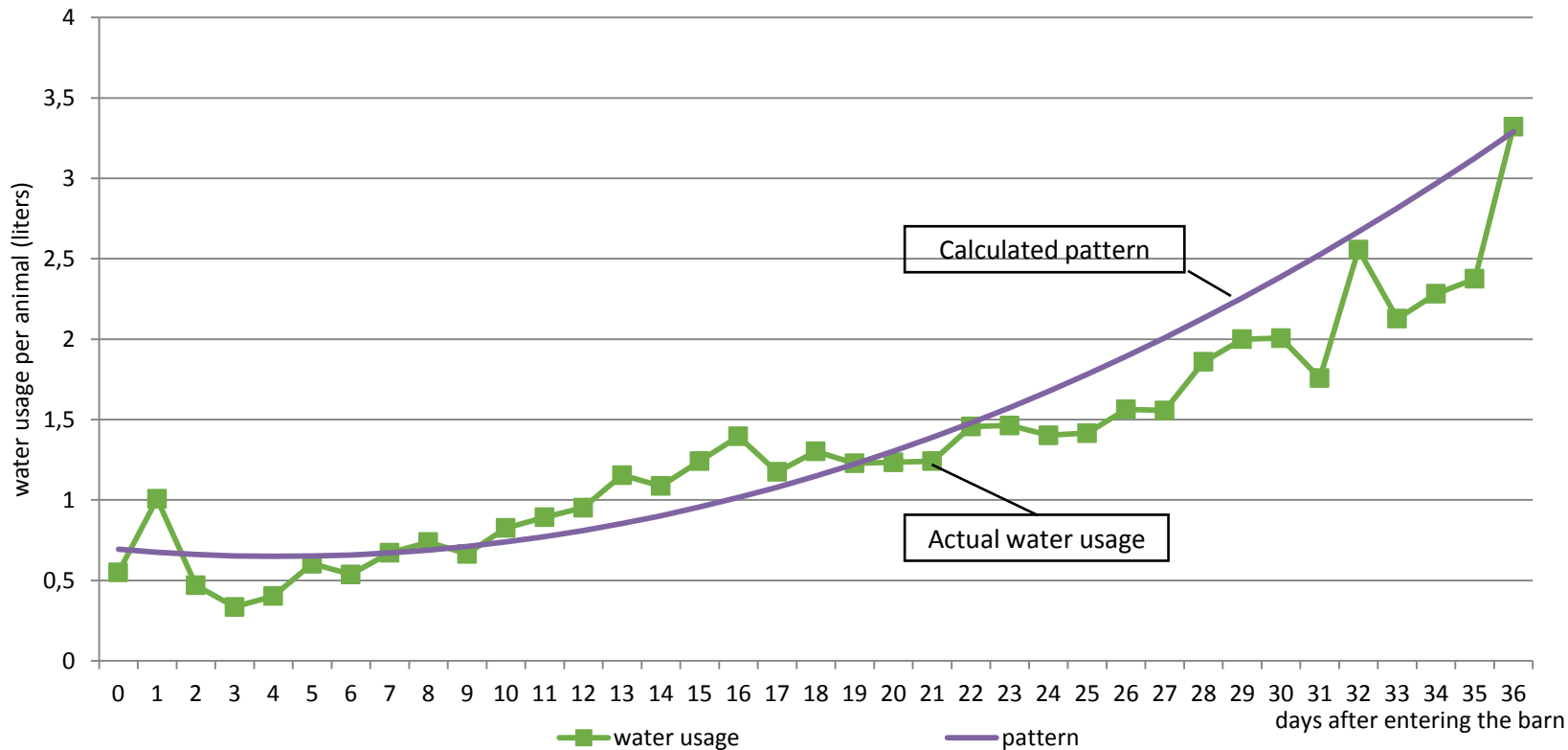


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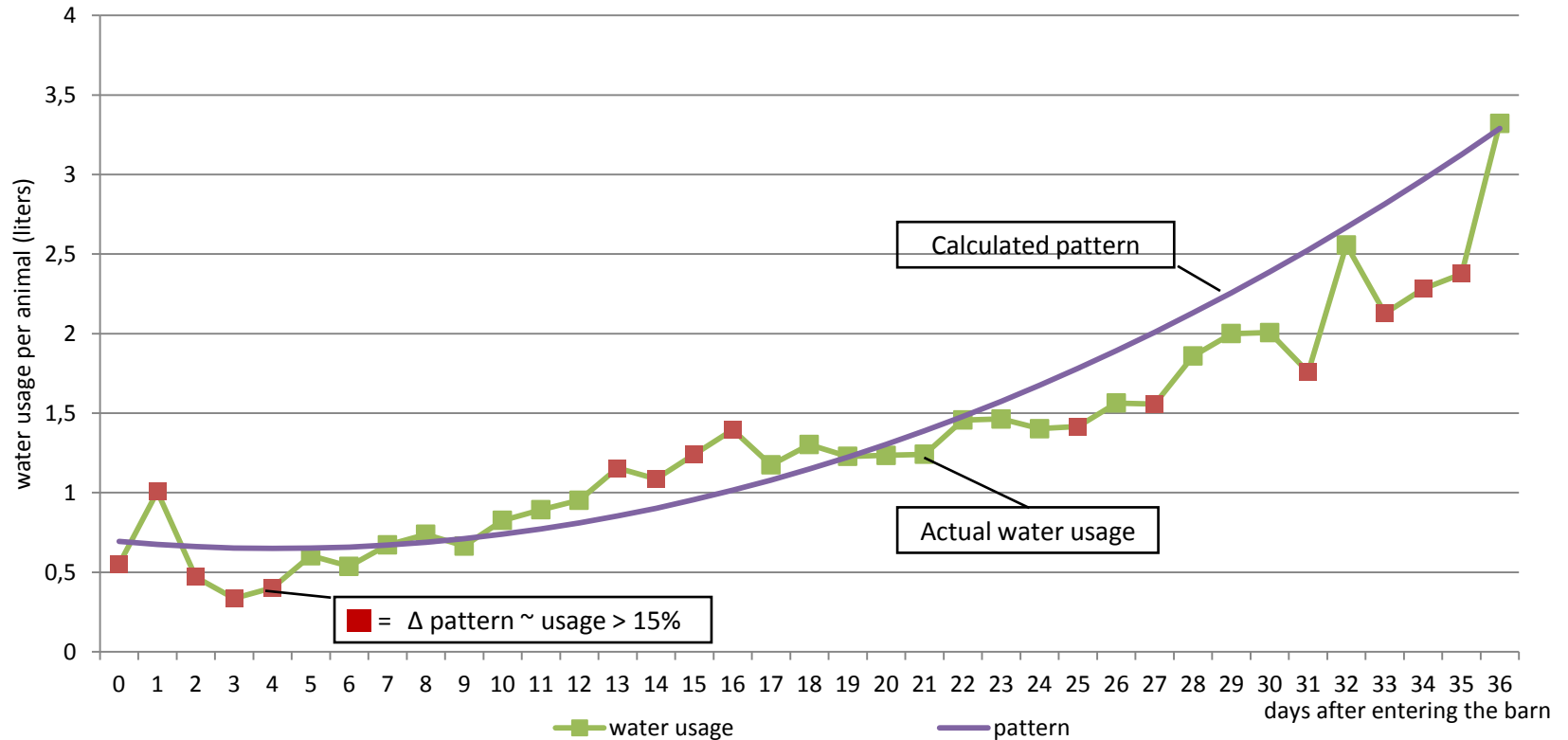
Piglets | Water usage pattern



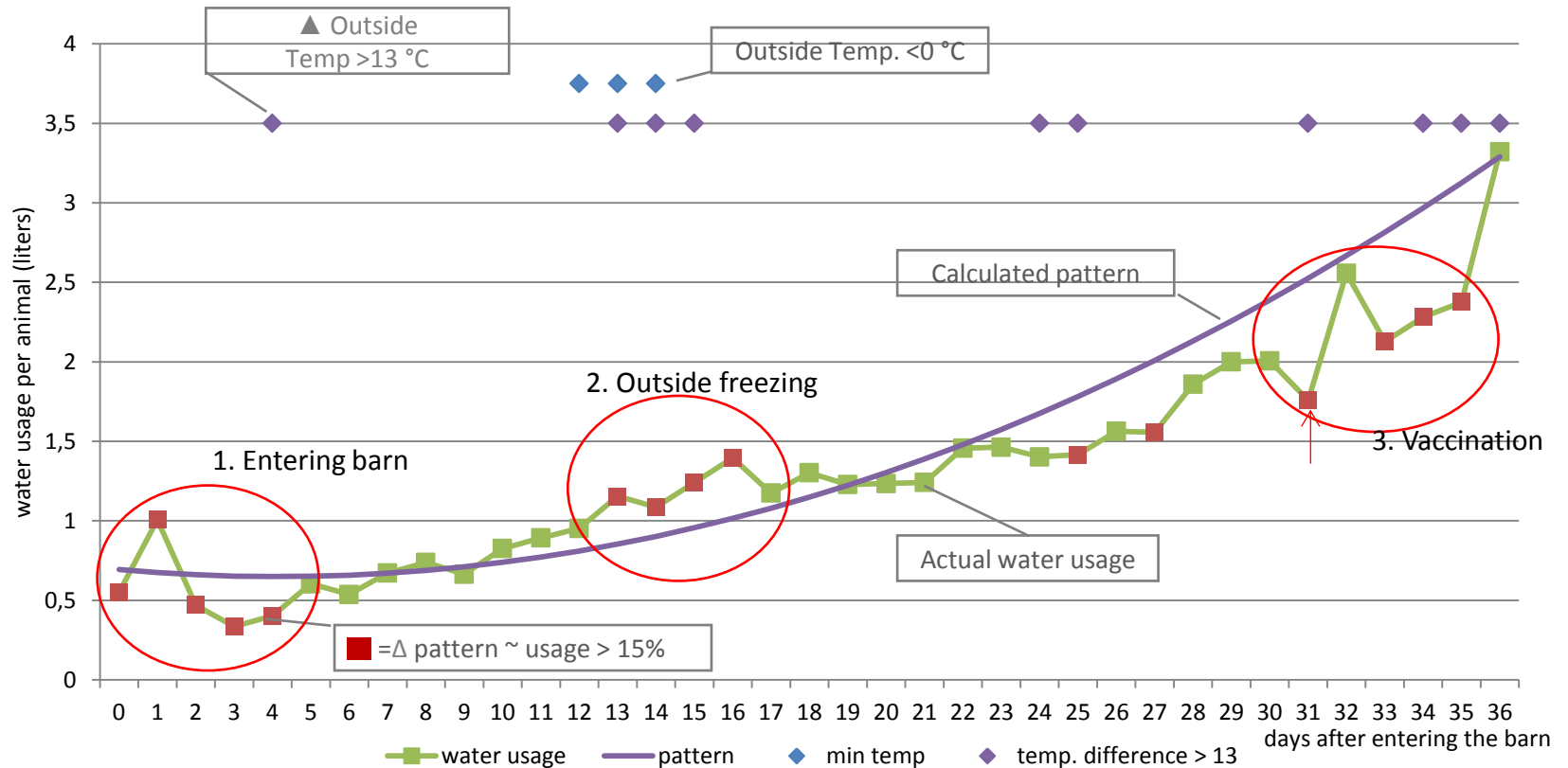
Piglets | Water usage pattern



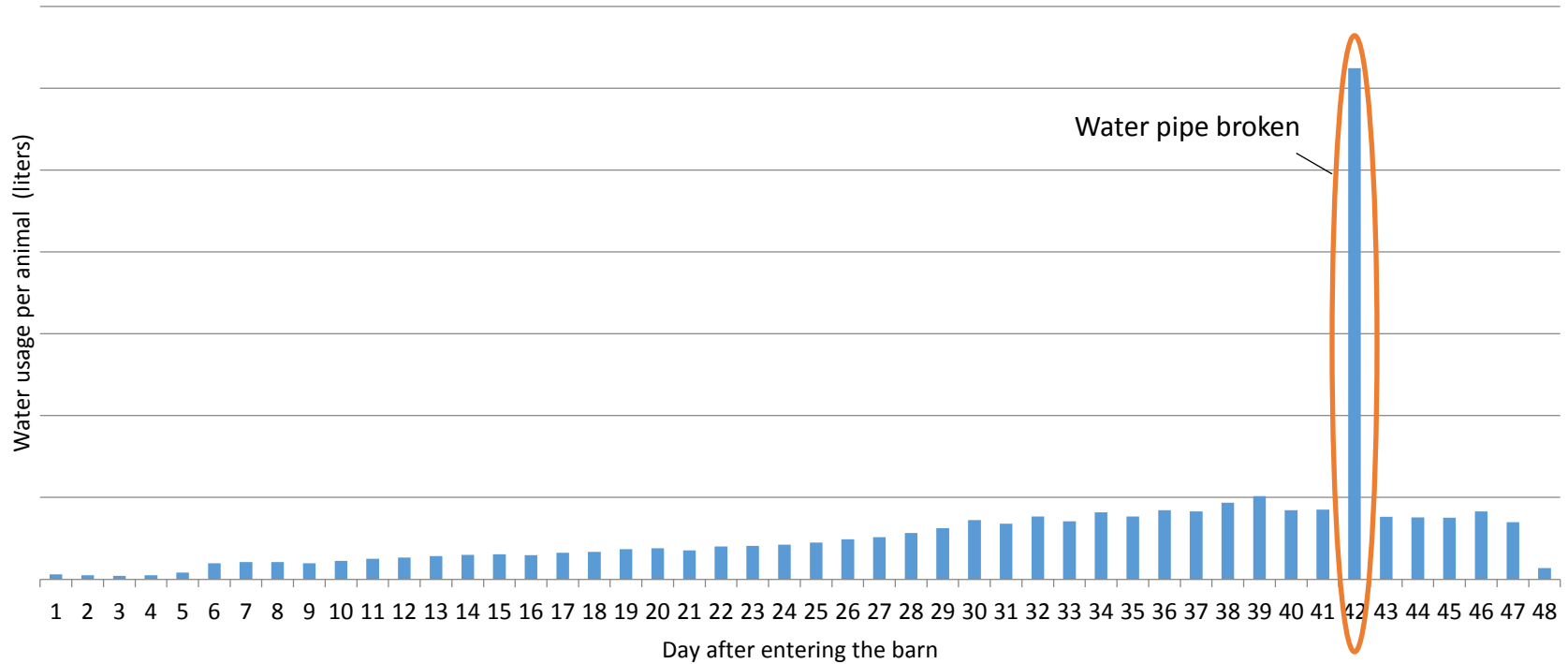
Piglets | Water usage pattern



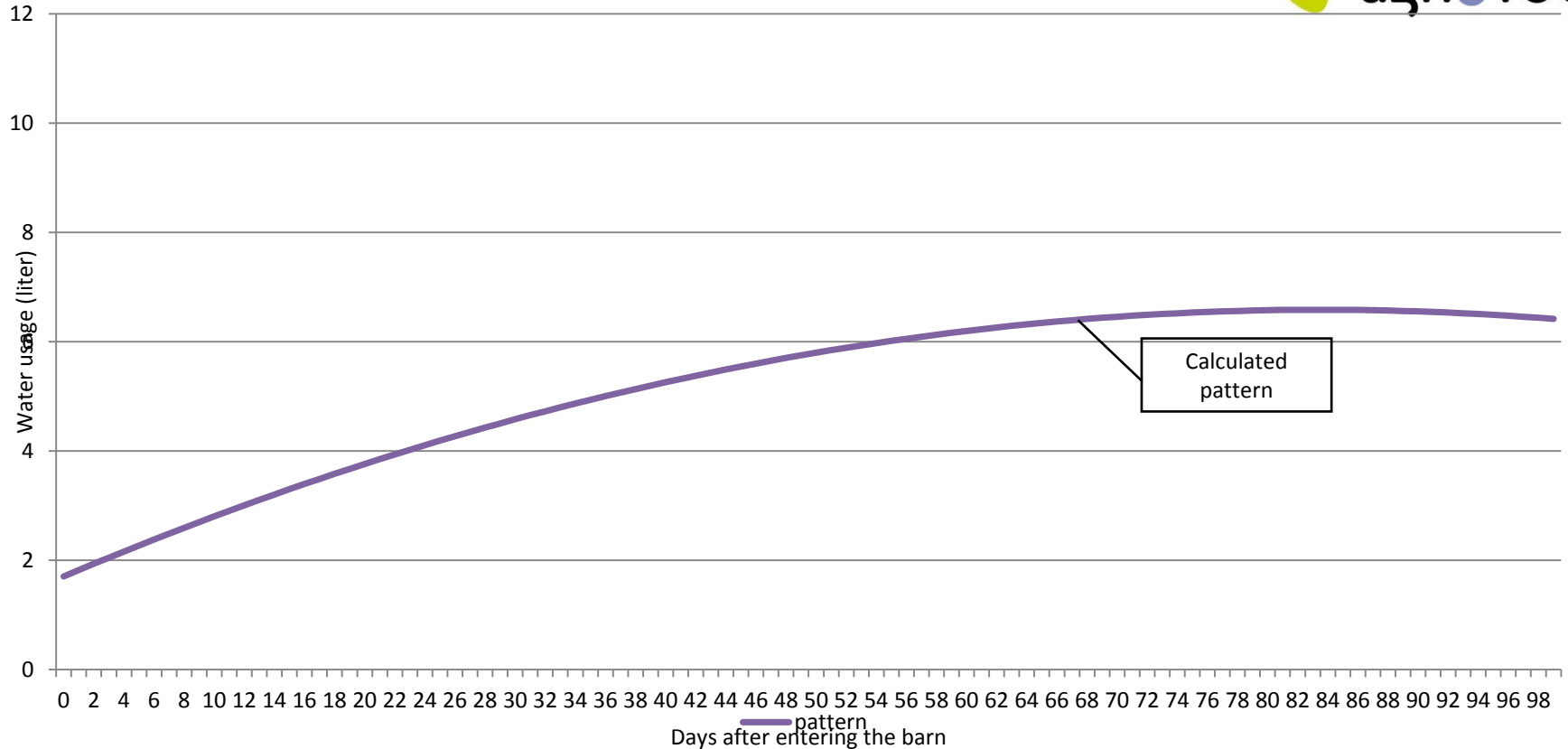
Piglets | Water usage pattern



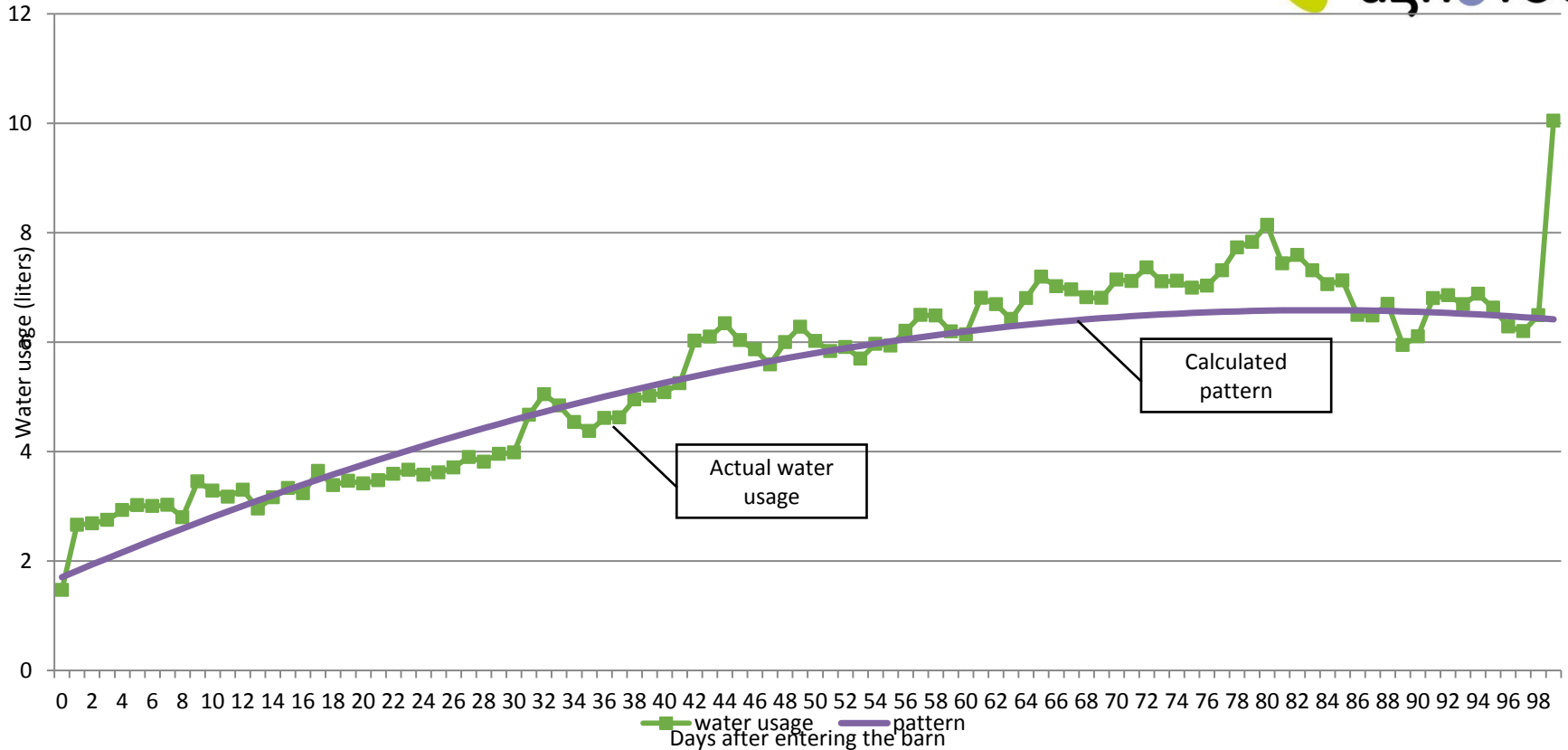
Sustainability



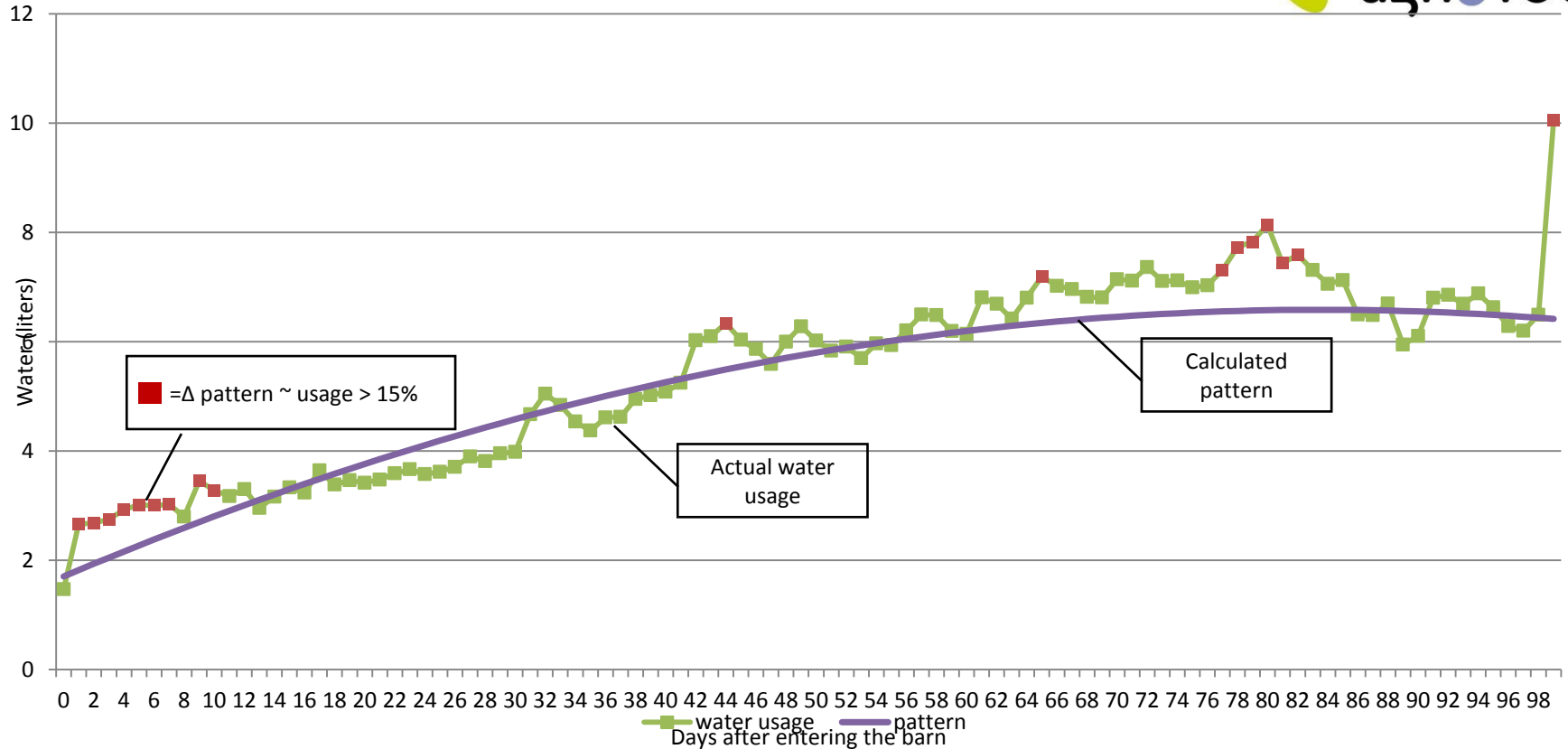
Water usage as indicator | finishing pigs



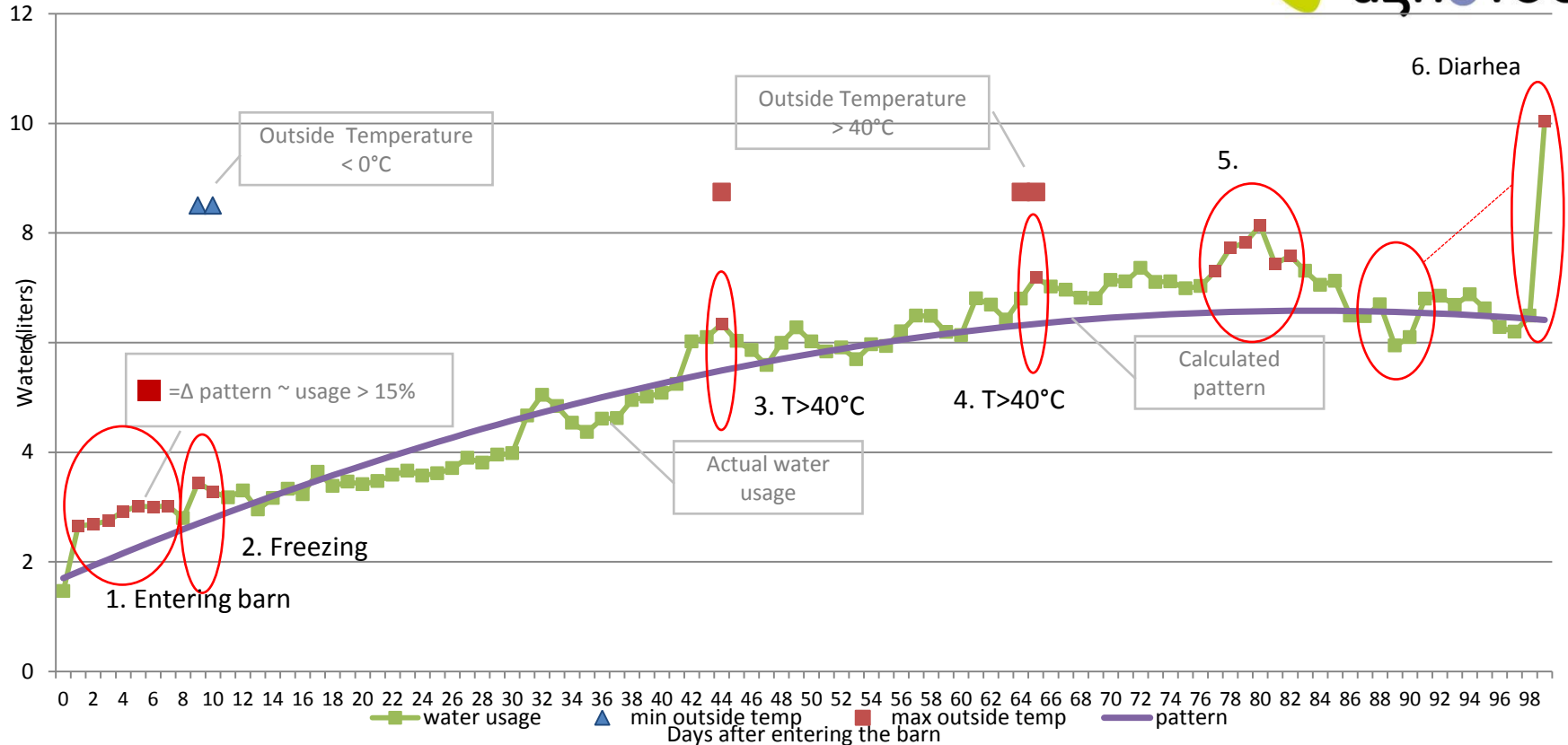
Water usage as indicator | finishing pigs



Water usage as indicator | finishing pigs



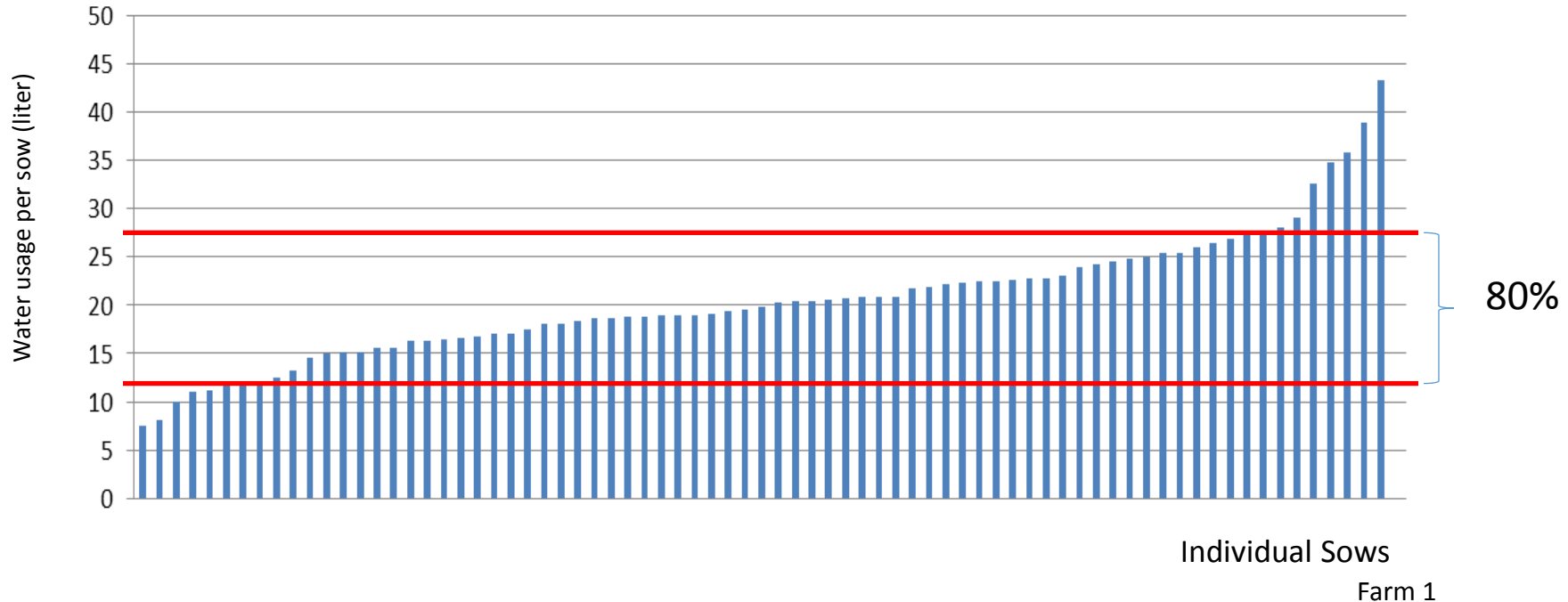
Water usage as indicator | finishing pigs



Huge difference in water usage per sow



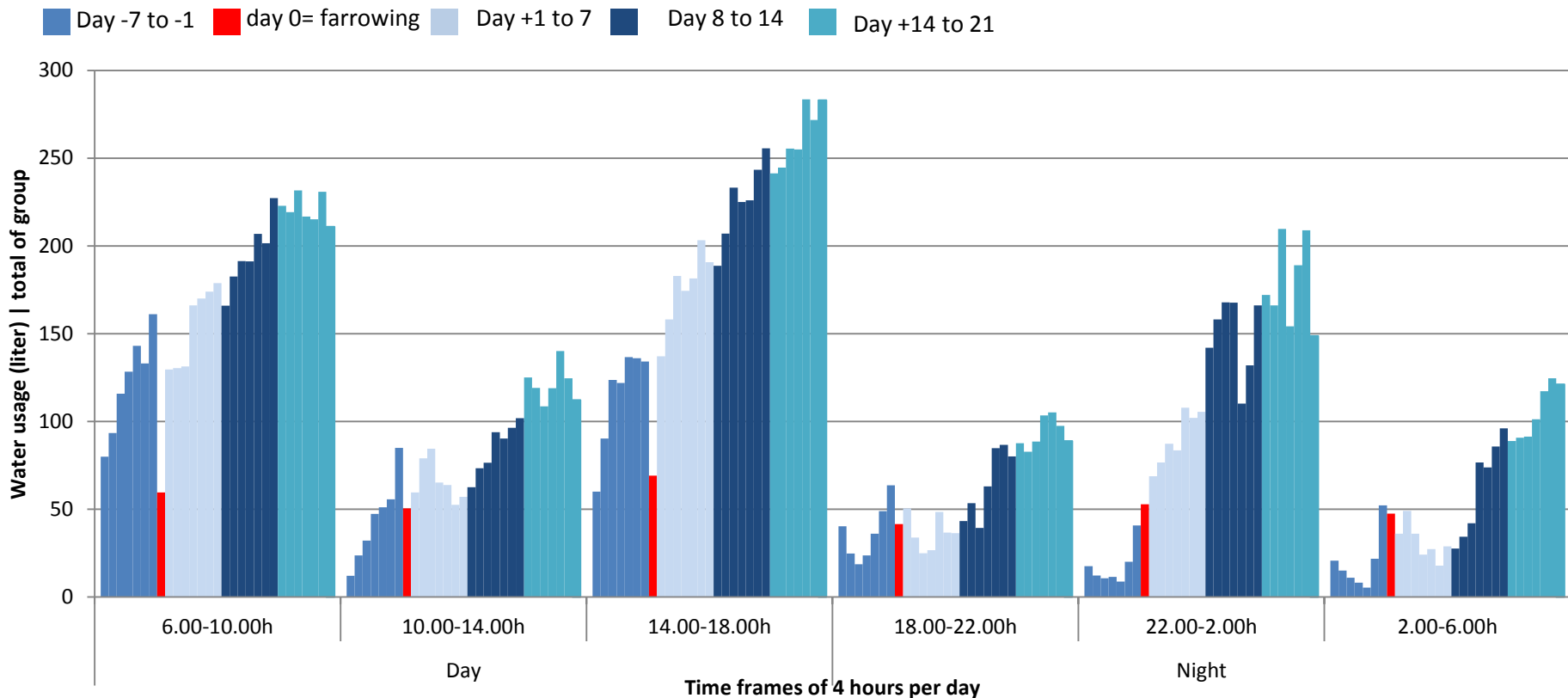
Individual sows represented in order of average water usage per day (liter)



Water usage per day around farrowing



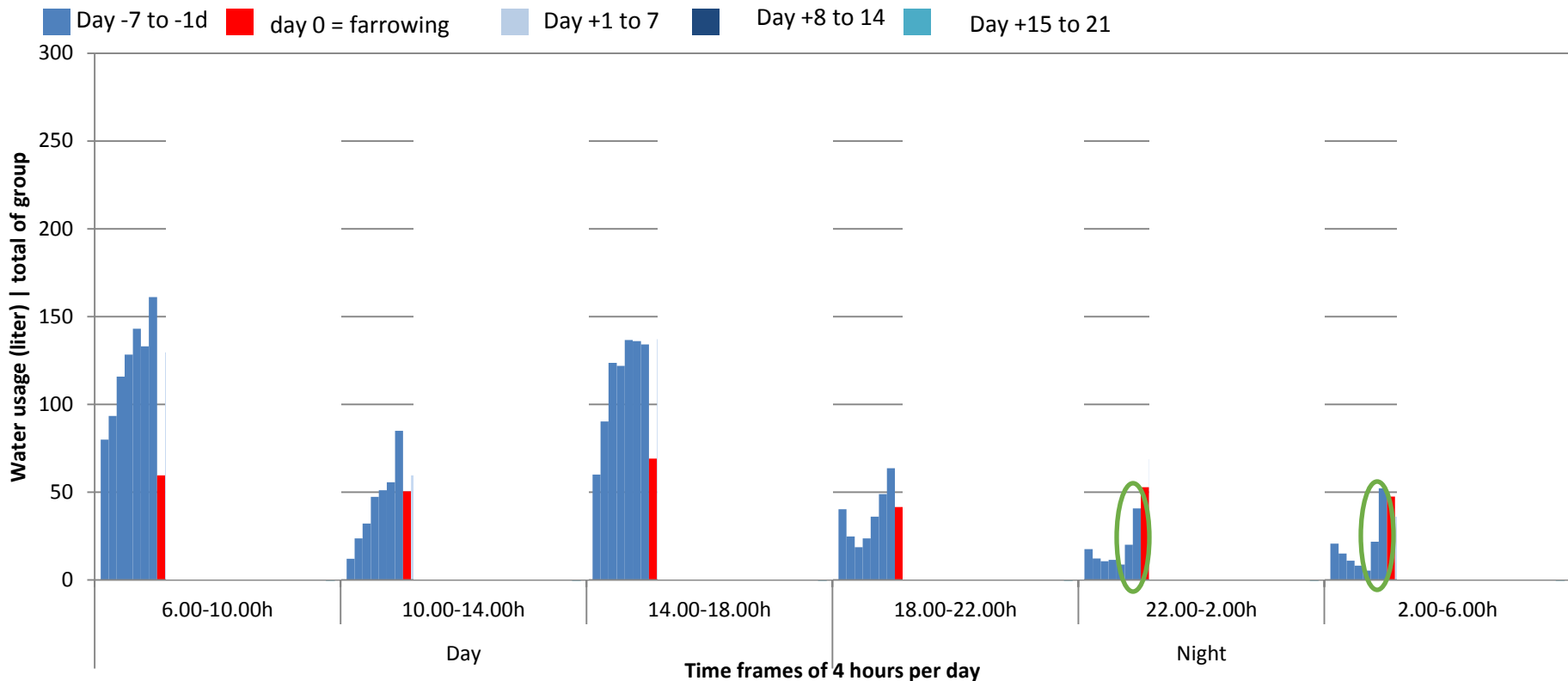
Water usage per time frame per day of a group of sows around farrowing



Water usage per day around farrowing



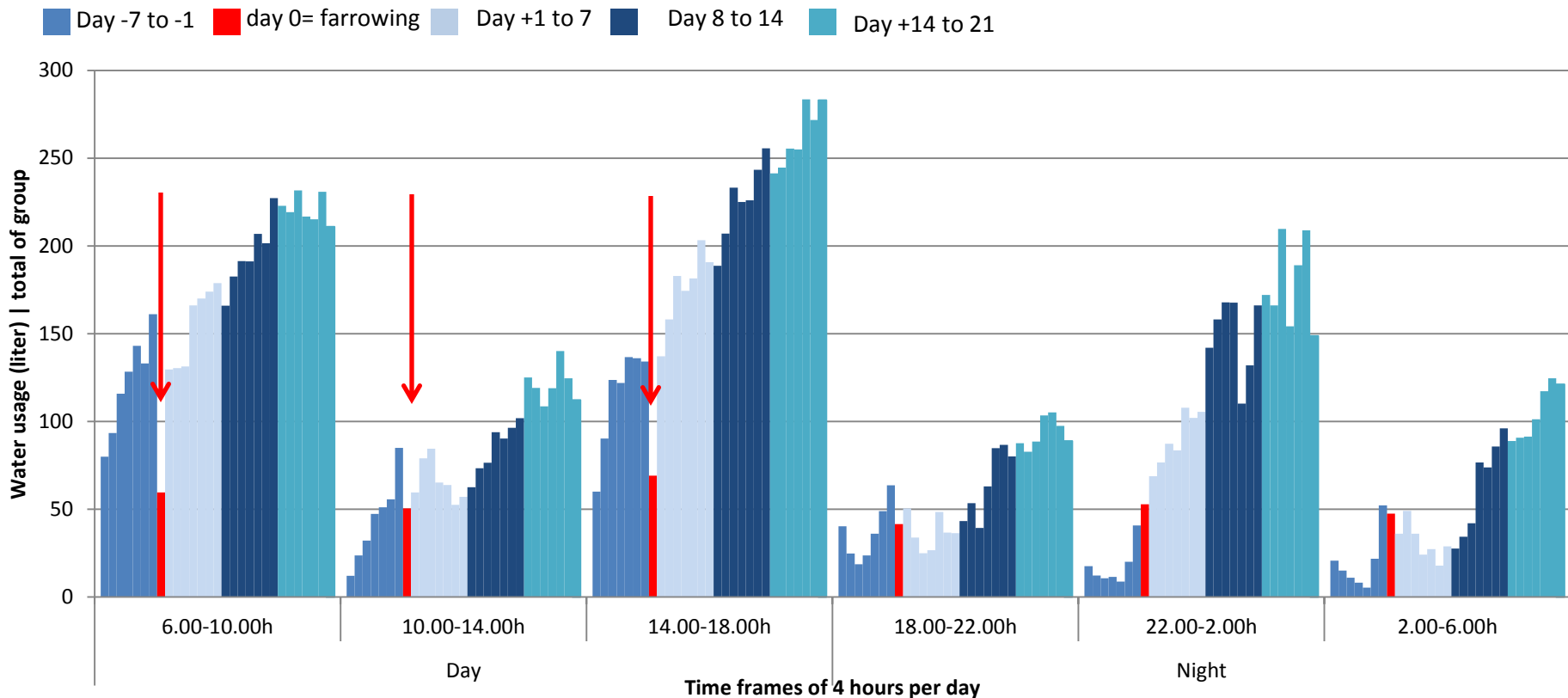
Water usage per time frame per day of a group of sows around farrowing



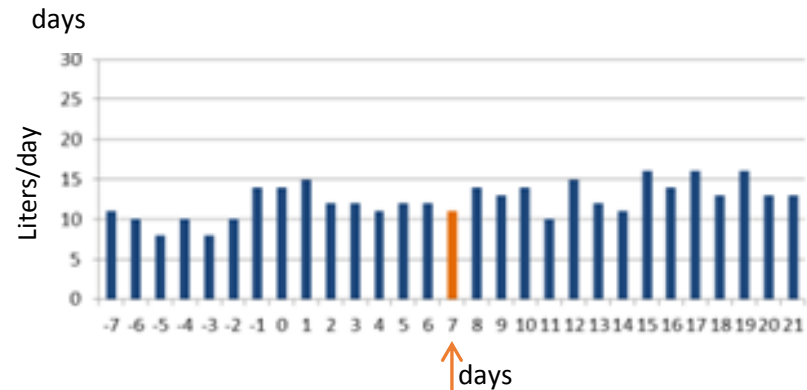
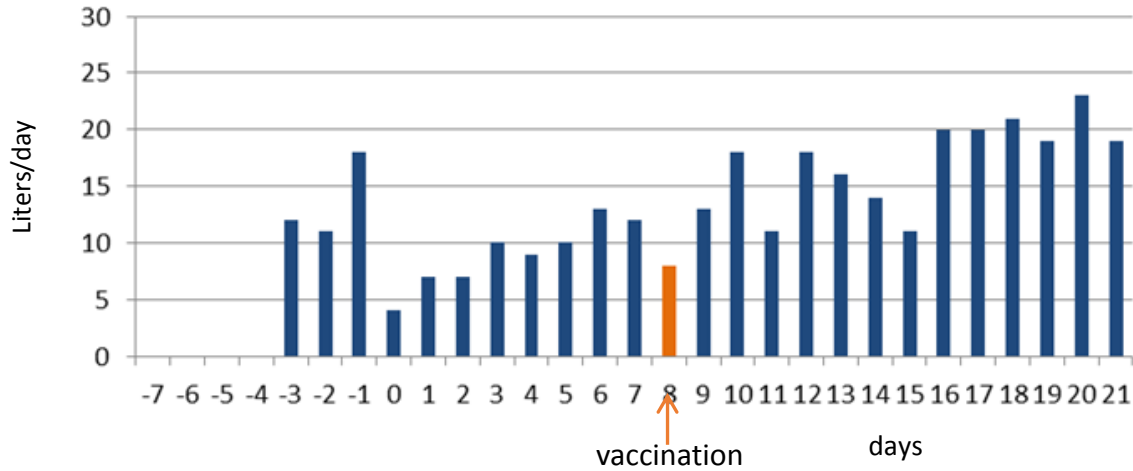
Water usage per day around farrowing



Water usage per time frame per day of a group of sows around farrowing



Influence of vaccination | sows



Conclusion

Water usage piglets and finisher pigs influenced by:

- Outside temperature ($>40\text{ }^{\circ}\text{C}$; $<0\text{ }^{\circ}\text{C}$, ΔT)

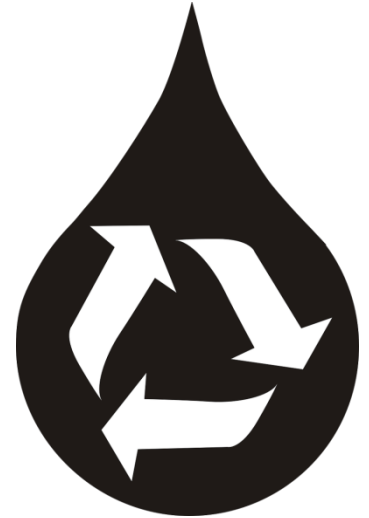
Individual sows:

- Huge difference in water usage of individual sows
- Data of farrowing predictable

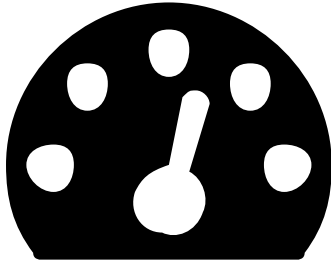
Deviations from the pattern indicate health problems

- Vaccination
- E.g. diarrhea

Real time measurement can predict reduced animal health



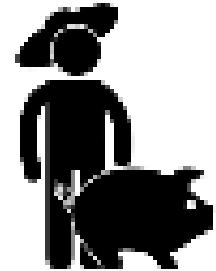
Real time
measurement



Analyses → relevant
information



Practical application



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Thank you for your attention



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