



## Alternative pig housing systems with high welfare standards – Status quo and perspectives

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Potential to display behavioural variability



Source: Barbara Früh

Source: Big Dutchman

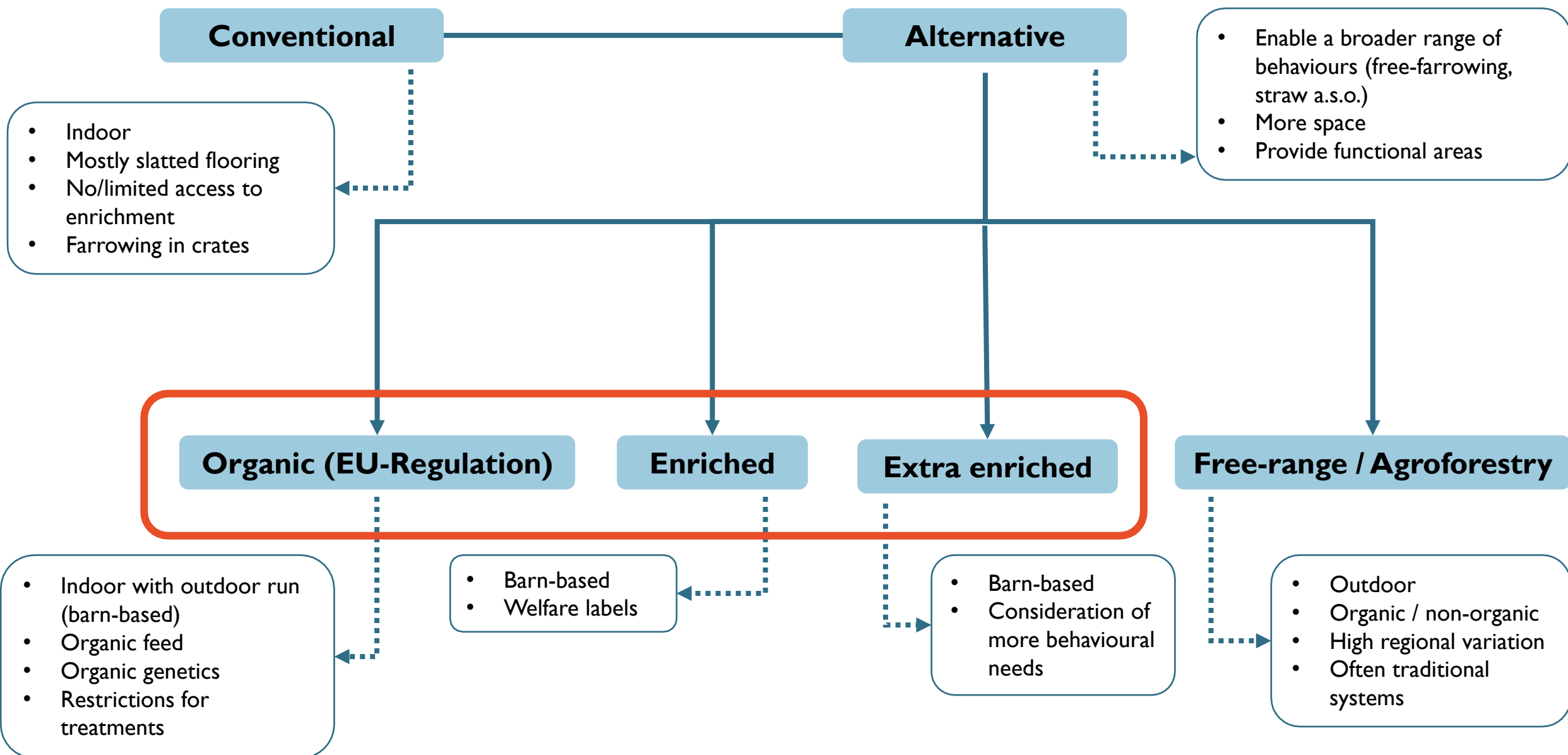




## Alternative housing systems

Source: Barbara Früh

Source: Big Dutchman





**Organic (EU-Regulation)**

**Enriched**

Is organic pig production better in terms of health and welfare?

**Extra enriched**

How can „barn-based“ systems enable an even broader range of behaviours?



What are the open questions for research?



Source: Marion Nitsch

# Organic pig production



- Baseline: EU-Regulation 2018/848
- Variation according to national associations
- Organic feed
- Restrictions for chemically derived allopathic medication
- Access to an outdoor area
- Free-farrowing
- Provision of straw
- Weaning with minimum 40 days



Source: [www.miniatur-wunderland.de](http://www.miniatur-wunderland.de)



# The three dominant systems in European organic pigs



Health indicators	Indoor with outdoor run	Partly outdoor	Outdoor
Lame sows	↑	→	↓
Respiratory problems (weaners and fatteners)	↑	↑	↓
Weaning diarrhea	↑	→	↓
Short tails / tail lesions	↑	→	↓
Suckling piglet losses	↑	↑	↑

# Are organic pigs healthier?

Health indicator	Organic / enriched (barn-based)	Conventional	Source (e.g.)
Parasites	-	+	Eijck et al., 2005; Baumgartner et al., 2003; Früh et al., 2014

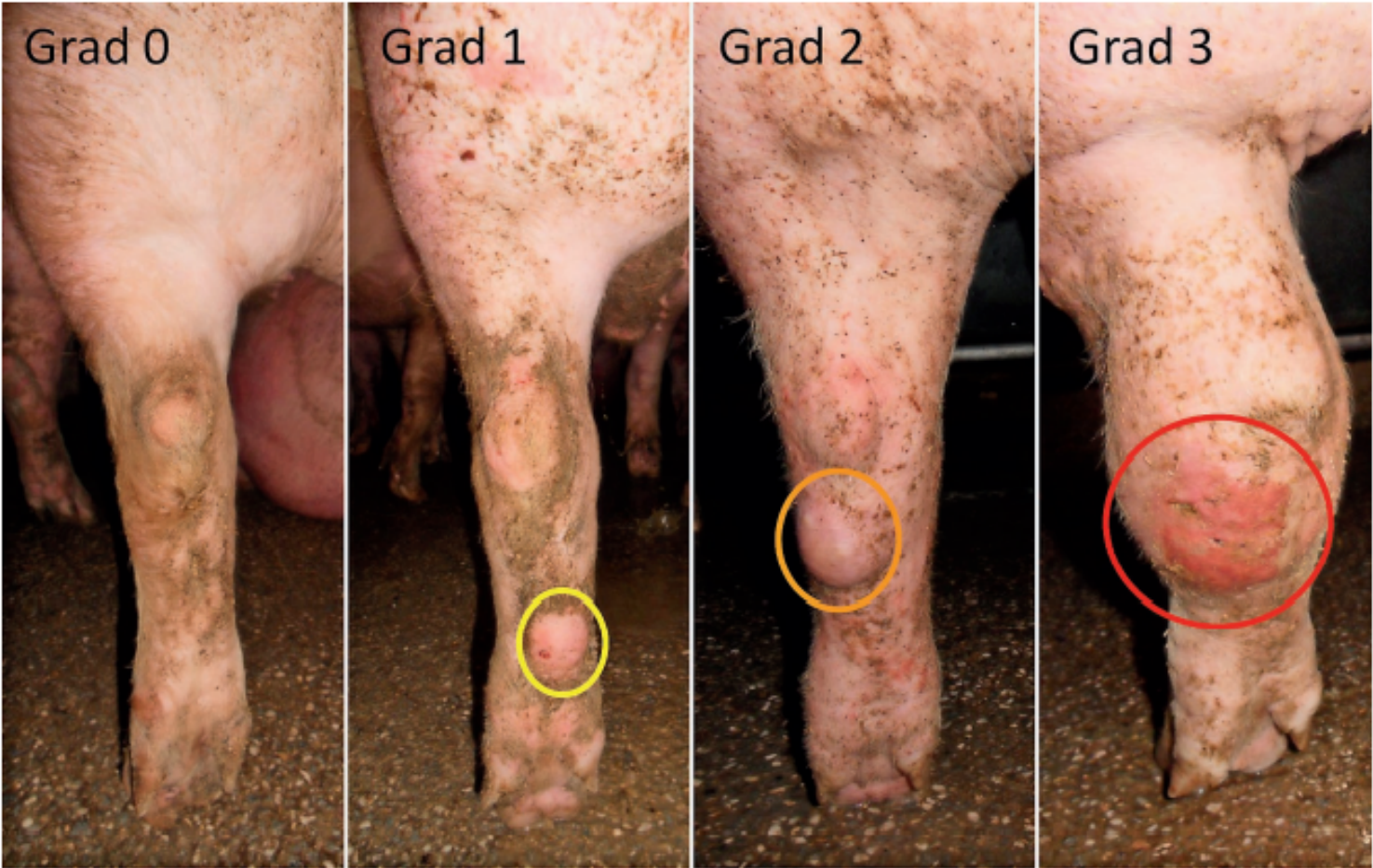


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# Are organic pigs healthier?

Health indicator
Parasites
Tail lesions
Osteochondrosis
Auxiliary bursae
Claw lesions



ce (e.g.)
mgartner et al., 2003;
ocking; ban et al., 2015
2011; Jorgensen et al., 014
rgensen et al., 2003

**ABBILDUNG 1:** Erfassung von Hilfsschleimbeuteln bei Mastschweinen gemäß Boniturschema der Tabelle 1. Ansicht der linken Hintergliedmaße von kaudal.



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Osteochondrosis	+/-	+/-	Van Grevenhof et al., 2011; Jorgensen et al., 2003; Etterlin et al., 2014
Auxiliary bursae	+	-	Gareis et al., 2016
Claw lesions	+	-	Cador et al., 2014; Jorgensen et al., 2003
Risk of infections	-	+	

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Claw lesions	+	-	Cador et al., 2014; Jorgensen et al., 2003
Risk of infections	-	+	
Abundance of antibiotic resistant genes and bacteria	+	-	Österberg et al., 2016; Zwonitzer et al., 2016



# Is welfare of organic pigs better?

Five freedoms (UFAW)		Organic / enriched (barn-based)	Conventional
Absence of hunger and thirst	Feed and water provision	=	=

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	Thermoregulation	+/=	=
Absence of pain, injury and illness	Tail docking, teeth clipping	+	-



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Absence of hunger and thirst	Feed and water provision	=	=
Absence of discomfort	Bedding	+	-
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Absence of pain, injury and illness	Tail docking	+	-
Freedom to express normal behaviour	Exploratory behaviour	+	-
	Activity	+	-

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Freedom to express normal behaviour	Exploratory behaviour	+	-
	Activity	+	-
Absence of fear, stress and anxiety	Age at weaning	+	-
	Transport, slaughter	=	=

## Extra enriched – Taking care of neglected behaviours

- Organic / enriched housing enable a broader range of behaviours
- BUT: Some species-specific behaviours are hardly or not possible to be displayed

### Rooting


- Species-specific
- Foraging, exploration, preparation of lying place

### Wallowing

- Thermoregulation, sunburn prevention, ectoparasites
- Associated with other comfort behaviour

### Feeding

- Browsing, grazing, scavenging.....
- Long duration



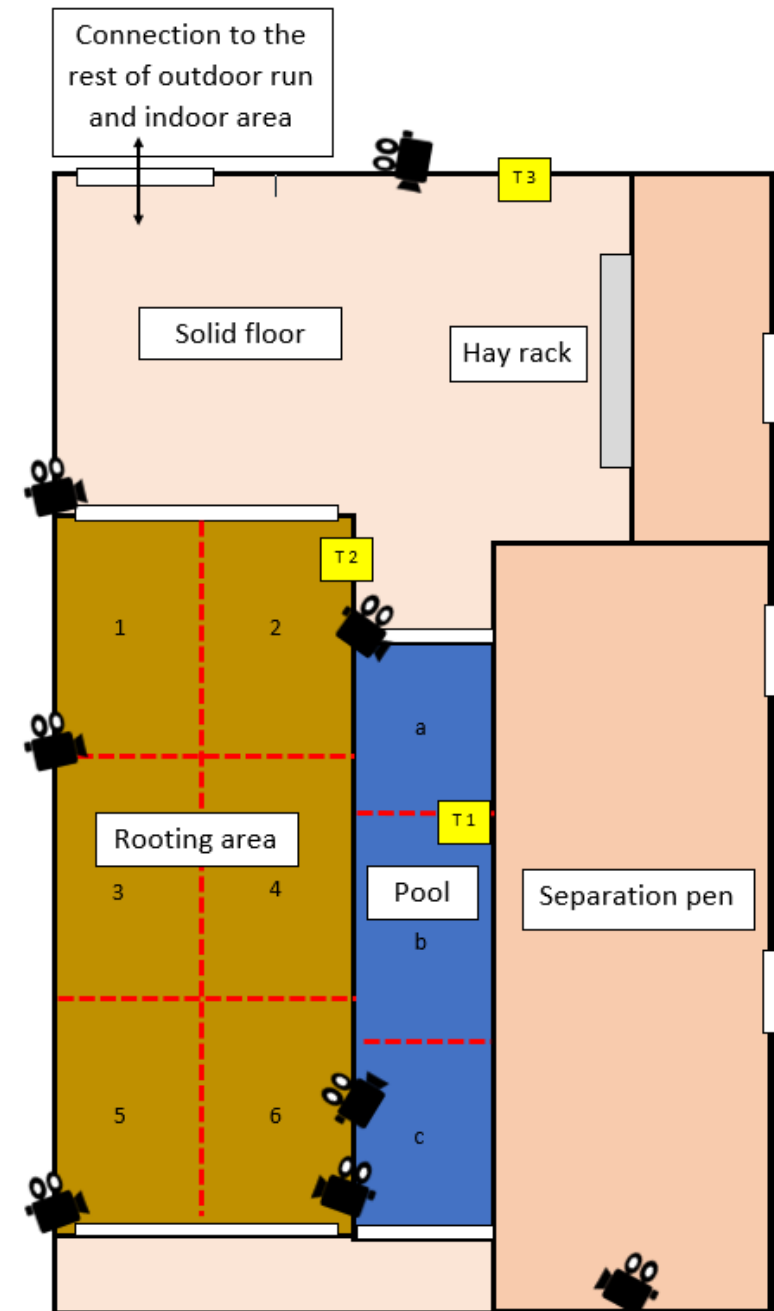
Housing example 1 and 2  
provide resources for rooting  
and wallowing



## Extra enriched – Example I



Source: Pascal Hoffmann

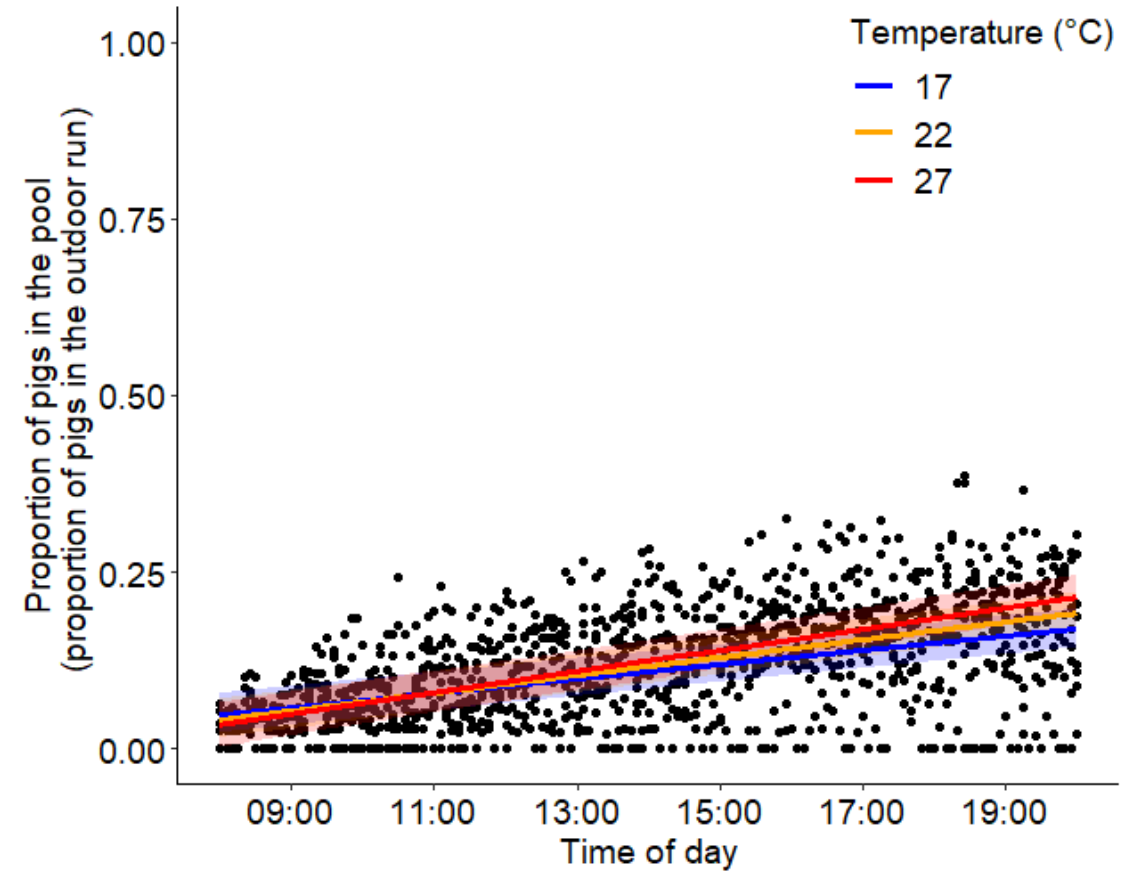
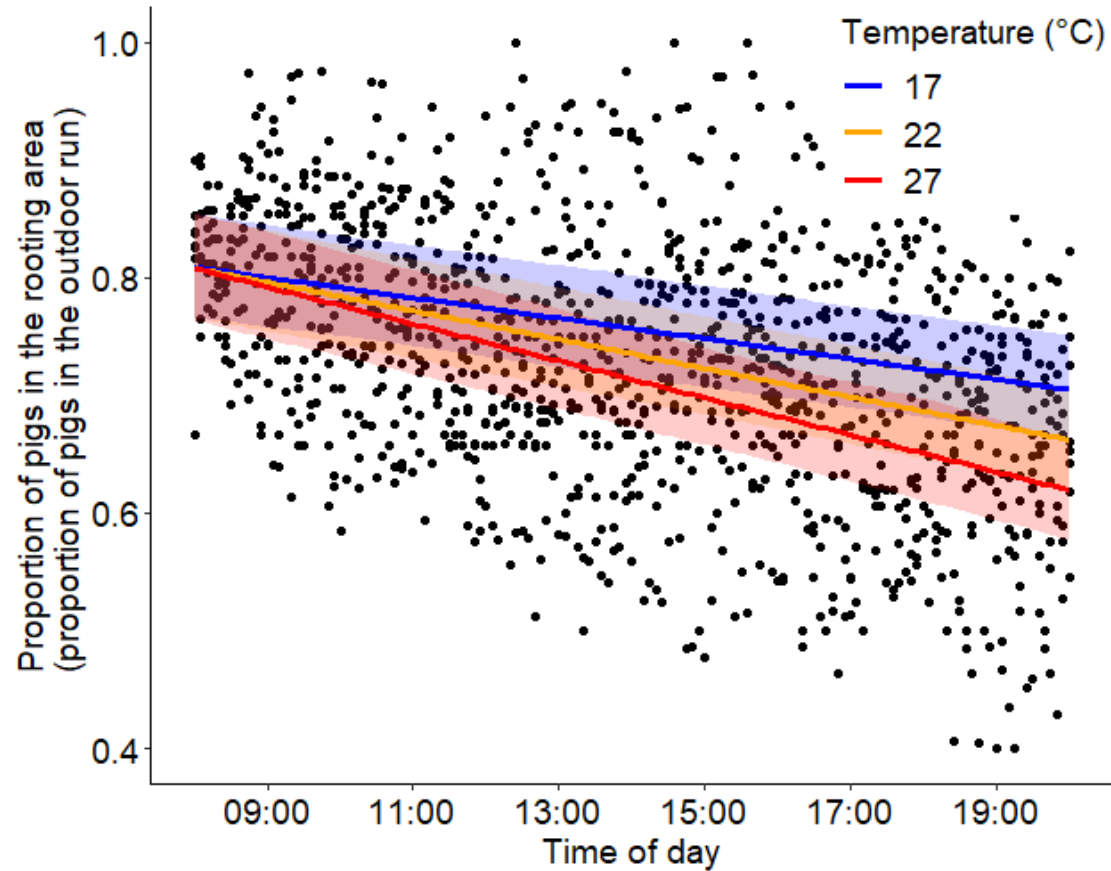




## Extra enriched – Example I



## Example I – Usage of areas



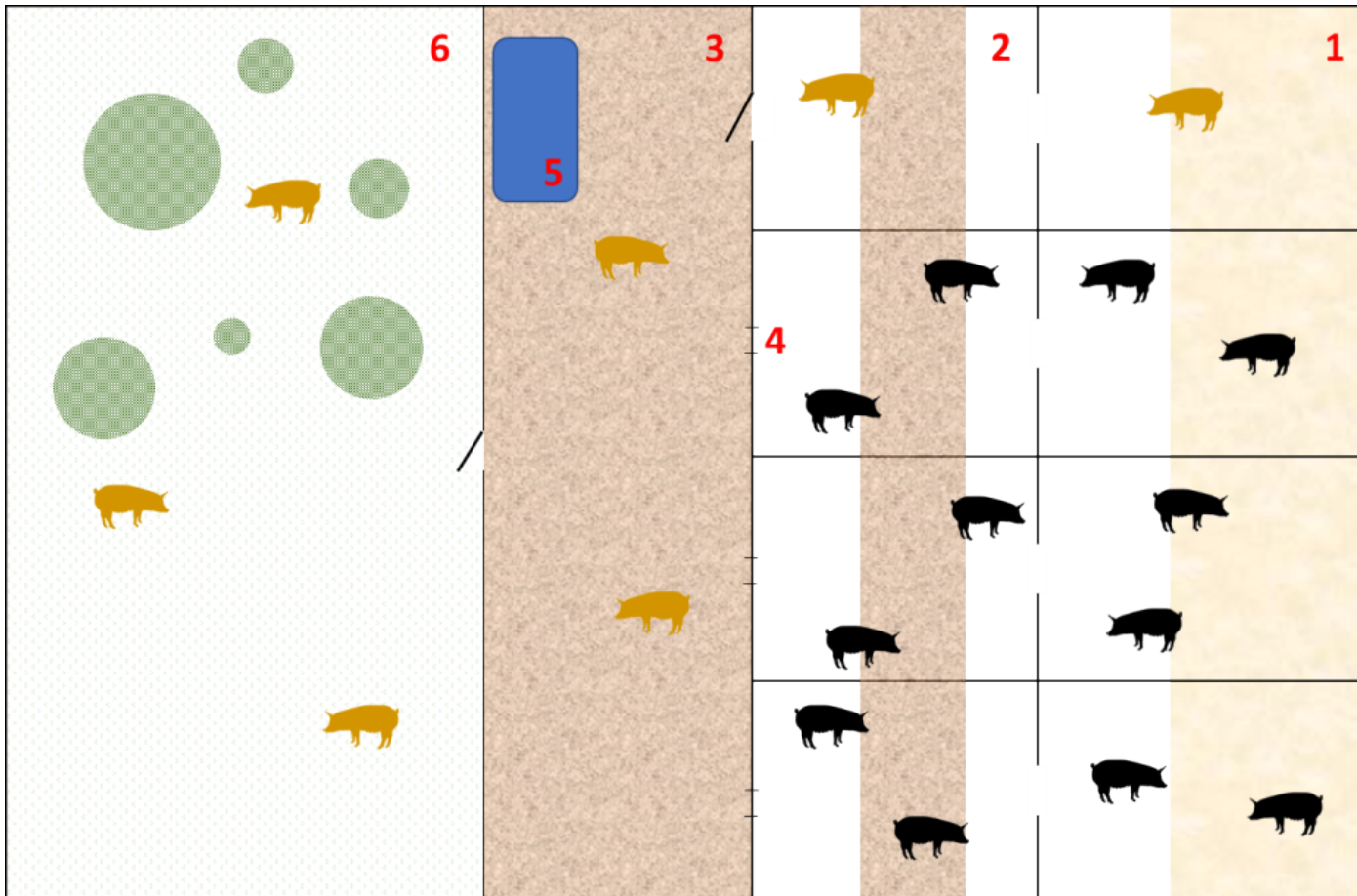


## Extra enriched - Example 2 - Wiesenschwein („pasture pig“)

- Growing-finishing pigs
- Aim: High welfare standards for medium to large farms
- Temporary access to additional resources (rooting area, pool, pasture)
- Fully automated system with RFID ear tags and image detection
- [www.wiesenschwein.ch](http://www.wiesenschwein.ch)



## Extra enriched - Example 2 - Wiesenschwein („pasture pig“)



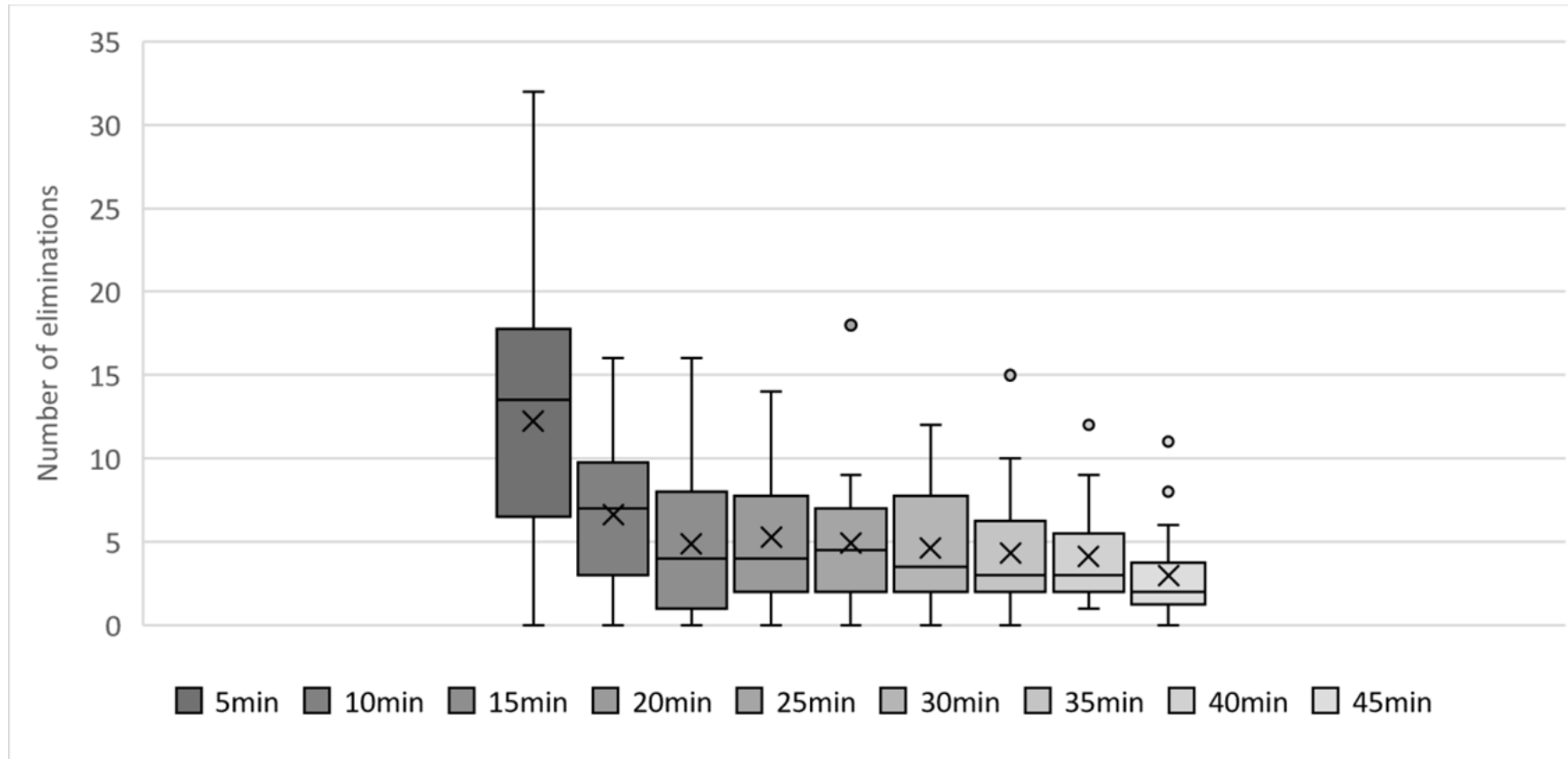
- 1 Indoor area with littered lying area
- 2 Permanently accessible outdoor run
- 3 Temporary accessible area (roofed)
- 4 Automatically controlled gate
- 5 Pool
- 6 Temporary accessible pasture with trees





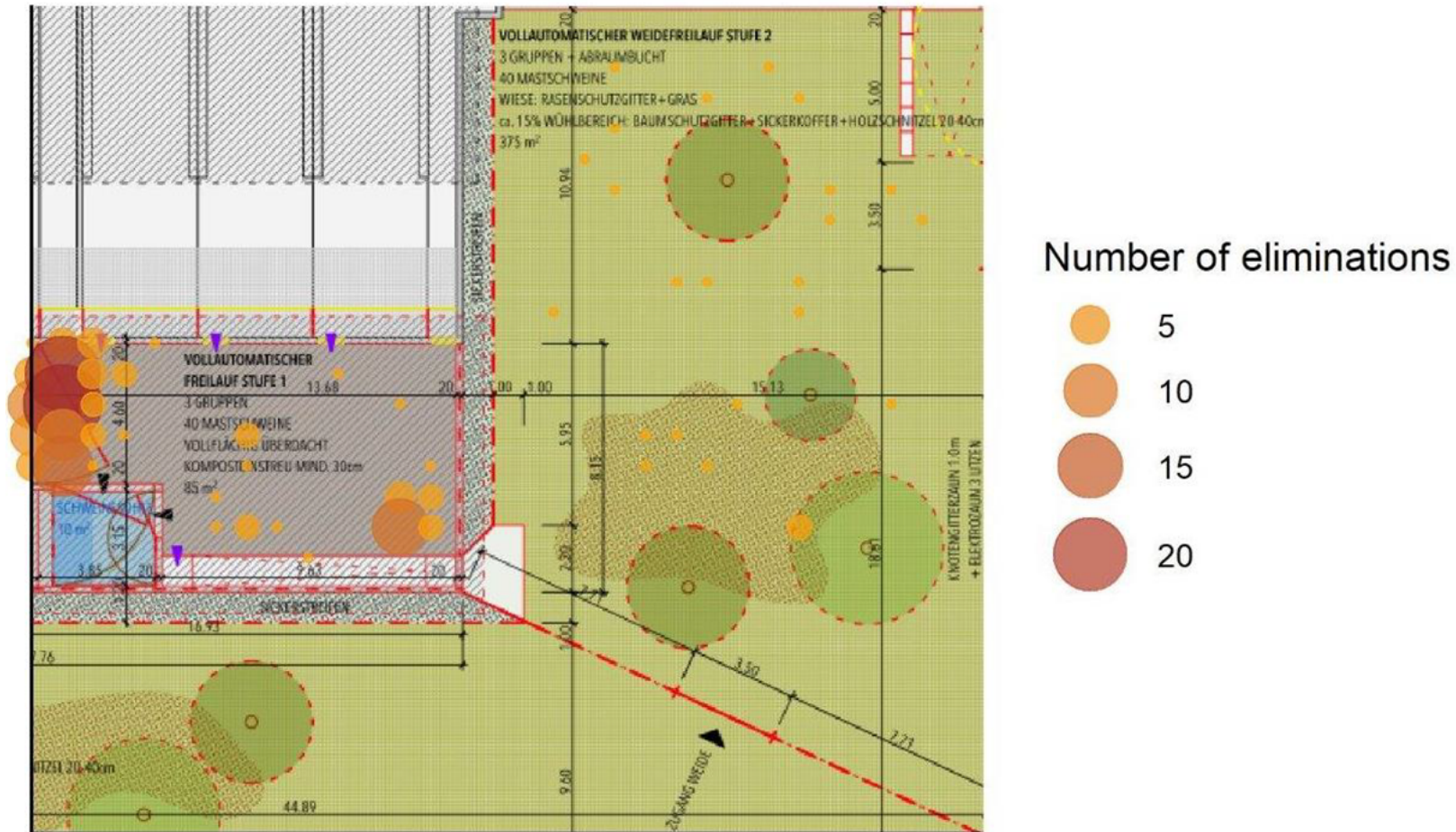


## Example 2 - Eliminations



Minutes after opening the gate

## Example 2 - Eliminations



## Open questions for research

- Importance of wallowing and rooting for pigs. Depending on age, temperature and previous experience
- Provide species-specific feed sources (composition, quantity, feeding technique)
- Control of elimination (specific functional areas, „toilet“)
- Adapted breeding schemes

Rooting

Wallowing

Feeding

## Take home messages

- ✓ Huge variation in organic and enriched housing systems
- ✓ Pigs from alternative systems are healthier for some indicators, but not for others
- ✓ Overall welfare, especially regarding behavioural opportunities, is higher
- ✓ Extra enriched systems enable additionally rooting and wallowing behaviour
- ✓ Management of such systems remains a challenge in practice

# Contact

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Source: Helen Zobrist



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