

Swine Reproduction Series:



Breeding Stock Care - Housing

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For pigs- housing is absolutely necessary

- Changing weather



For pigs- housing is absolutely necessary

- Changing weather
- Changing seasons



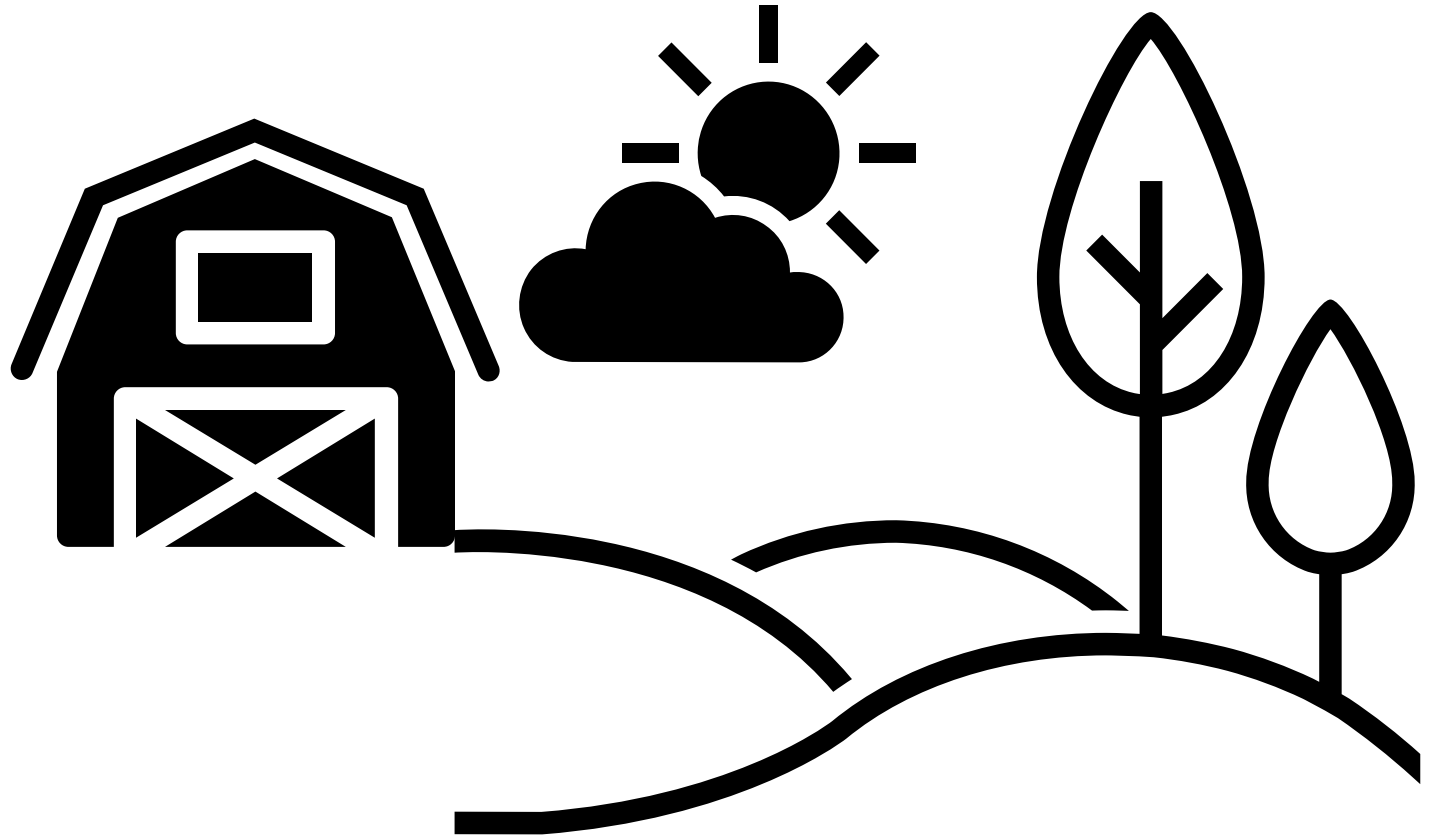
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- Changing weather
- Changing seasons
- Lack of physiological resistance



For pigs- housing is absolutely necessary

- Changing weather
- Changing seasons
- Lack of physiological resistance
 - No Sweat Glands
 - Sunburn



For pigs- housing is absolutely necessary

- Change of climate
- Extremes are not a pig's friend



Identify the 'ideal' then adjust

- **Thermal neutral zone.**

- Environmental temperature range that allows the pig to prioritize feed nutrients for building meat or reproductive tissues
- Notably narrow in pigs
- Variation across breeds and lineage - true across breeds in meat (**tissue**) production
- Most mature pigs are comfortable between 50-75°F

In the cold, heat is high maintenance

- Mature pigs can handle cold temps
 - Always trade offs
 - Remember – stock(wo)men want animals to THRIVE not just SURVIVE
- Temps below ~40-50°F
- Tissue production (meat, offspring)
- Heat production (maintaining body temp)
- How does this impact pigs during cold temperatures?
 - Small pigs struggle quickly, risk death
 - Holding heat produced
 - Increasing digestive processes

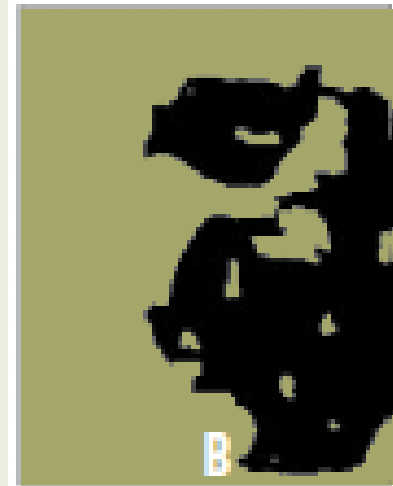
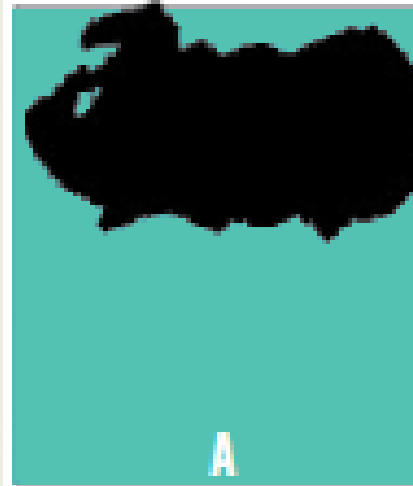


When is a pig cold?

- Hair grows/stands up
- Huddle together
- Burrow into straw
- Don't want to leave housing
- Thin, yet...
 - Eat more
 - Drink more

Figure 5.1: Thermoregulatory Laying Postures of Swine

The images in Figure 5.1 portray the normal thermoregulatory laying postures of pigs in an environment with three different air temperatures. Take note of the pigs in relation to each other, as well as the amount of free space within the pen. *Image A* depicts a pen of 10 pigs in an environment with cold air temperature. These pigs huddle very close together in a dense pile in one area of the pen. *Image B* depicts a pen of 10 pigs in an environment with ideal air temperature. These pigs have body contact with each other but do not pile excessively. *Image C* depicts a pen of 10 pigs in an environment with hot air temperature. These pigs spread out throughout the pen and avoid physical contact with other pigs in the pen.

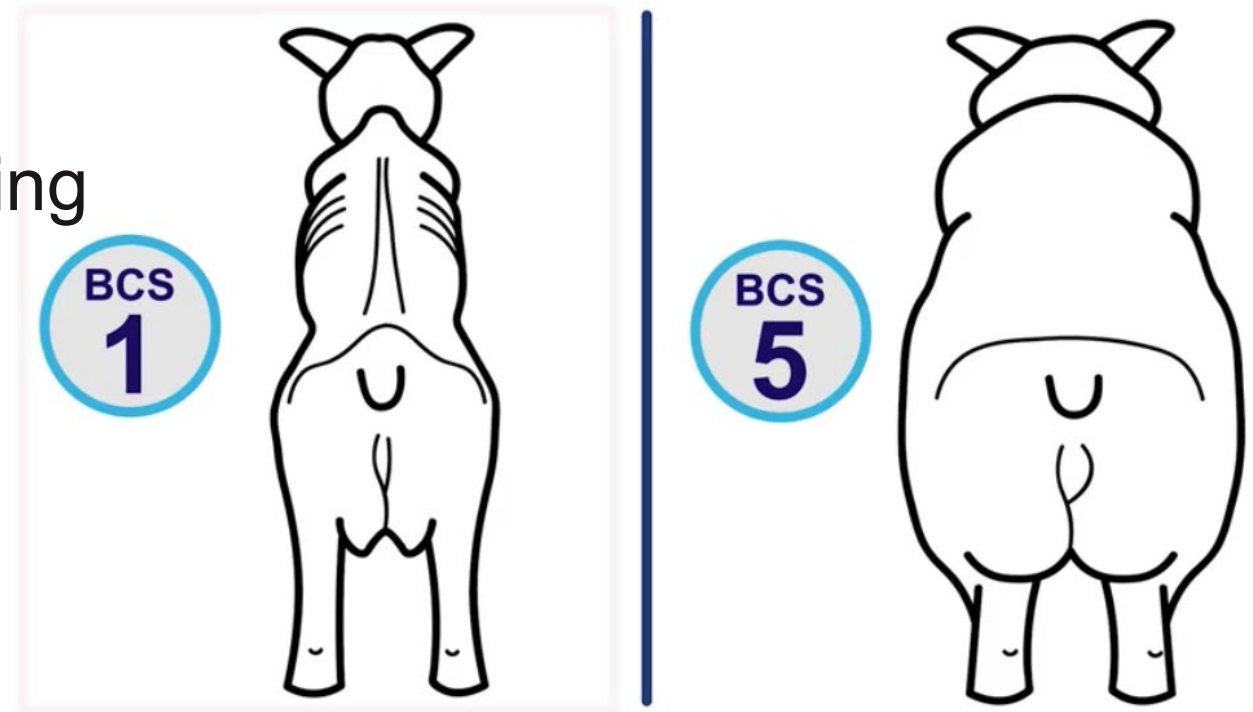


Taken from Shao et al., 1997, in volume 40 of the Transactions of the American Society of Agricultural Engineers.



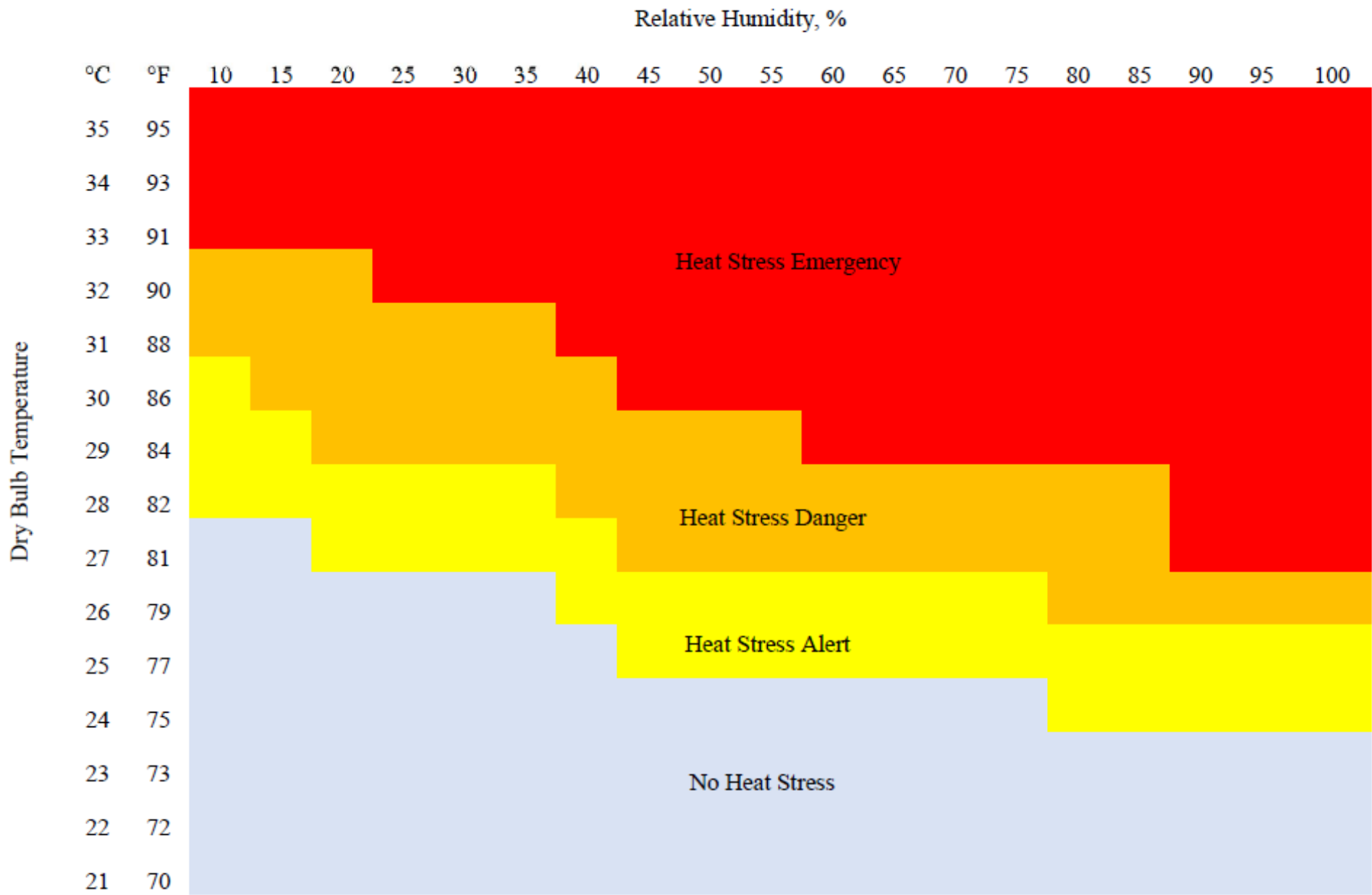
Housing should hold heat in winter, lower pig maintenance

- House sows together whenever possible
 - Keep fighting down, share body heat
 - Exception for farrowing
- Keep boars separate
 - Energy spent fighting or mating
- Body condition scoring
 - Muscle condition
 - Fat Cover



In the heat, cooling critical

- Once temperatures exceed 80°F, pigs over 100 lbs. can very quickly move into life-threatening levels of **heat stress**
- Primary physiological goal maintaining body temp
 - Pigs don't sweat
 - Dense animals, low surface area/weight ratio
- Tissue production gives off a lot of heat – so it slows or stops
 - Muscle breaks down
 - Intestinal tissue can die (literally)



When temperature and humidity rise together, the chance of heat stress on grow-finish pigs increases (adapted from Livestock Industry Facilities and Environment: Heat Stress Indices for Livestock, Iowa State University, 2002).

When is a pig hot? (in heat stress?)

- Activity increases at night (when cool)
- Seek and 'waste' water
- Panting, sitting, lethargy
- Eating will be low priority
- Vomiting



Reproductively speaking

- Prolonged cold, inducing weight loss, offspring loss
- Heat
 - Sperm death, 30-60 days of poor-quality sperm
 - Oocyte breakdown
 - Low litter sizes
 - Reduced farrowing rates
 - Inhibited estrus expression
 - Prolonged anestrus

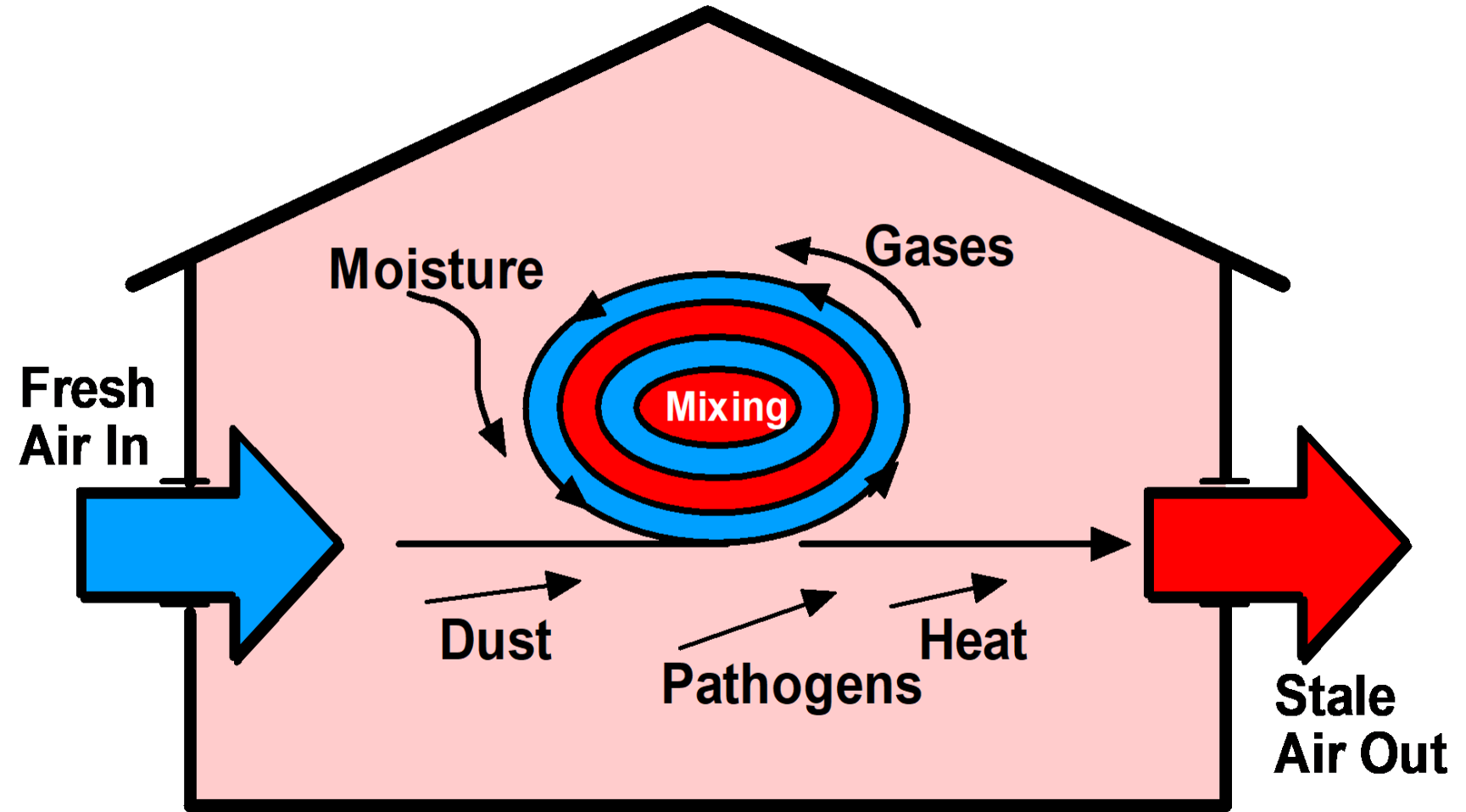
Ideal housing



Ventilation Matters

- Air movement
- Air movement
- Air movement

Air Exchange



Air Distribution

Housing specs

- Roofing
- Access
- Air flow *(did I say that enough yet?)*
- Insulation
- Drainage
- Flexibility
- Meets your needs!
 - <https://www.ag.ndsu.edu/extension-aben/buildingplans/swine>

Pastures and Wallows

- Pastures are **not** housing
 - Doesn't make them always inappropriate
 - Doesn't make them always appropriate
- Wallows
 - If you use them, *manage* them
 - Damage to ground
 - Water wastage
 - **Pathogen hub**
 - Brucellosis
 - Leptospirosis



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Reproductively – biggest concern



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Regardless of temp...

- Keep it dry
- Keep it insulated
- Let air flow
 - Even in the winter
- Build sturdy
 - Less big-bad-wolf
 - More bored-destructive-pig
 - Extreme weather



Questions?



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