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Early weaned pig care in large system: Back to basics

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How often does a newborn human perish because it is too cool, drafty, starved, or diseased? In the US, infant mortality rates are about 0.7%. In contrast, swine producers lose 2-10% of newborns after pigs are weaned. These rates are unacceptable; it is never “normal” for newly weaned pigs to die.

The condition and management of many wean-finish facilities does little to maximize pig survival rates. Some common problems in wean-finish barns include the following:

- Floor mats are heavy and, as a result, don’t often get turned or replaced.
- Oversized BTU tube heaters heat up the whole room except in coldest of winter. This leads to dirty, wet mats in transitional weather as pig can’t decide where to lay.
- Producers do not spend the time to feed multiple times per day to keep feed fresh.
- Pigs lay in big wean/fin feeders and soil the feed.
- Feeders have a days worth of feed in them, absorbing odors and moisture.
- Many pigs don’t get adequate fresh water.
- Pigs are often wet and cold due to poor dunging habits, wet mats, low barn temperatures.
- Divided attics lead to end-to-end humidity variations when on minimum ventilation.
- Sick pens are often overcrowded, too small to promote separate sleeping, kitchen, and bathroom areas.

The first step in decreasing pig mortality rates is to insure that the animals’ fundamental environmental and nutritional needs are met.

Environment

Temperature is a critical environmental variable. The following points should be kept in mind:

- There is a range of acceptable temps.
- Temp needed varies by body weight.

- A sufficiently warm pig’s hair lays flat.
- A sufficiently warm pig lies out flat on its side, not tucked up on it’s belly.
- A small, off feed pig can’t get too warm.
- Whatever the thermometer says, pigs aren’t warm enough until they look warm enough.

Remember that the ambient temperature in the barn is not the whole thermal story. Conductive heat loss due to flooring effect, evaporative heat loss due to wetness, convective heat loss due to air movement, and radiant heat loss via walls and curtains must also be considered.

Because pigs can huddle, shiver, and burn fat to generate heat, pigs with greater body mass tend to have lower minimum temperature requirements. **Table 1** shows the lower critical temperature (the temperature at which pigs begin to show signs of discomfort) for a range of pig weights.

Table 2 shows approximate adjustments that should be made to ambient temperatures to compensate for various environmental conditions. Contact with dry rubber or plastic is thermally neutral; moisture on any flooring type effectively lowers the temperature by 10° F. All barns have at least some air movement that results in a minimum chill factor of -5° F. Electric lamps and straw can be used to effectively raise temperatures. **Table 3** shows how these factors can work together to either improve or degrade the environment.

Diligent management of floor mats can help maintain a healthy environment. Mats should be kept absolutely dry. Wet mats should be pulled out and replaced with dry ones, or mats can be flipped over to expose the dry side. Barn

Table 1: Lower critical temperatures (LCT) for a range of pig body masses.

Weight (lb)	LCT (°F)
5	90
10	85
15	80
20	75
30	70
40	65
50	60

Table 2: Approximate ambient temperature adjustments for various environmental conditions.

Environmental factor	Effective Temp (°F)
<i>Flooring type</i>	
Dry concrete slats	-5
Dry rubber/plastic mat	0
Dry wire flooring	-5
Dry plastic flooring/rubber coated wire	0
Wet floor of any type	-10A
<i>Air movement</i>	
0.5 fps (all barns have at least this)	-5
1.0 fps	-10
1.5 fps	-15
<i>Other factors</i>	
Gas brooders/tubes directly over pigs	+10 to 15
125 W lamp, 32" over pig	+10
Dry straw, pig 75% submerged	+40

^AIn addition to any dry-floor adjustment.

Table 3: Effective environmental temperature (EET) under two scenarios.

Scenario 1		Scenario 2	
Factor	Temp. or adjustment (°F)	Factor	Temp. or adjustment (°F)
Ambient temp.	70	Ambient temp.	85
Dry mat	0	Wet mat	-10
0.5 fps draft	-5	.5fps draft=	-5
No lamp	+10	No lamp=	0
Tubes on	+10	Tubes off=	0
EET	85	EET=	70
Result	Happy pigs	Result=	sick pigs

lime can be used daily, if necessary. Heat lamps not only raise the effective ambient temperature, but have the added benefit promoting dry mats.

The bottom line is this: If a pig is not smooth haired, is piling more than 1.5 pigs deep, and looks cold, it probably is cold.

Nutrition

Needless to say, access to adequate fresh feed and water is a critical component of a high-health operation. Fresh feed can be provided in a couple of ways. Small volumes of feed can be supplied 4-5 times per day. The idea here is to provide exactly the right amount of feed so that it runs out just before the next feeding. Alternatively, automated feeders can be used. These systems keep a small amount of fresh feed in a bowl or hopper that pigs cannot urinate or sleep in. After moving pigs to continual access system, you should mat feed four times per day for the first 3-5 days or until you are certain the pigs have found the feeder.

Maxitainers (Rotecna Corp, Lleida, Spain) are an excellent semi-automated watering option. The newer model

with the softer rubber gasket makes sealing easier, and applying petroleum jelly to the gasket insures a leak-free fit. These waterers can be modified by drilling a 1" hole in the cover and sealing the hole with a removable rubber stopper. The containers can then be filled easily through this hole. Maxitainers should be filled at least twice a day to keep water cool; allow about 1/5 gallon of water per pig per day. Bluelite (Stewart, MN) should be added to the waterers for 2-3 days until pigs begin consuming feed.

Remember that getting small pigs up and off the mat to feed and water is important. This keeps their intestinal tract moving and makes them feel better. It also allows you to observe their progress.

Here are a number of feeding tactics that we have determined to be effective on the bottom 5% of pigs:

- Use Prestarter (bagged) for all pigs sorted into the light pens.
- Feed 1 lb for each lb the light pits are under 10 lb.
- They will eat 0.25 lb/day/pig.
- Deliver 0.167 lb of prestarter per pig space.

- A 12,000-head site gets 2000 lb; an 8000-head wean-finish site needs 1500 lb per site.
- Our nursery sites use existing feeders and put no feed in the feeder via the feed line. All are bag fed by hand four times per day spread across the day for the first 4-5 days. Late pm feeding needs to last until morning. At same time, throw a handful of feed on the mats.
- Feeders should be licked just clean before the next feeding. If they are not out, reduce the amount fed. After 4-5 days when they are eating well, you can go to adlib feeding.
- Make sure feedlines do not contain old feed from last group when starting pigs on 41.
- Have one bag of dry milk replacer or similar (Akey Pig Gruel) to get starves interested in the feed and use it dry.

Other considerations

Lite pig stocking

- Minimum 3 sq.ft. per pig.
- Bigger, area defined pens.
- Mat space= .35 sq.ft./pig minimum. (all pigs must be able to sleep on mat together laying flat).
- 1-125 watt heat lamp per 35 pigs maximum hung at 36" and adjust to maintain mat at 100°. (Clean bulb).

Pen configuration

- Defined sleeping area all in one spot.
- More distance between mats and water and feeder keeps mats drier/cleaner.
- Pig gets up and walks to feed/water and usually dungs in same trip.

Example barns (wean-finish, cement slats)

- Each pen 9' X 24' (216 sq.ft.) can have 72 pigs per pen maximum.
- Black mat next to the center gate under the brooders providing .35 sq.ft./pig minimum.
- 2 -125 watt heat lamps hung over each mat.
- Maxitainer water placed >10 feet from mat.
- Maxi-hopper feeder placed 6 feet away from mats and 3-4 feet away from the water.

Nursery pens

- Open up two pens by pulling feeder and placing at far side of one pen or by pulling out the center di-

vider to make one bigger pen holding 50-60 pigs per enlarged pen.

- Place water as far away as possible from the mat.
- Leave feeder empty and hand feed in it several times per day.
- Provide .35 sq.ft. per pig mat space in 1/2 of pen away from the feeder and water with two 125 watt heat lamps over the mats.

Normal flow sorting

- Day 1 sort: Sort off all pigs under 8#.
- Plan for 3-5% sort day 1.
- Days 2-5: sort fallouts daily to lite pen.
- Day 4-5: Do an intensive starve search.
- Plan for a total of 10% total lite pens.

Tough flow sorting:

- Day 1 sort: Sort off all pigs under 8#.
- Plan for 6%+ sort day 1.
- Days 2-5: sort fallouts daily to lite pen.
- Day 4-5: Do an intensive starve search to find pigs that are gant and haven't learned to eat.
- Plan for a total of 15% total lite pens.

Equipment needs

- 8000 head W-F site: 8-16 heat lamps, 8-16 waters and bowls, 8-16 hopper feeders and bowls, cords, surge protectors. 8-16 Coroplast mats.
- 12,000 head nursery: 12-24 waters and bowls, heatlamps, mats, only need hopper feeders if pigs can sleep in current feeders.

Graduating pigs

- Lites that get a full belly(maybe up to the top 1/2 of the lites at 5-7 days) can usually be graduated so they don't bully the smaller half. If the whole pen is better without variation leave them as is.

How to provide this early pig care

- Should I provide the labor =\$\$\$
- Contract growers provide labor= dependability???
- Critical to grade and sort day 1. Too important to leave to chance. I have chosen to employ the help to assist contract producers the first days post weaning.

