
Reducing Pre-Wean Mortality: What Can I Do?

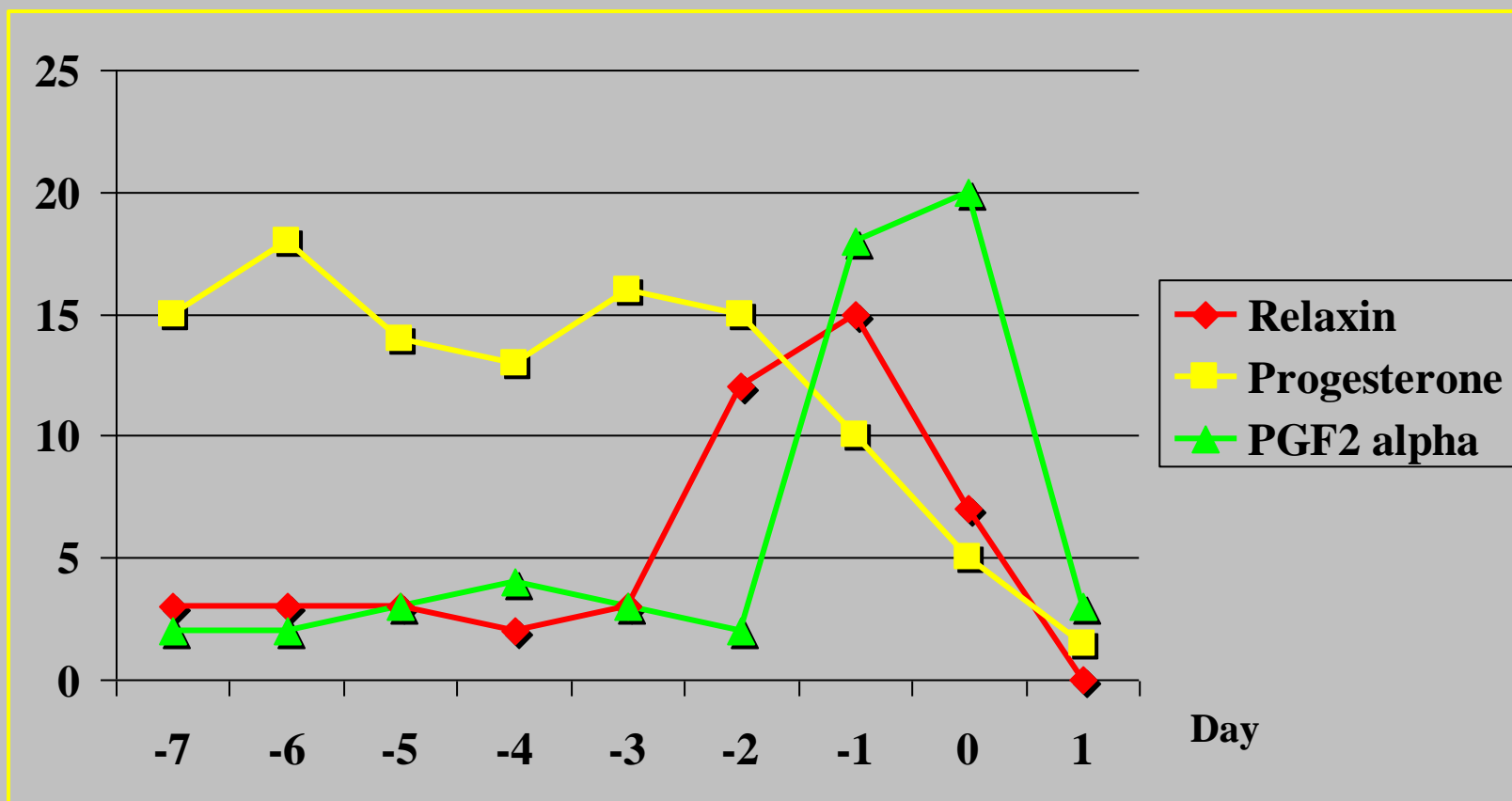
David K. Bishop
Reproductive Design Services

Natural Events at Farrowing

- Pigs grow exponentially in cramped space
- Stress hormones signal luteolysis
- Progesterone declines
- Relaxin increases
- Prostaglandins cause contractions
- Piglet stimulation releases oxytocin
- Farrowing events continue
- Lactation begins

Hormone signals can come from different sources.

Hormonal Cascade Associated With Normal Farrowing



Induce to clean-up the day's "due to farrow. Early induction and small litters cause poor lactating sows. Pay attention to breed day, average gestation length and visible signs that farrowing is near.

Possible Effect of High Levels of Plasma Progesterone Postpartum (incomplete or early induction)

- Higher incidence of endometritis
 - Postpartum discharge
 - Early embryonic mortality
 - Reduced feed intake by sow
 - Negative effect on lactation by reducing prolactin production
 - Inhibit release of LH
 - Extended wean to estrus interval
-

Uterine infections after inoculation of the uterus with 5×10^7 CFU *E. Coli* (De Winter et al., 1992)

	Discharge	Bacteriology	Histology		
<u>Estrus</u>					
1	0	0	0		
2	0	0	1		
3	0	0	0	“Small amounts of Progesterone facilitate uterine infections.”	
4	0	0	0		
5	0	0	0		
<u>Early metestrus</u>					
1	++	+++	2		
2	++	+++	2/3		
3	0	0	0		
4	0	0	2		
5	+	+++	2		

Discharge: traces (+) to large quantity (++);

Bacteriology + (1-10 colonies) to ++++ (more than 300 colonies).

Histology: moderate acute (1) to chronic (4)

Where does mortality begin?

- Understand flow of your farm – how day of service impact farrowing strategies
 - Wean based on pushing sows out – not breeds
 - Use information available to reduce work
 - Average gestation lengths
 - Born-alive by day of service
 - Expected performance by Parity of group
 - BVSP and a 0-wean program
 - Adjust (correct) plan when groups are short
 - Number placed per litter
 - Empty crates do not produce pigs (pigs per crate)
 - Always – some sows are not capable of nursing – do not allow 1 sow to have $\frac{1}{2}$ of the mortality in a room

Where does mortality begin?

- **Pre-farrow sow considerations**
 - **Condition**
 - **Lameness/lesions**
 - **BVSP (history)**
 - **Visual inspection (big belly = more pigs)**
 - **Feedback and Vaccines create Colostral ABs**
 - **Feedback**
 - **multiple times (5 and 3 weeks out on gilts: 3 weeks on sows)**
 - **Adequate amounts**
 - **Fresh, quality products**
 - **Vaccinations according to Schedule**
 - **Farm Specific**
 - **Challenge specific**
 - **Quality handling and administration**
 - **Compliance and Sustainability (even when scours die)**
-

Where does mortality begin?

- **Load Rooms Tightly**
 - **No empty crates**
 - **Loaded by due date**
 - **Gestation length considered**
 - **Size of current litter**
 - **Breeding program**
 - **Maximum potential wean age**
 - **Date Weaned Sows farrow (+ 16 & 3)**
 - **Off rooms hold the age spread**
 - **Farrowing week differs from Serve week**
 - **Ventilation maxes out with 3 day spread**
 - **Count on supplemental heat for “late” pigs**
-

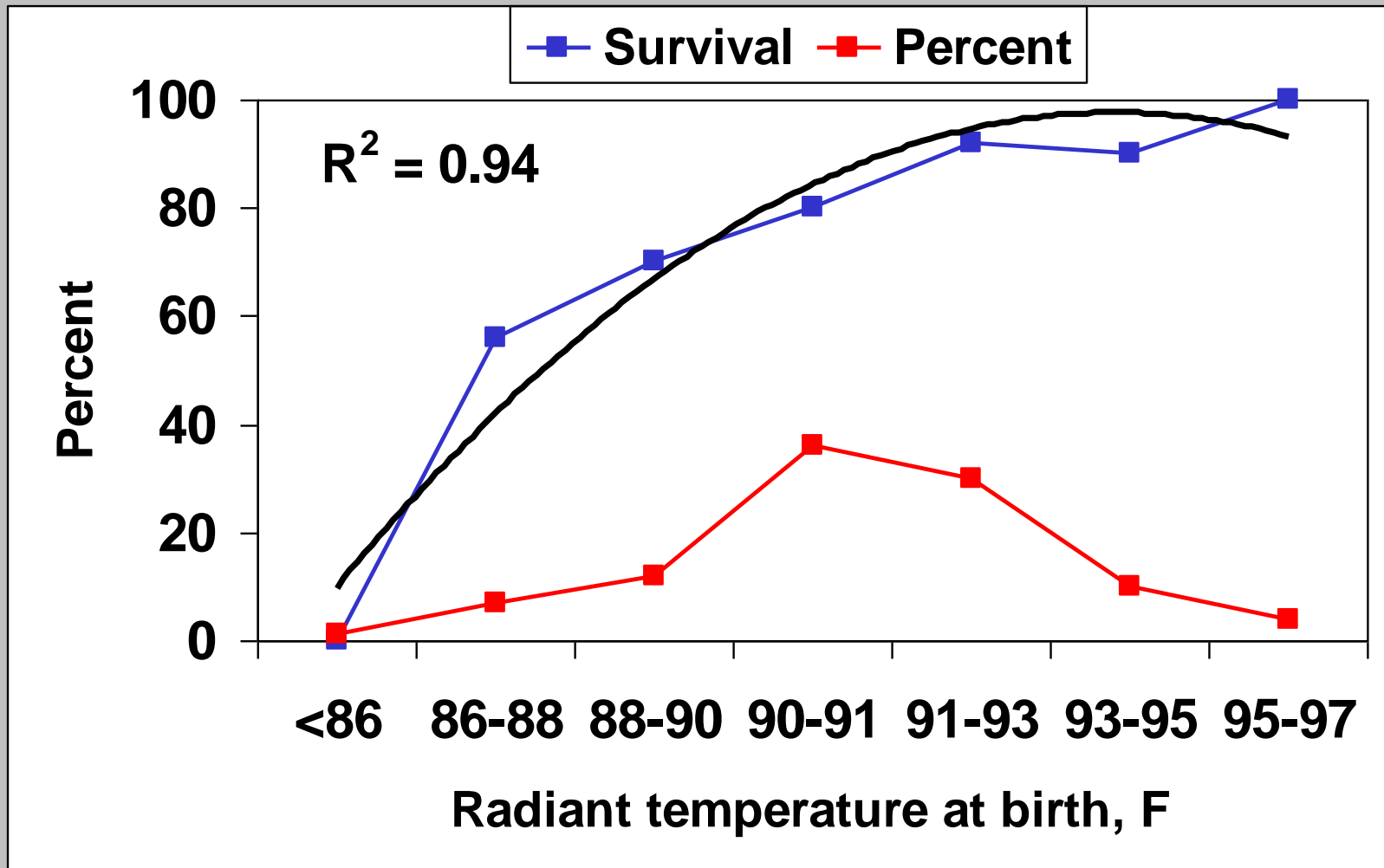
Avoid Stress and Trauma to Sows

- **Set-up the room before loading begins**
 - Clean and disinfected room: top to bottom
 - All water drained from feeder
 - Water nipple flowing (1 liter per minute; min.)
 - Doors, gates and feeders in place
 - Quick inspections here avoid scours or pigs lost
 - **Supervisor designate the sows to load**
 - **Clear the path**
 - Remove all dead, junk and obstacles
 - Move Small groups (5 per person) carefully
 - They are pregnant
 - They are carrying your paycheck inside them
-

Maintain the farrowing environment

- **Use the ventilation system correctly**
 - **Set desired temperature with expected farrowings**
 - **Prepare inlets for air on sows – no drafts**
 - **Insure all litters have a working heat-lamp (90⁰ at pig)**
 - **Check that fans and heaters work after washing**
 - **Scrape daily behind sows (day -1 through 2 after farrowing) – preserve washing efforts**
 - **Use drying agents on crates when leaving each day**
 - **Minimize traffic/noise when sows are farrowing**
-

Consider weight and temperature of pigs



Your impact is on getting good pigs warm and full!

Hot-Box Concepts

- **Stimulation of a pig trying to nurse reduces the length of farrowing**
 - Do not pull the 1st pigs too early (get 6 then box)
 - Assist pigs finding the udder (massage > Oxytocin from a bottle)
 - If 6 pigs or more are present when you start work- box them and assist sow to complete (save colostrum for last pigs)
 - If more “induced” sows farrow after the crew leaves each day – change induction time (28 hr)
 - Do not leave pigs more than ½ hour unattended in the box
 - Do not forget to assist farrowings
- **Focus on Warm, Dry and Draft-free!**

Leave as many litters alone as possible

- **Natural litters perform better**
 - **Less fighting of pigs**
 - **Better immunity**
 - **Reduced stress from “pulling off poor-doers than from adding mixed pigs**
- **We need to challenge sows to milk**
 - **11-14 leave alone- put effort into starting all**
 - **Do not back-fill (1 crate per 20 sows \pm)**
 - **Re-think and “gather” in 24 hours within room**
 - **Add 1 more than initial placement # - revisit**
 - **At processing adjust for “kick-out” sows**

Split-suckle program

- **Bigger, more aggressive pigs drink more**
 - Use them to stimulate udder –easier farrowing
 - Do not allow excess consumption – robbing
 - Isolate from udder to allow small pigs time on tit
 - Do not forget boxed pigs – do not overheat
 - **Smaller (less viable – not terminal) pigs need milk and antibodies from “sticky-milk”**
 - Each pig needs to nurse his mom 1st
 - Foster to “Fresh” sows – 0-wean not holdbacks
 - Select sows so that the pig has a better chance or leave him alone!
 - Evaluate every fostered pig – lameness, anemic, scouring need additional therapy or it is non-productive work
-

Mortality exists until pigs are sold

- **Identify pigs that need help –**
 - **Timely efforts > impact (scours or trauma)**
 - **Late treatments reduce sow's performance**
 - **Look for empty bellies – 1 treat the pig: more treat the SOW**
 - **Even good sows can have issues during lactation**
 - **Look at the crate before replacing a sow**
 - **Remove excess feed (0-wean sows just farrowed too)**
 - **Is water available**
 - **Is there a draft or system error**
 - **Treat the nurse sows like they just farrowed – do not expect pigs to start easily – attention**
-

1st do no harm

■ Processing

- Look for errors in placement – pigs that did not start need to be addressed here (24-48 hours)
- Swollen joints because we handled pigs
- Bleach out pigs from improper iron shots
- Excess bleeding for tail docking – not crimped
- Infections from tools or spread of scours

■ Castration

- Ruptures – time and severity determine response
- Vary process as age changes

■ Treatments, vaccines, extra handling – no increase in lameness of swollen joints due to process

■ Getting this job done should not create more work!

We want more quality pigs not more rejects from the customer

- **Identify losses so they can be addressed – not passed on**
 - **Pig weight needs to increase with age – 26 day maximum for most farms**
 - **Streps and coughs as immunity decays**
 - **More challenges starting = more rejects next load**
 - **Split weaning and small litters impact sows**
 - **Flows that remove big pigs younger need to be corrected – oldest and biggest leave (move sows)**
 - **Account for dead after weaning – records do!**
-

Mortality is a measure of quality – people, processes and system

- **Good systems should have 20% PWM**
- **Good people working in the system are needed to reduce this number.**

How low can we go?

- **A pig in the crate kept alive and fit to wean is worth far more than 2 in the belly!**
 - **Reduced PWM → greater born alive**
 - **Greater BA → more efficiency (less work)**
-