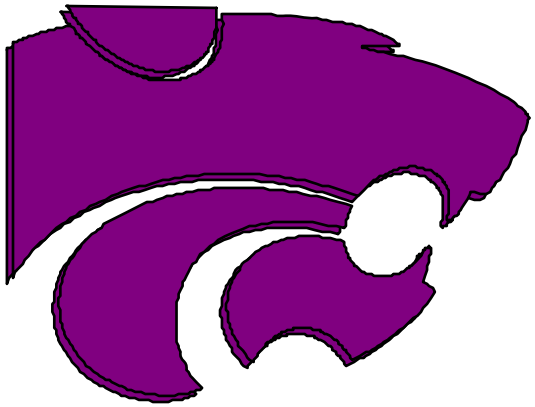
Swine Day 2005

Nursery pigs



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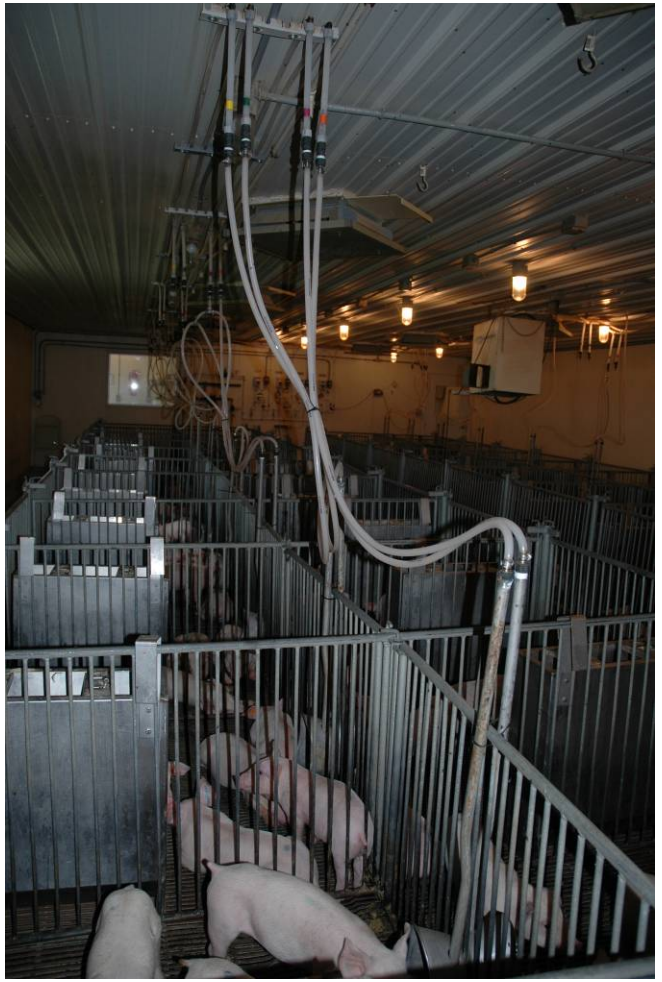
Water medication for nursery pigs

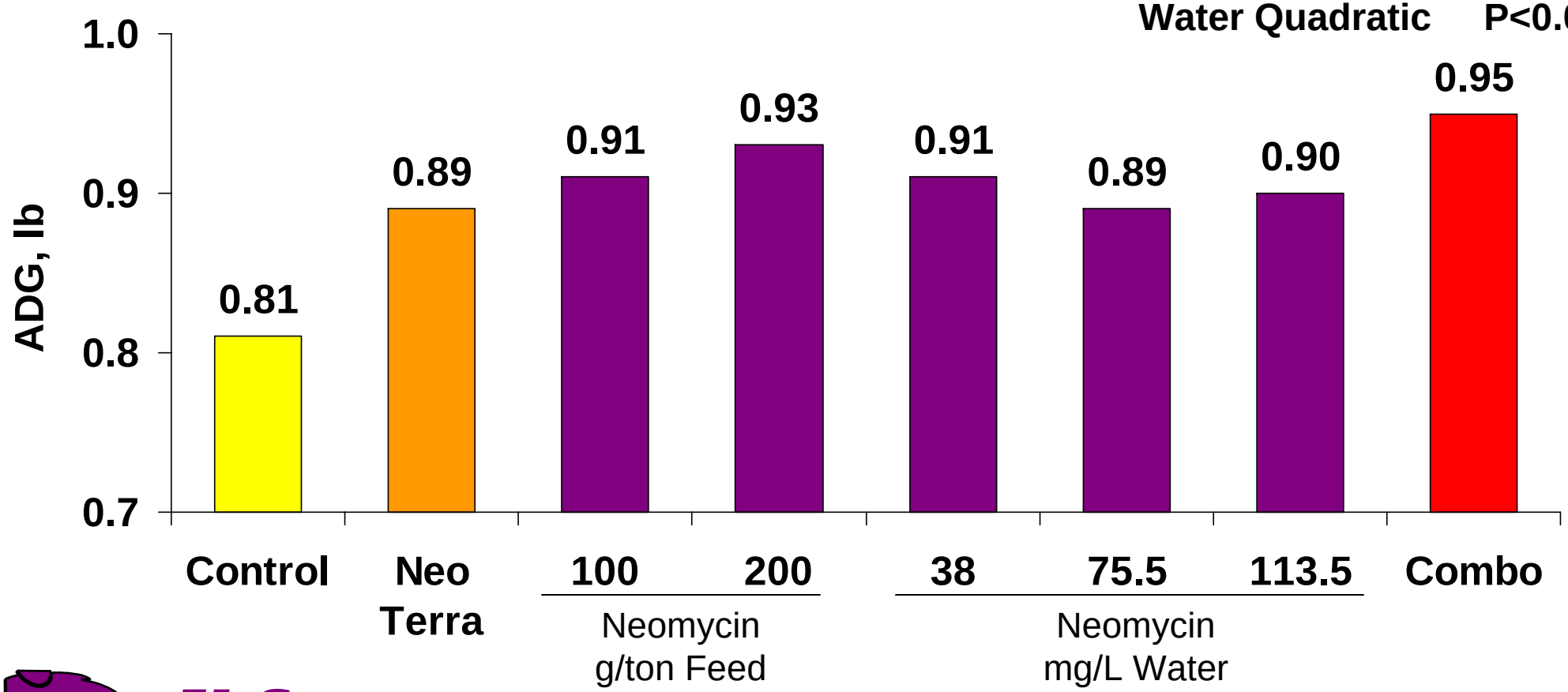


K-STATE

Effects of feed and water antimicrobials on growth performance

(d 0 to 24 d after weaning)

Neg Con vs Med	**P<0.02**
Feed Linear	**P<0.01**
Water Linear	**P<0.03**
Water Quadratic	**P<0.09**

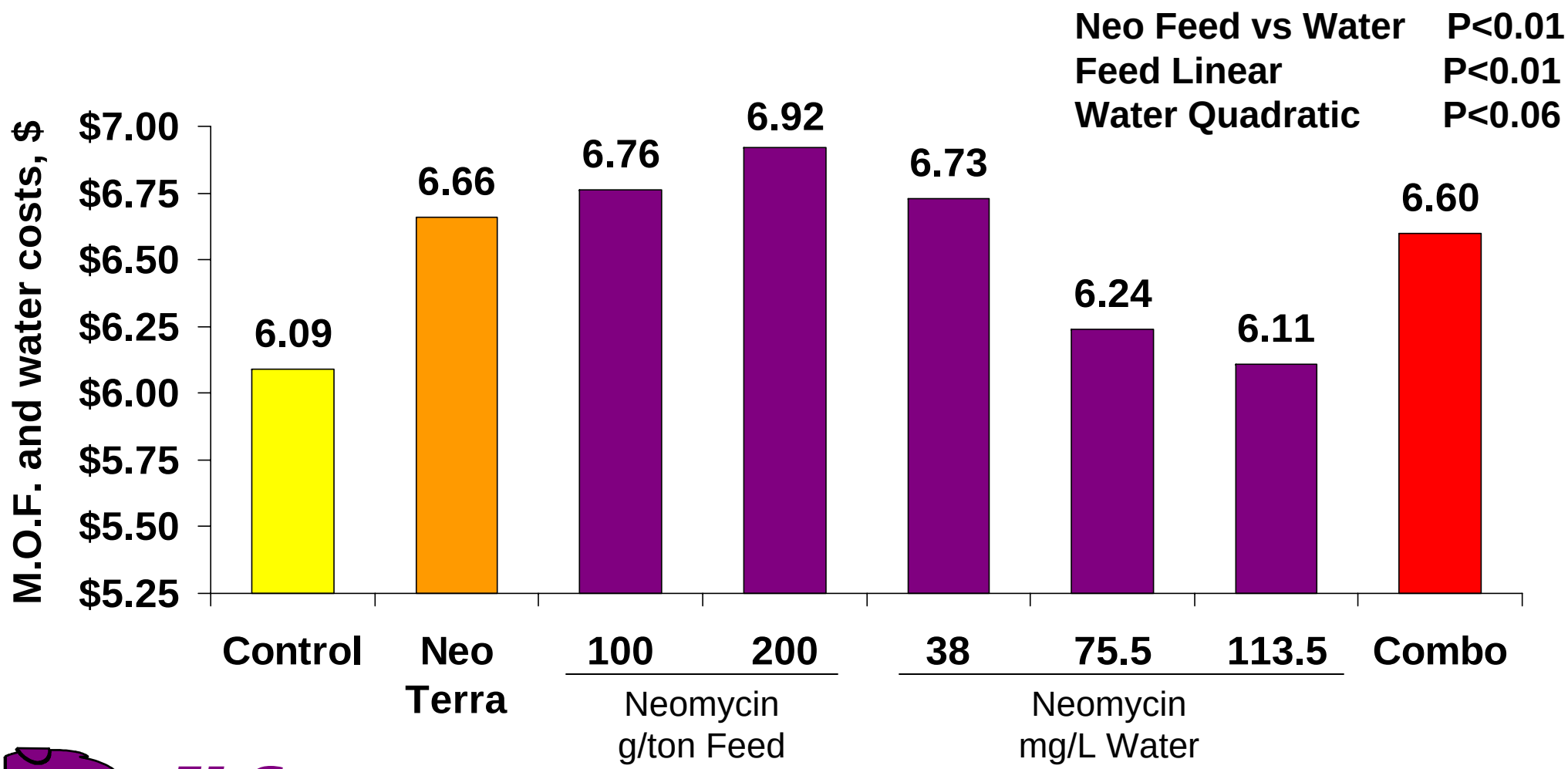


K-STATE

Gottlob et al., 2005

Margin over feed and water costs

(d 0 to 24 after weaning)

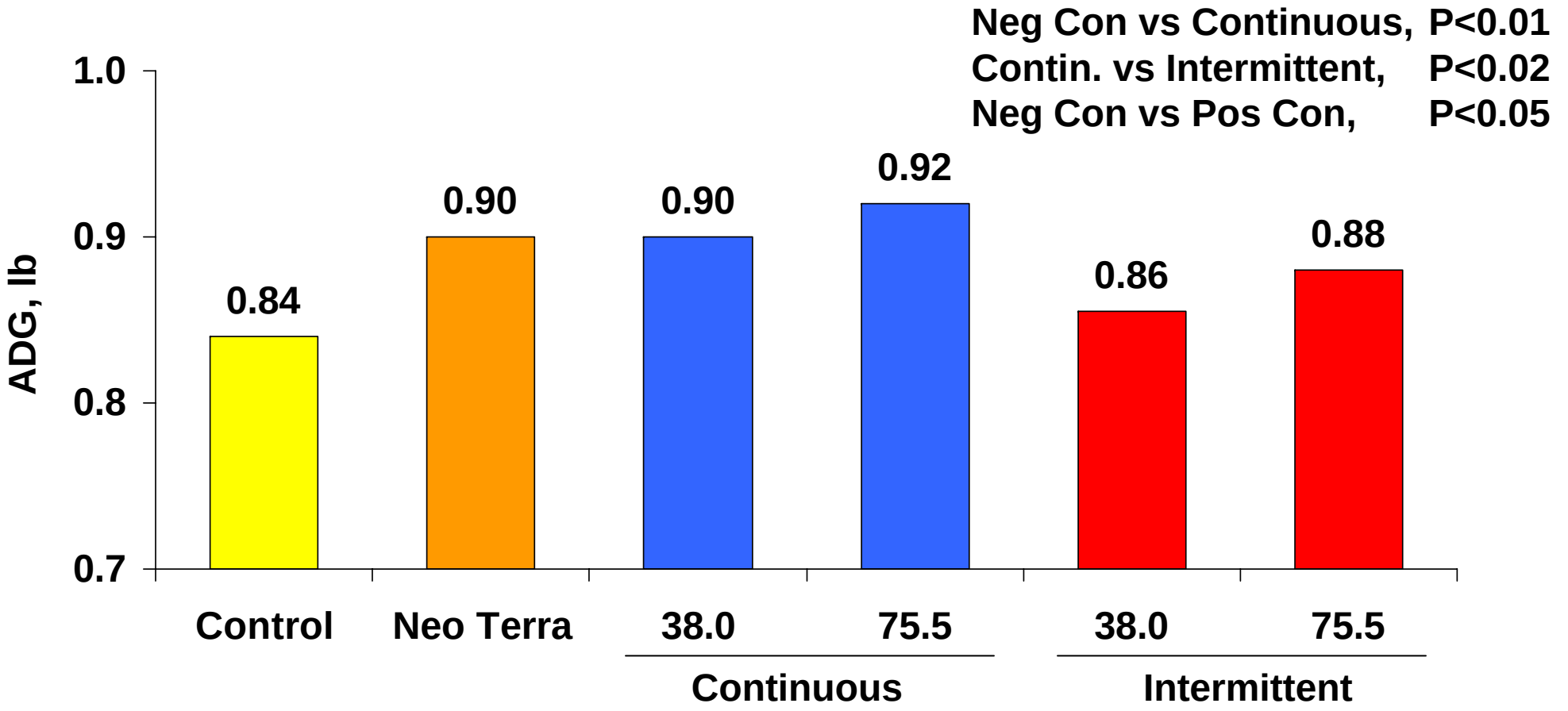


K-STATE

Gottlob et al., 2005

Effects of intermittent water medication on growth performance

(d 0 to 28 d after weaning)

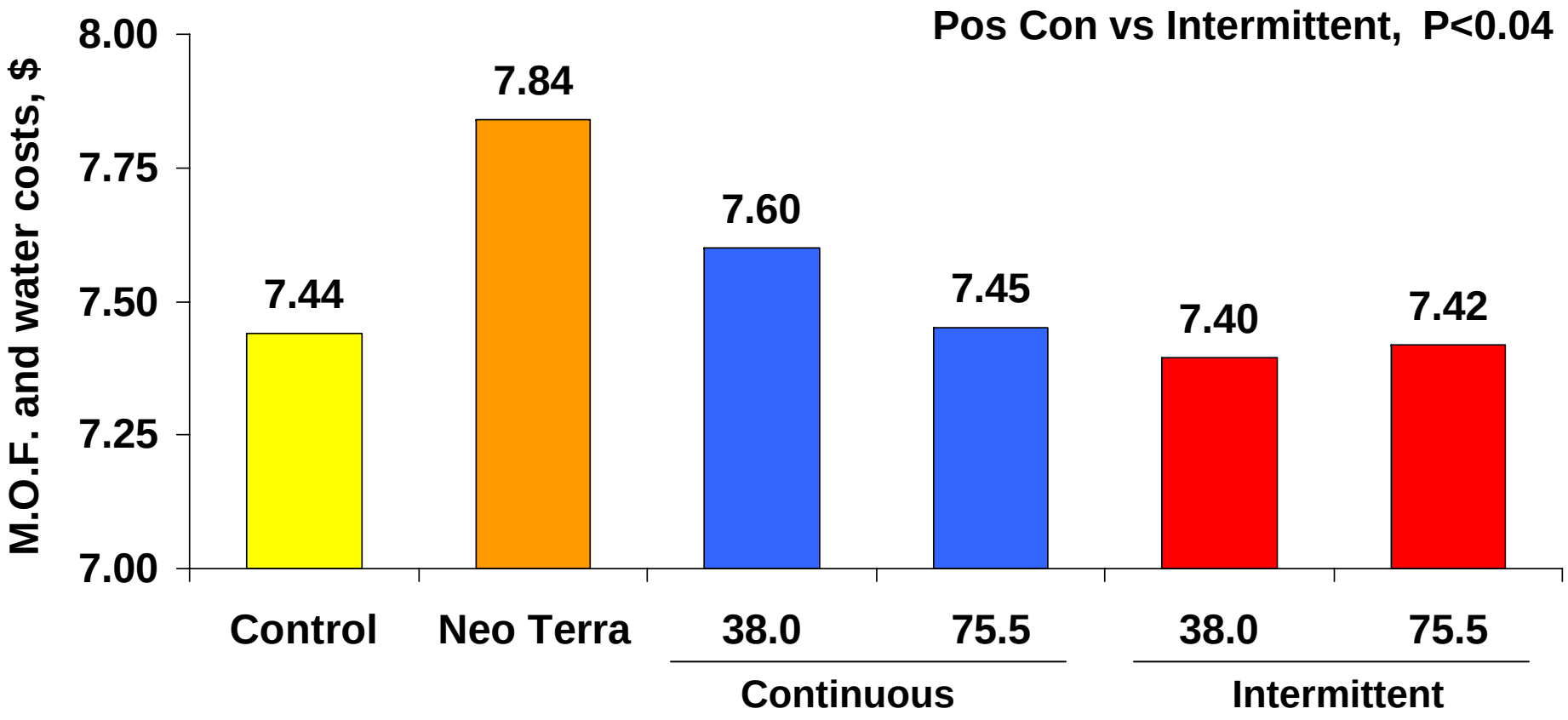


K-STATE

Gottlob et al., 2005

Margin over feed and water costs

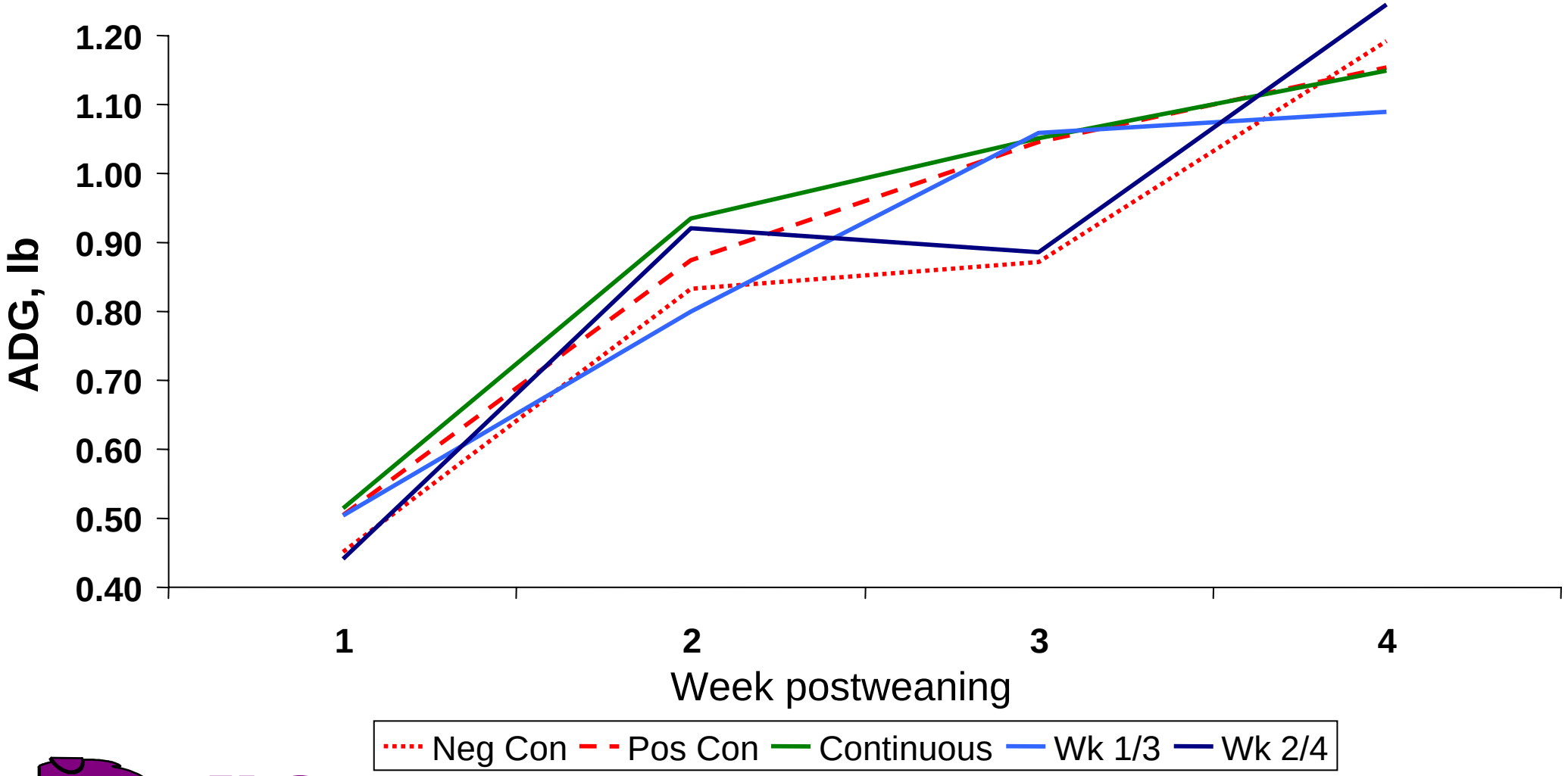
(d 0 to 24 after weaning)



K-STATE

Gottlob et al., 2005

Weekly ADG of pigs provided continuous or intermittent water medication



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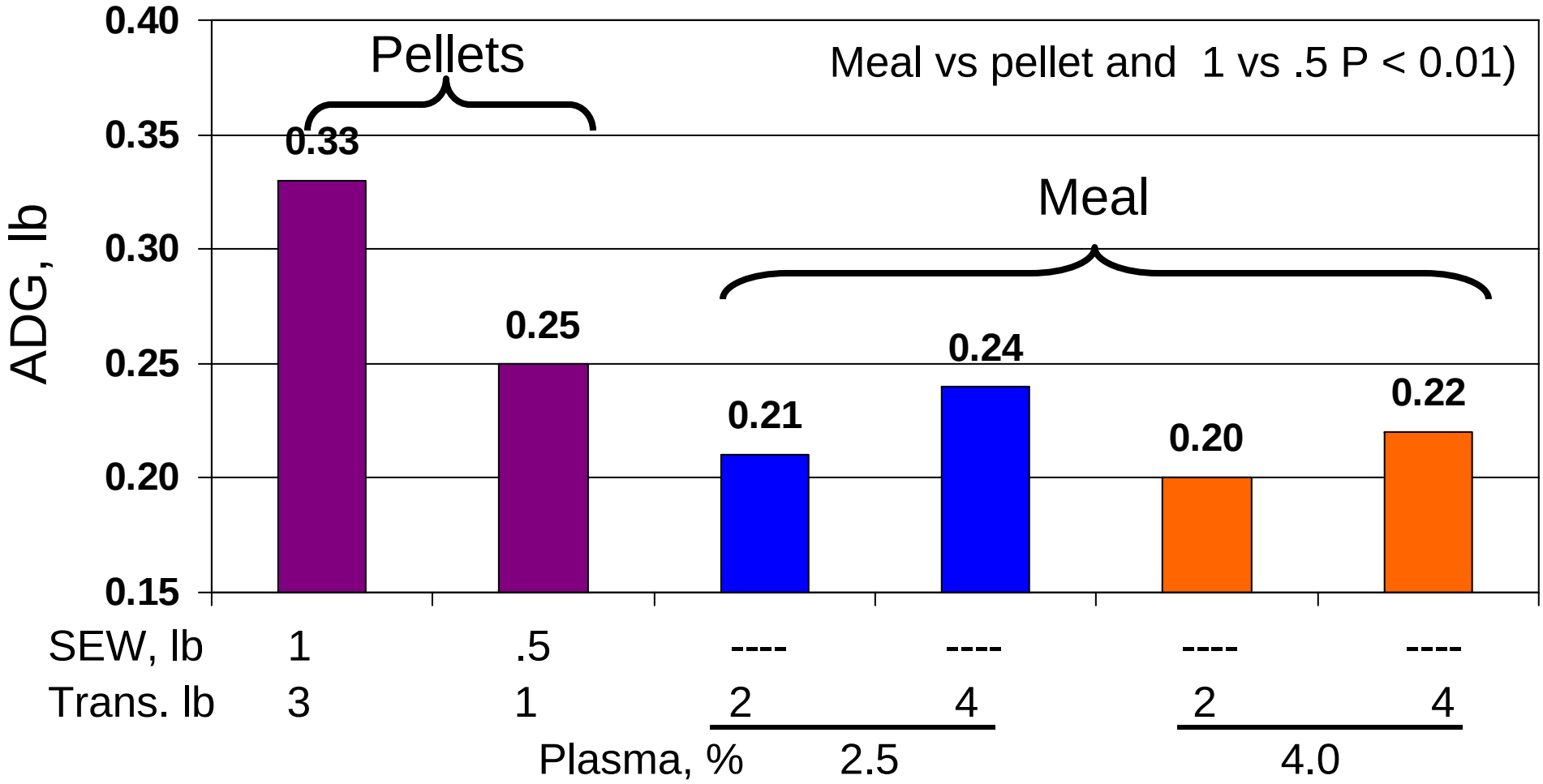
Gottlob et al., 2005

Effects of using pelleted SEW diets vs a meal Transition diet on pig growth (d 0 to 10)



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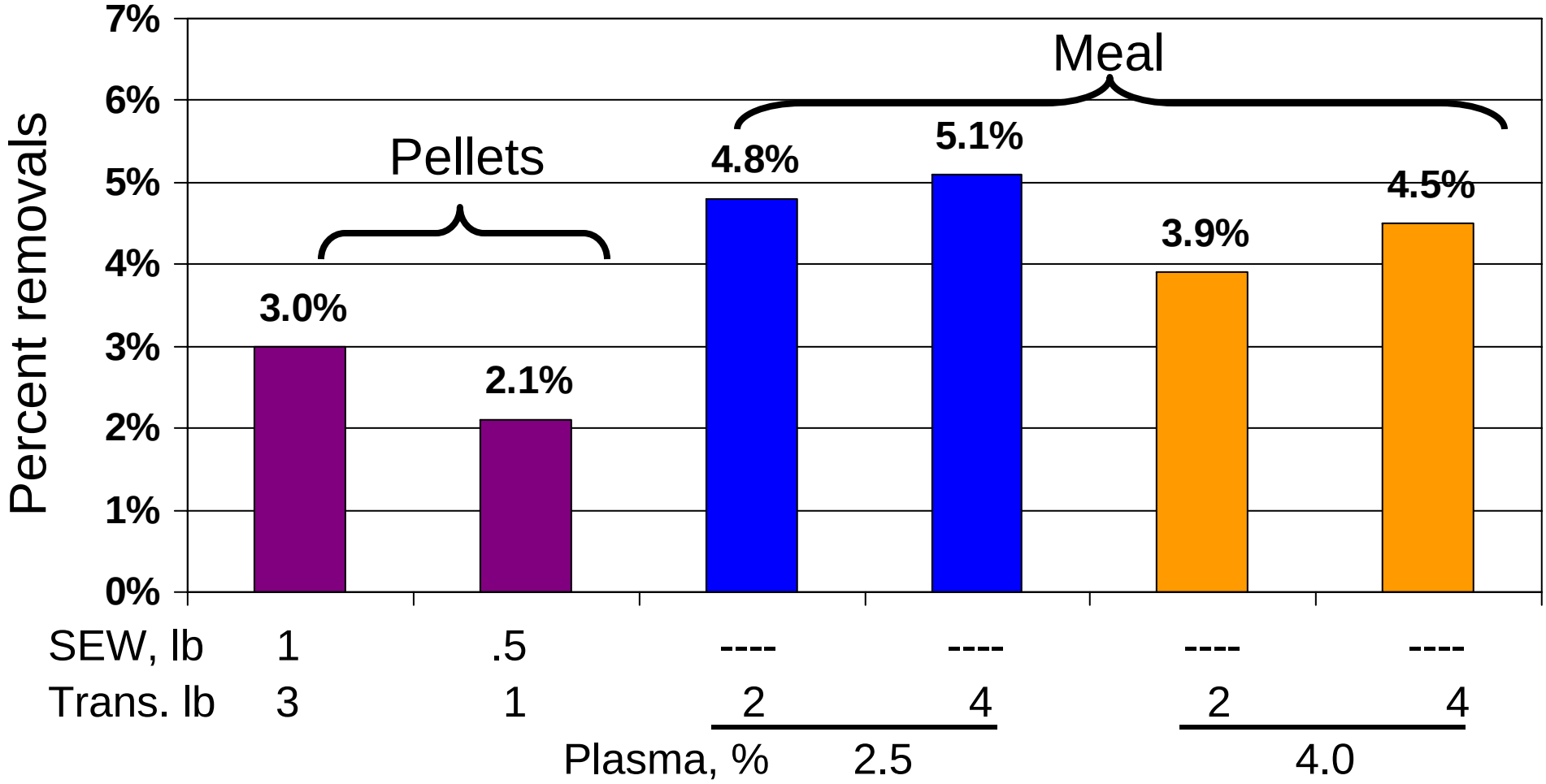
Average initial wt = 12.6 lb

Groesbeck et al., 2005

Effects of using pelleted SEW diets vs a meal Transition diet on percent removals (d 0 to 28)

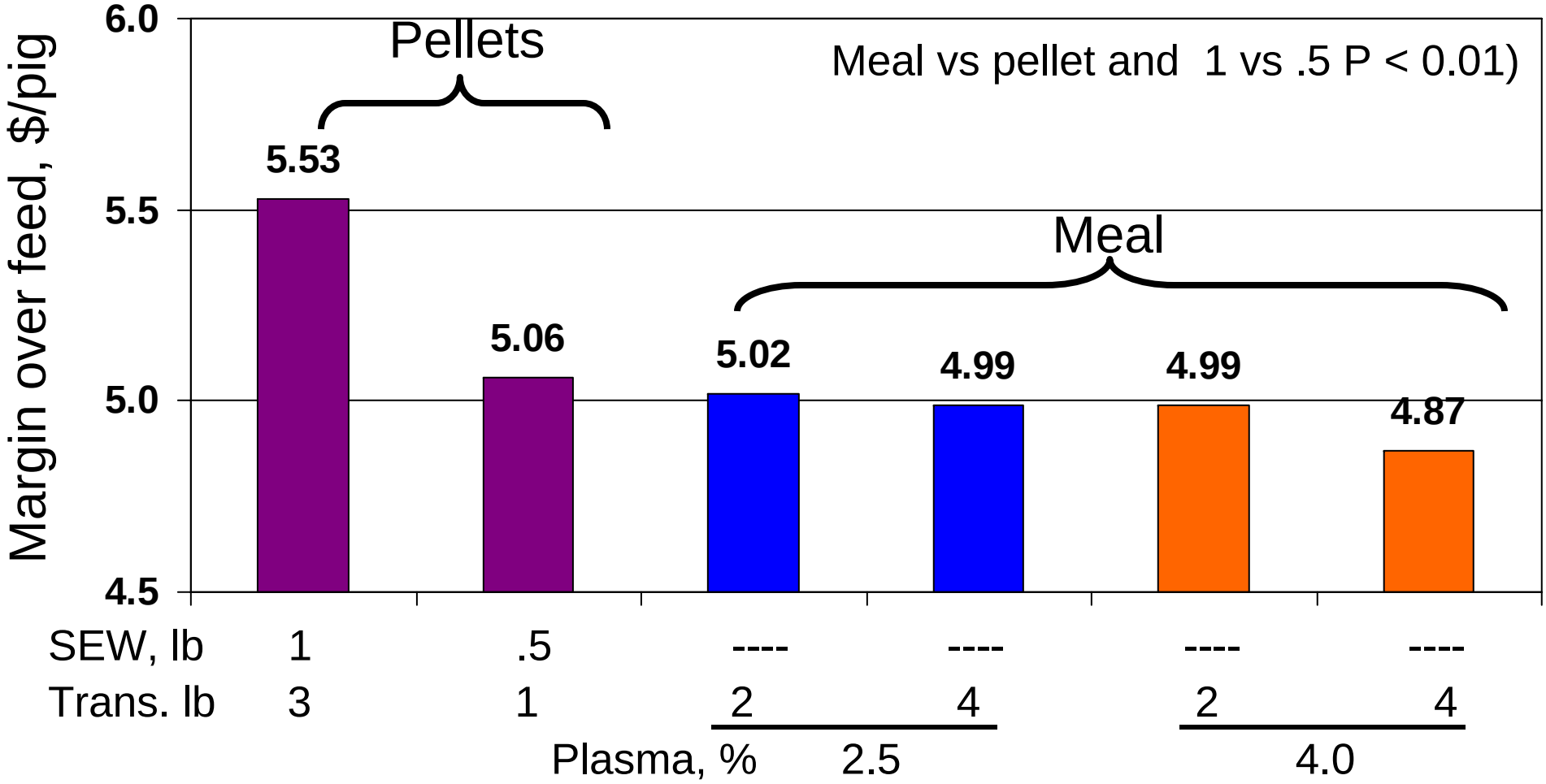


K-STATE

Average initial wt = 12.6 lb

Groesbeck et al., 2005

Effects of using pelleted SEW diets vs a meal Transition diet on profitability



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Average initial wt = 12.6 lb

Groesbeck et al., 2005

Adjust feed budgets for older weaning ages and weights

	Weaning Weight, lb/pig			
Diet, lb/pig	**10**	**12**	**14**	**16**
SEW	**2**	**1**	**.5**	**.5**
Transition	**5**	**3**	**1**	**--**
Phase 2	**13 to 15**	**13 to 15**	**13 to 15**	**13 to 15**

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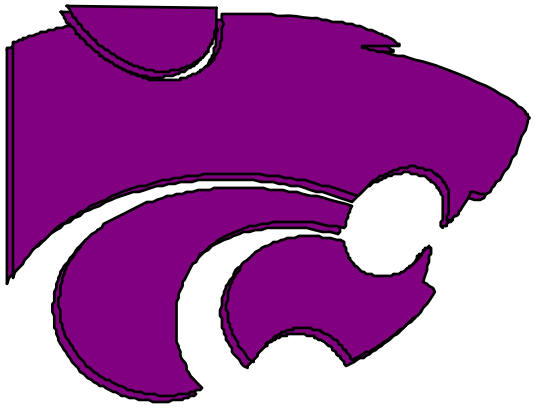
Swine Day 2005

Grow-finish Pigs



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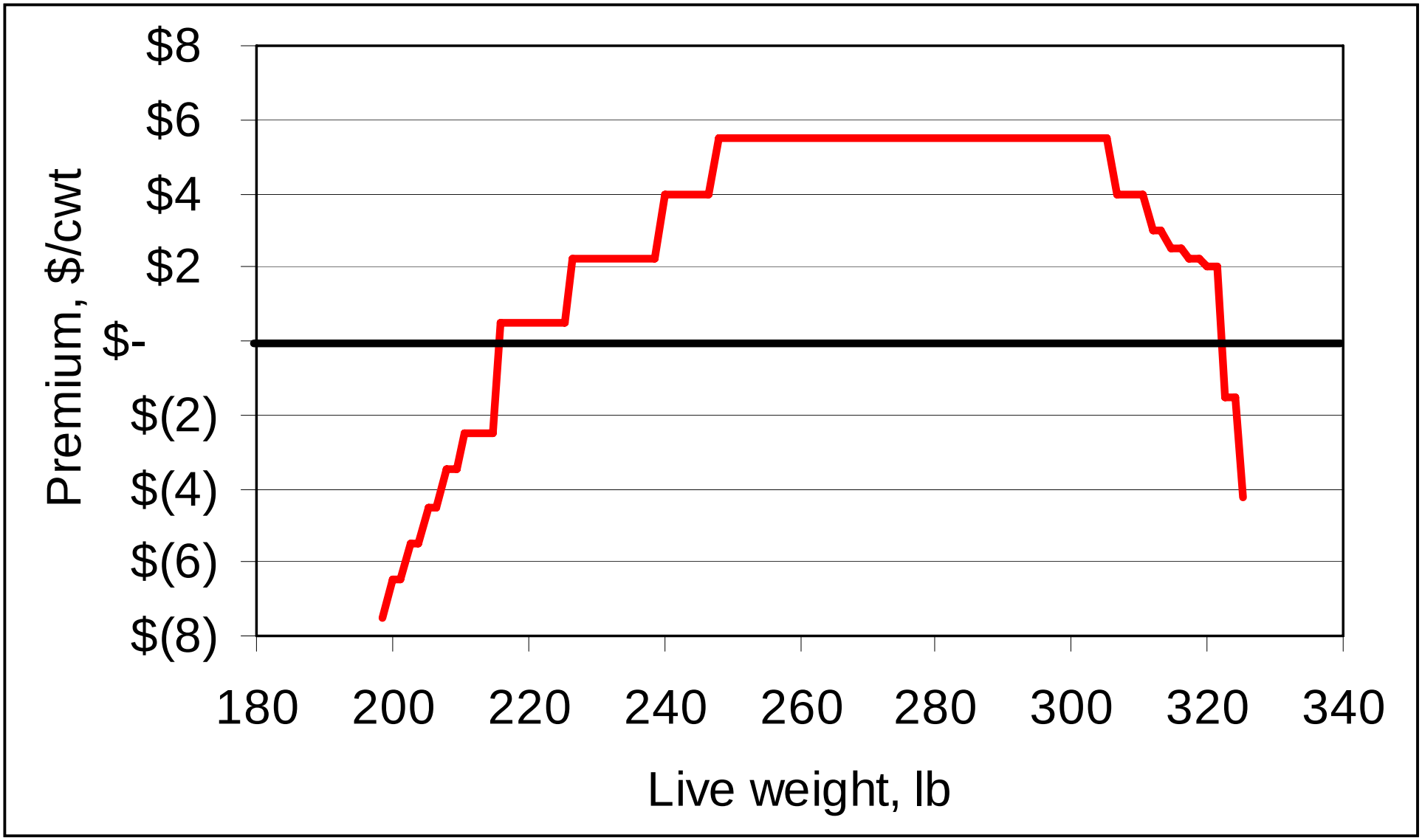
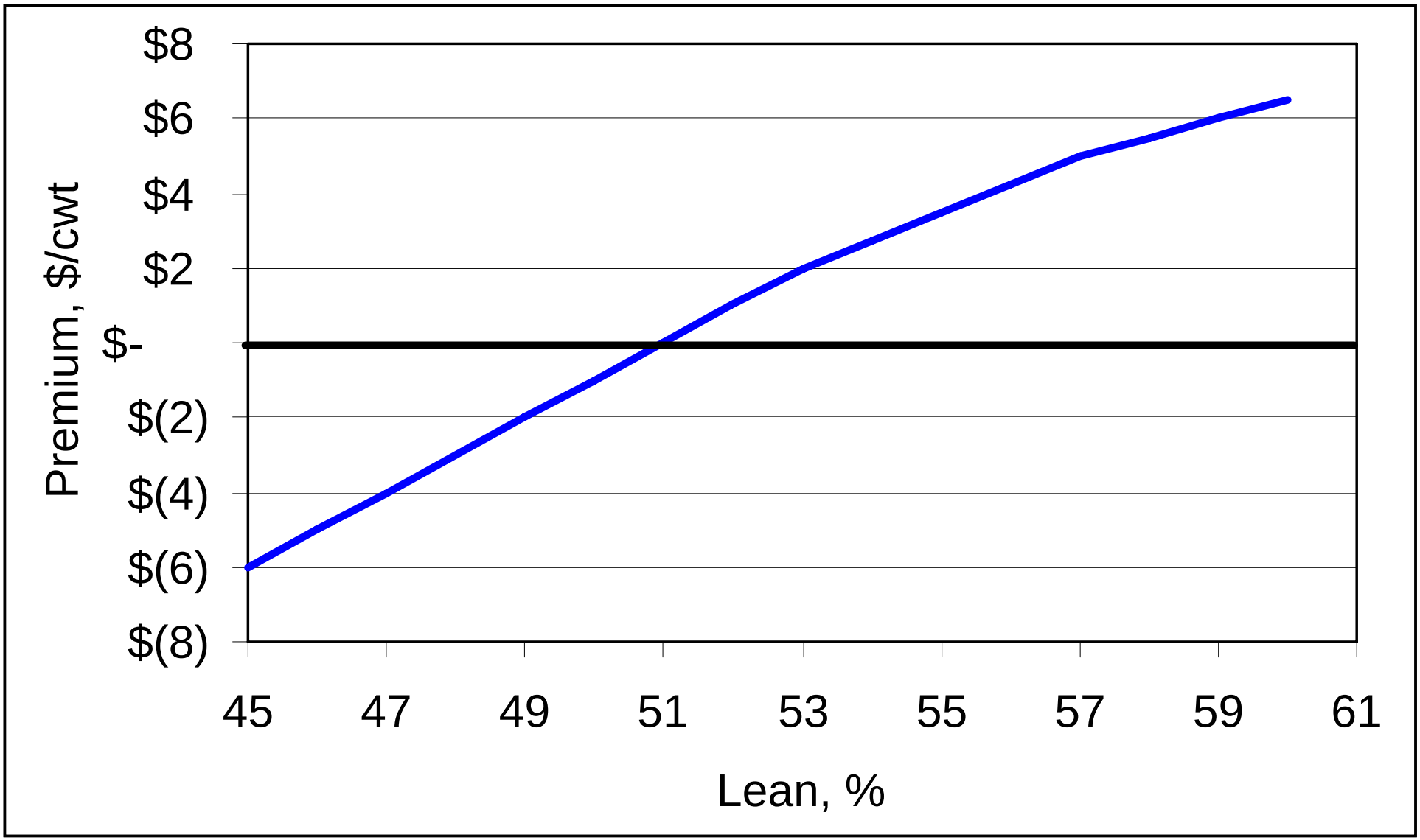
Triumph Grid

Live weight, lb		Percentage lean							
Lower	Upper	>60	59	58	57	56	55	54	53
	199	($6.50)	($7.00)	($7.50)	($8.00)	($8.75)	($9.50)	($10.25)	($11.00)
200	201	($5.50)	($6.00)	($6.50)	($7.00)	($7.75)	($8.50)	($9.25)	($10.00)
203	204	($4.50)	($5.00)	($5.50)	($6.00)	($6.75)	($7.50)	($8.25)	($9.00)
205	207	($3.50)	($4.00)	($4.50)	($5.00)	($5.75)	($6.50)	($7.25)	($8.00)
208	209	($2.50)	($3.00)	($3.50)	($4.00)	($4.75)	($5.50)	($6.25)	($7.00)
211	215	($1.50)	($2.00)	($2.50)	($3.00)	($3.75)	($4.50)	($5.25)	($6.00)
216	225	$1.50	$1.00	$0.50	$0.00	($0.75)	($1.50)	($2.25)	($3.00)
227	239	$3.25	$2.75	$2.25	$1.75	$1.00	$0.25	($0.50)	($1.25)
240	247	$5.00	$4.50	$4.00	$3.50	$2.75	$2.00	$1.25	$0.50
248	305	$6.50	$6.00	$5.50	$5.00	$4.25	$3.50	$2.75	$2.00
307	311	$5.00	$4.50	$4.00	$3.50	$2.75	$2.00	$1.25	$0.50
312	313	$4.00	$3.50	$3.00	$2.50	$1.75	$1.00	$0.25	($0.50)
315	316	$3.50	$3.00	$2.50	$2.00	$1.25	$0.50	($0.25)	($1.00)
317	319	$3.25	$2.75	$2.25	$1.75	$1.00	$0.25	($0.50)	($1.25)
320	321	$3.00	$2.50	$2.00	$1.50	$0.75	$0.00	($0.75)	($1.50)
323	324	($0.50)	($1.00)	($1.50)	($2.00)	($2.75)	($3.50)	($4.25)	($5.00)
325		($3.25)	($3.75)	($4.25)	($4.75)	($5.50)	($6.25)	($7.00)	($7.75)

Triumph weight range (58% lean)



Triumph lean premium (248 to 305 lb pig)



Iodine Value

- Estimation of proportion of unsaturated fatty acids
- More unsaturated fatty acids lead to increased oxidation rate and rancidity
- Less unsaturated fatty acids lead to more desirable fat color and appearance for the Japanese market

Feedstuff IV Value

• Soybean Meal (46.5%)	19
• Milo	36
• Corn	49
• NCKP SBM	84
• Beef Tallow	440
• Choice White Grease	600
• Soybean oil	1300

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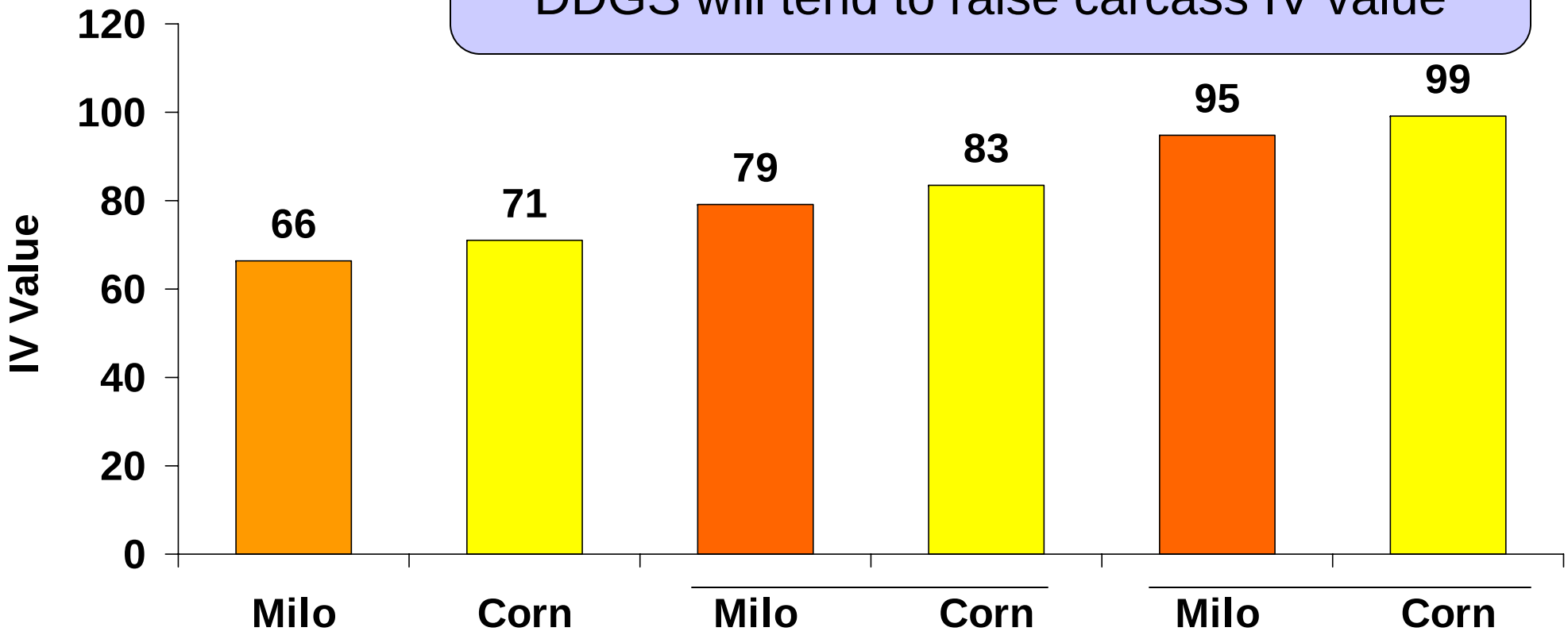
Effect of diet on carcass IV value

Feeding NCPK SBM, High Oil Corn, or DDGS will tend to raise carcass IV value



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Ingredient price update: What to do?

- Corn vs Milo: Milo needs to be < 96% cost of corn
- Crystalline Amino Acids: Currently > 3 lb per ton
  L-lysine + Met and Thr does not price in.
- Added Fat – In diets for pigs < 160 lb

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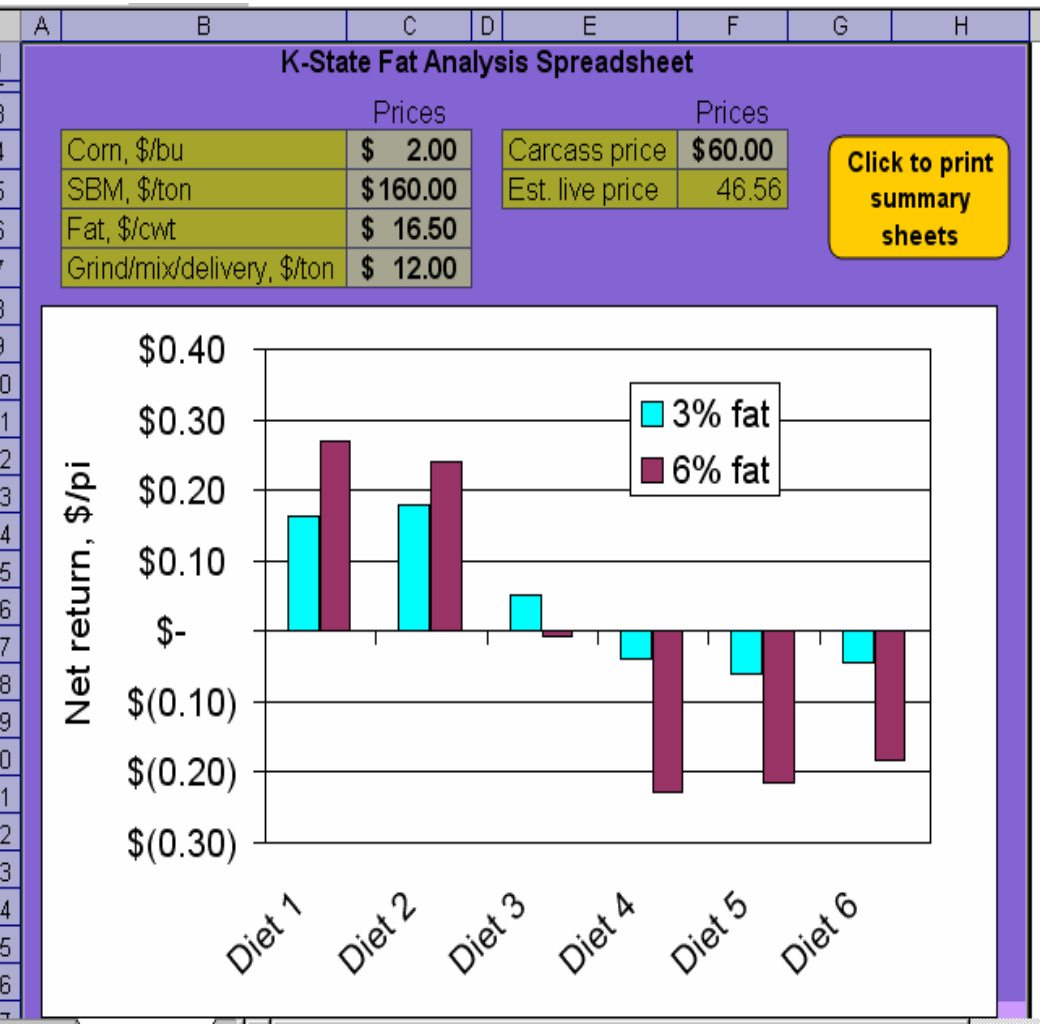
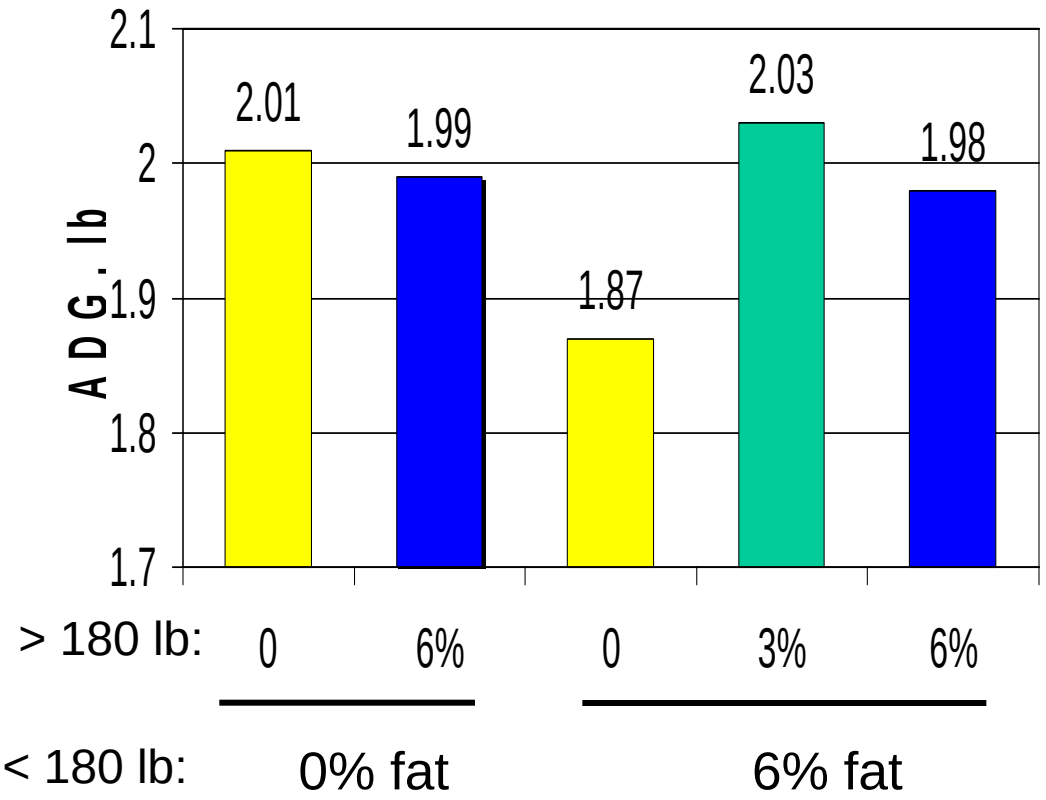
With inexpensive grain, fat only prices into grower diets – but reduce it's amount gradually



Effects of added fat on growth performance



Effect of sorting and added fat level on performance of grow-finish pigs reared a commercial facility

Experiment 2

- A total of 1,176 pigs were individually weighed and fitted with electronic ear tags
- 2 x 3 factorials
  - Three weight groups
    - Light (71.6 lb)
    - Heavy (83.1 lb)
    - Mixed (77.6 lb)
  - Two fat levels
    - 0 or 6% Choice white grease

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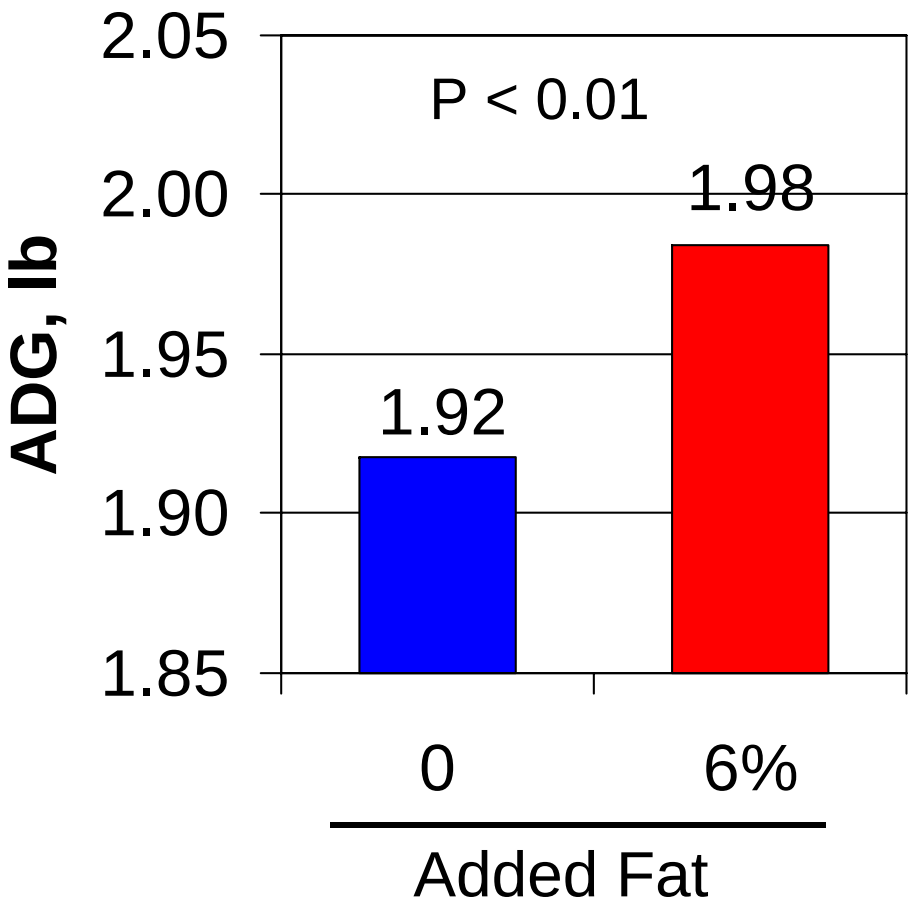
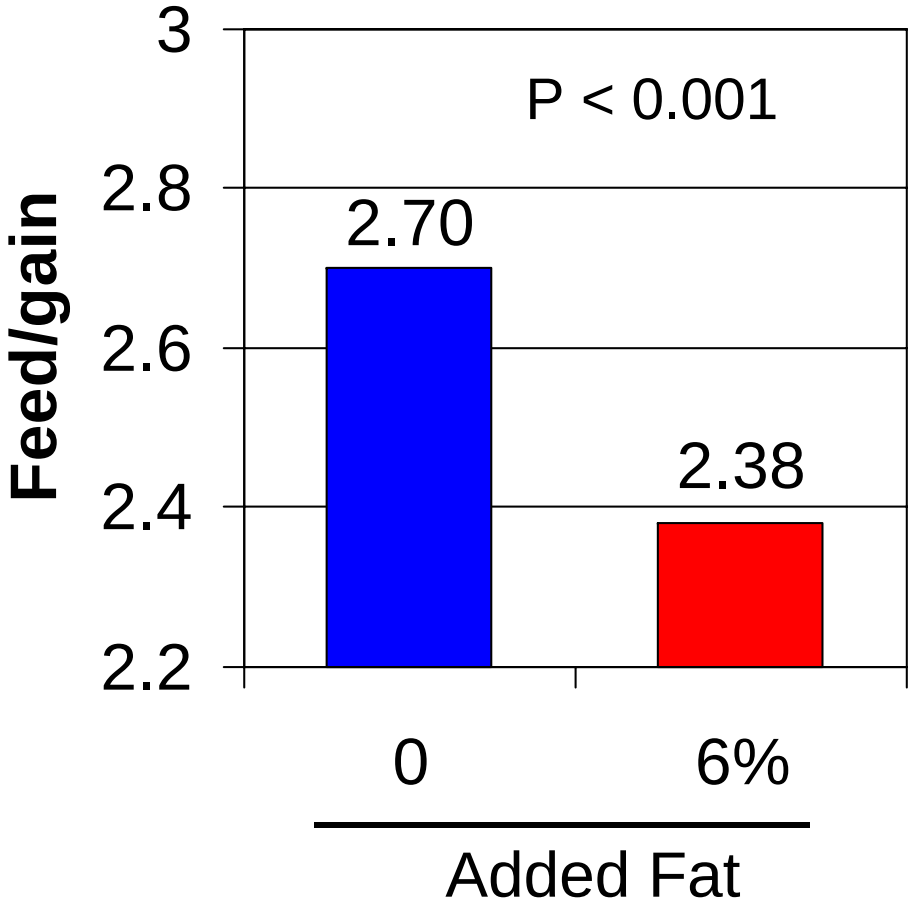
Hastad et al., 2005

Influence of fat level on performance
d 0 to 95





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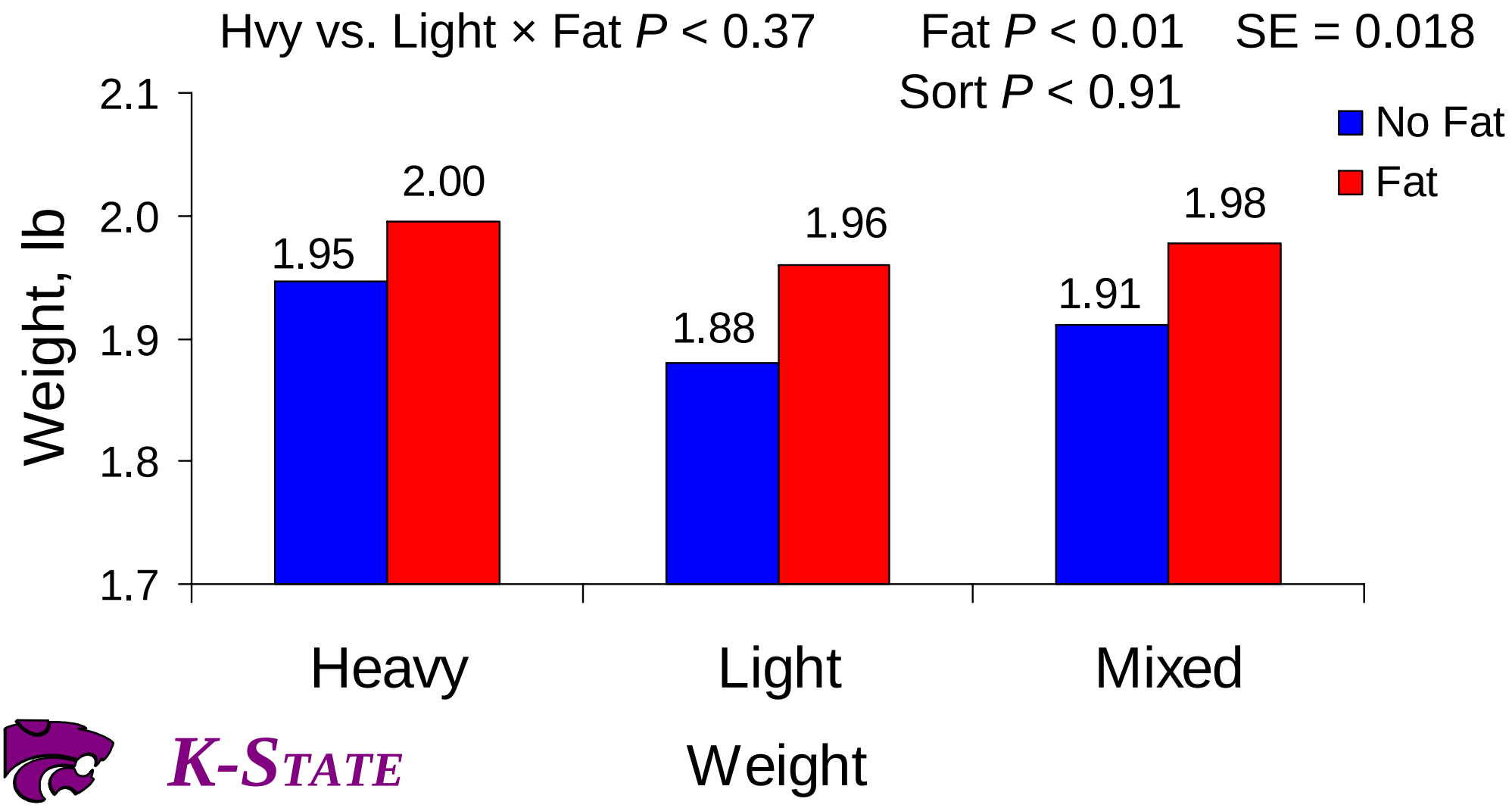
Hastad et al., 2005

Influence of sorting and dietary fat level on overall ADG - Exp. 2



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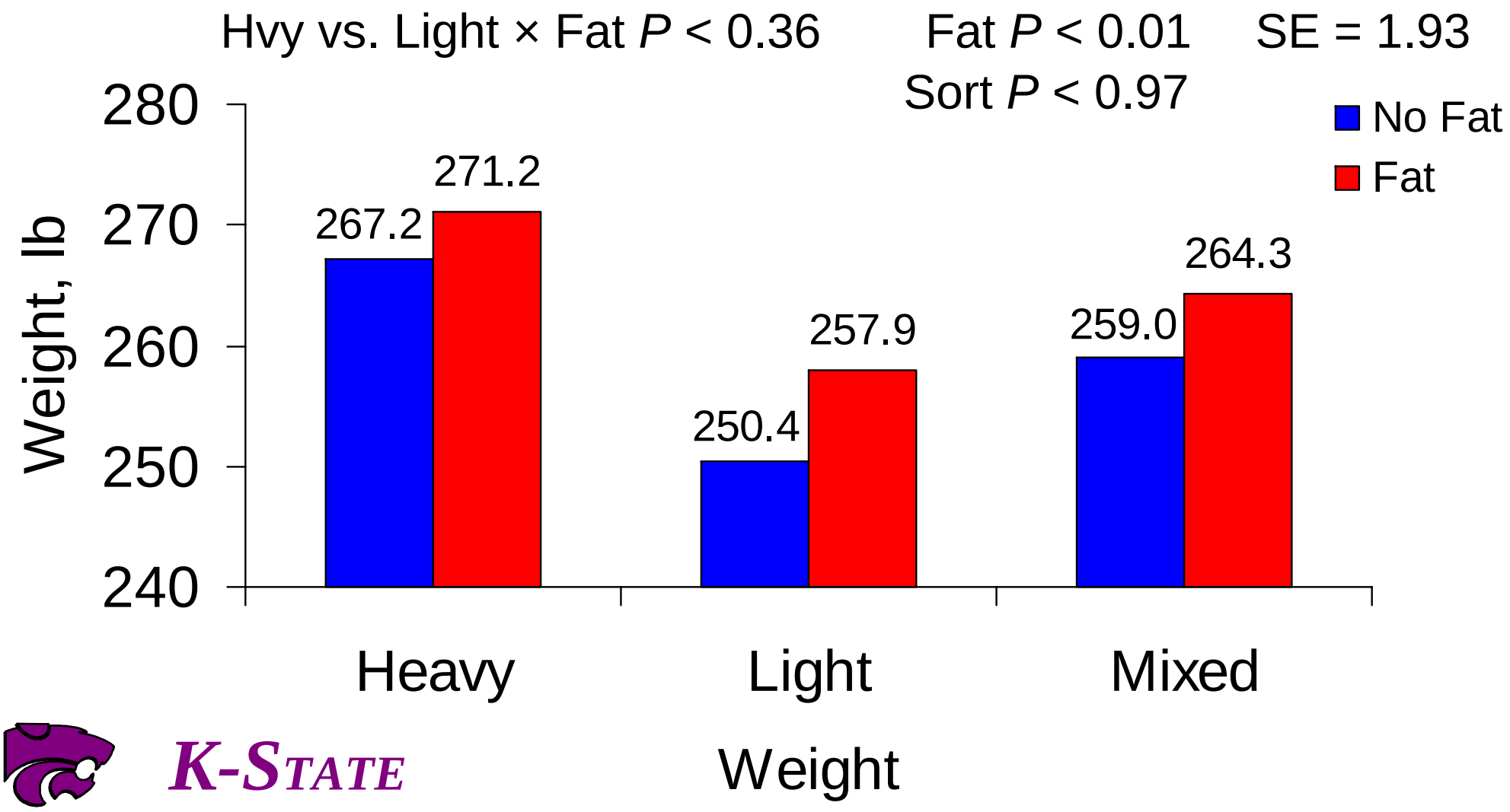
Influence of sorting and dietary fat on final weight - Exp. 2



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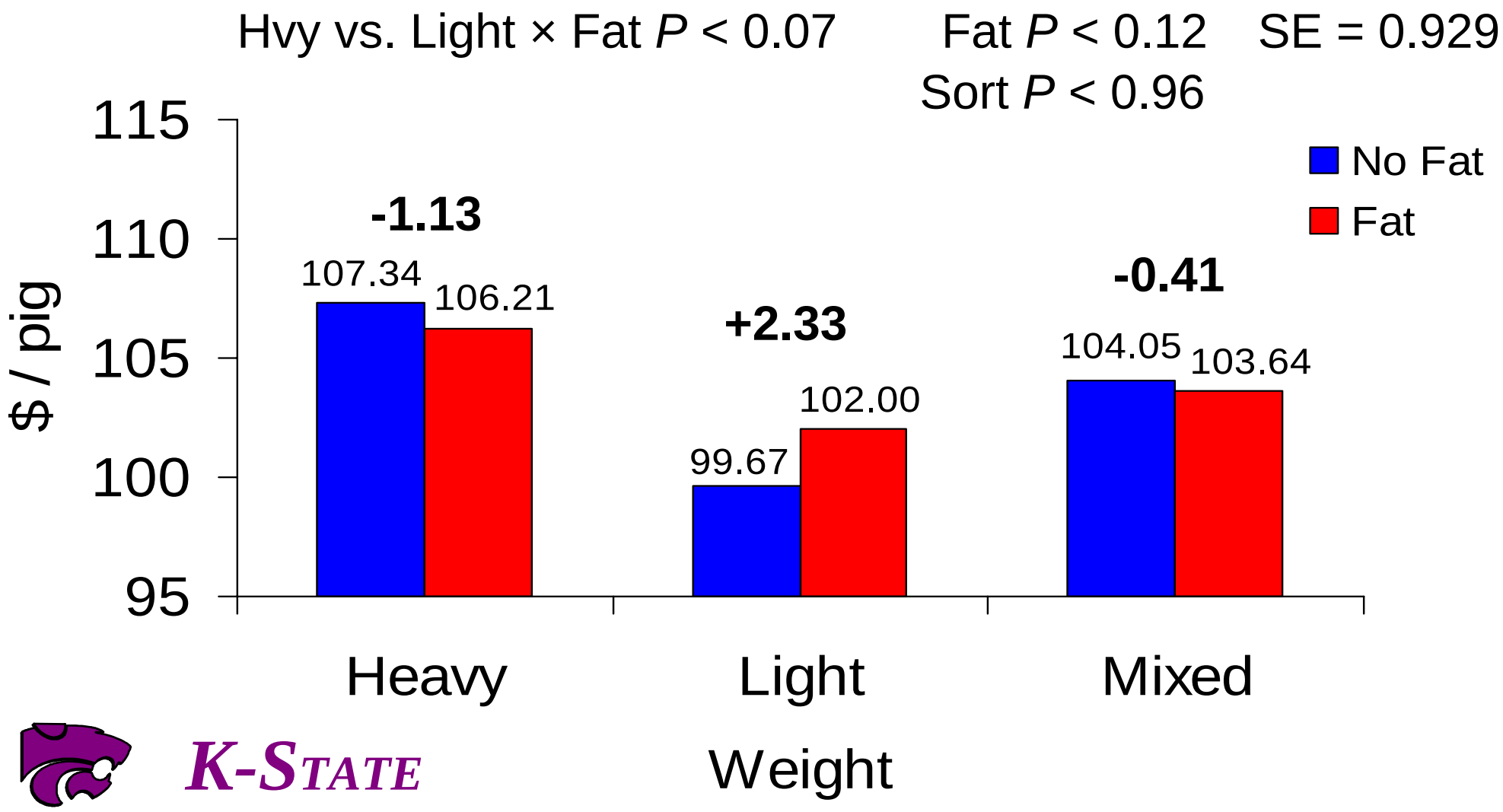
Influence of sorting and fat level on margin over feed cost - Exp. 2



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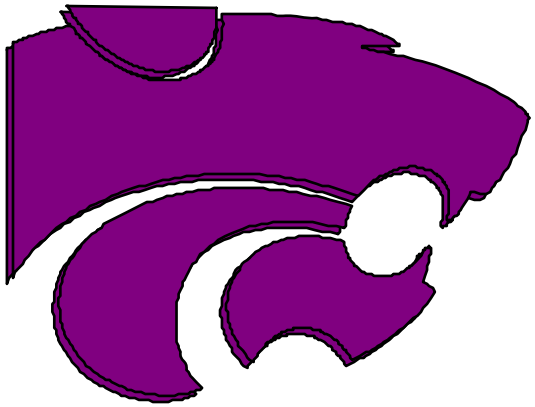
Swine Day 2005

Grow-finish pigs - other ingredients



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NutriDense Corn

- Three experiments with same basic design
  - Late nursery (360 pigs)
    - 5 pigs/pen with 9 pens/treatment
  - Grower (1,189 pigs)
    - 28 pigs/pen with 7 pens/treatment
  - Finisher (1,136 pigs)
    - 27 pigs/pen with 7 pens/treatment

- Yellow dent compared to NutriDense corn
- Increasing levels of synthetic amino acids
  - Lysine, Threonine, Methionine

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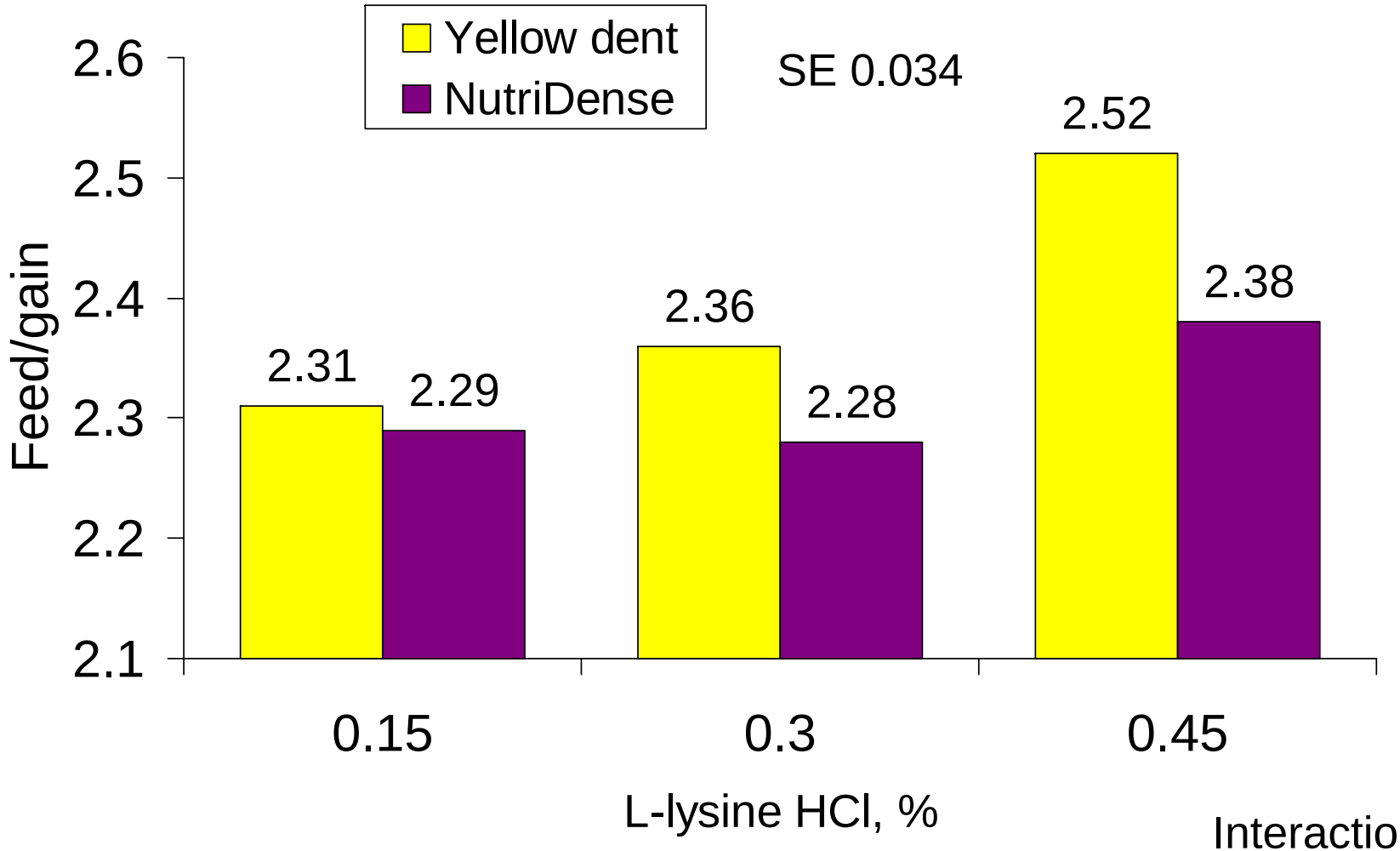
Influence of corn source on grower F/G



Interaction	0.21
Corn source	0.01
Linear	0.01
Quad	0.08

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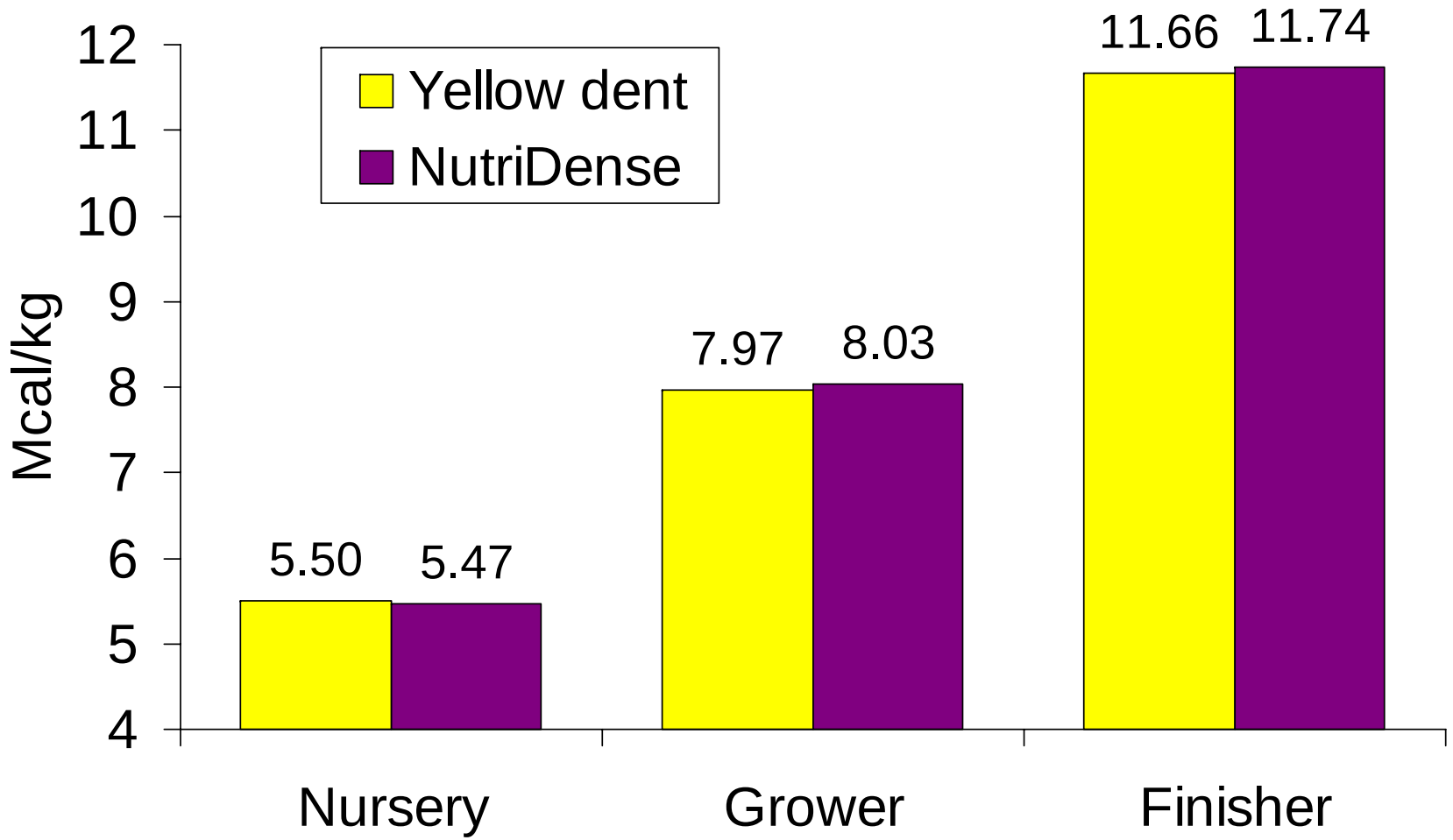
Influence of corn source on energetic efficiency



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DDGS Summary

- Energy level is similar to corn
- Lysine availability is variable, but can be handled in formulation.
- When given a choice, pigs prefer to eat a diet that does not contain DDGS
  - The negative effect on choice increases linearly as DDGS level increases
  - The preference does not change with time on feed
  - The negative effect can not be masked with sweeteners
- When not given a choice, feed intake is often reduced linearly as DDGS level increases in the diet
- If an individual plant can be identified that does not cause the negative impact on feed intake, DDGS can be an economical ingredient

DDGS Breakeven pricing at 10% usage

Corn, $/bu	SBM, /ton	DDGS, $/ton	DDGS cost / finishing pig	DDGS Breakeven, /ton
$1.60	$160	$95	+ $0.56	$75
$1.60	$180	$95	+ $0.49	$78
$1.60	$200	$95	+ $0.42	$80
$1.80	$180	$95	+ $0.31	$84
$1.80	$200	$95	+ $0.24	$86
$2.00	$200	$95	+ $0.07	$92

**Moncal, 21% P fixed at $320 / ton.

**Current FOB Garnett, KS = $86.

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Phytase Update - Finishing

- Phytase is approximately $0.65 per ton for 500 FTU.
  - Equates to an increased P availability of 0.10%.

- Cost savings of $0.05 per finishing pig if used as a separate ingredient at the 500 FTU level compared to use in the vitamin premix
  - When used in premix, inclusion rate decreases as pigs grow heavier, thus P release decreases from 0.08% in early finishing to 0.04% in late finishing

Phytase Update - Sows

– For lactating sows, phytase works well with an average P release is 0.093% for 500 FTU.

– For gestating sows, phytase doesn't work as well with an average P release is 0.054 for 500 FTU.

- Only based on 2 trials and was highly variable in those trials.

K-STATE

Lysine requirement for Paylean® fed pigs in a commercial facility

- A total of 932 gilts (PIC L337 × C22) with an initial weight of 226 lb were used for a 21 d trial.
- 5 lysine levels of TID lysine
  - 0.75%, 0.85%. 0.95%, 1.05%, 1.15%
  - 4.5 g/ton of Paylean®
- Control diet
  - 0.65% TID lysine
  - no Paylean®

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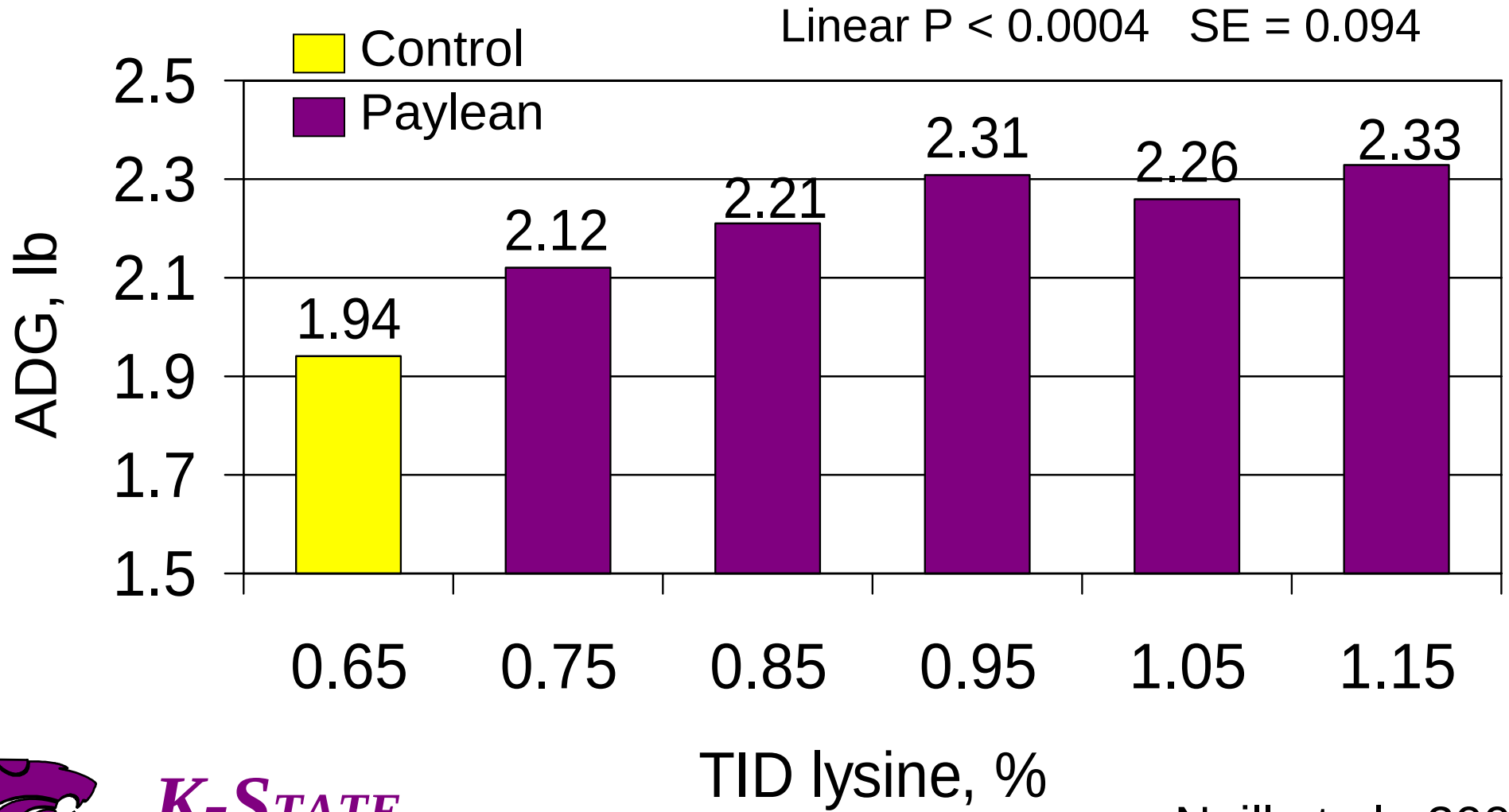
Neill et al., 2005

Lysine requirement of pigs fed Paylean
ADG from d 0 to 21



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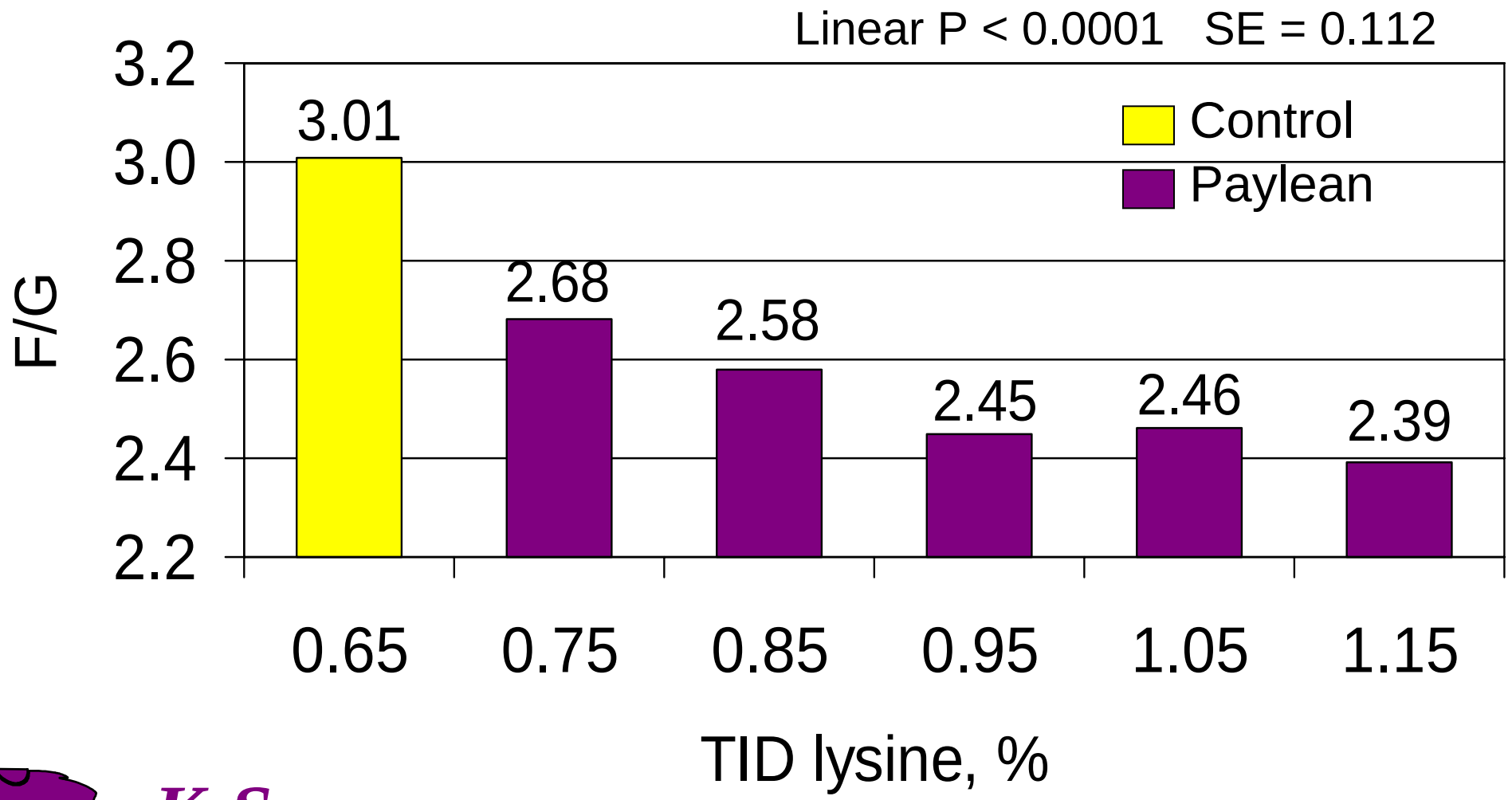
Neill et al., 2005

Lysine requirement of pigs fed Paylean
F/G from d 0 to 21



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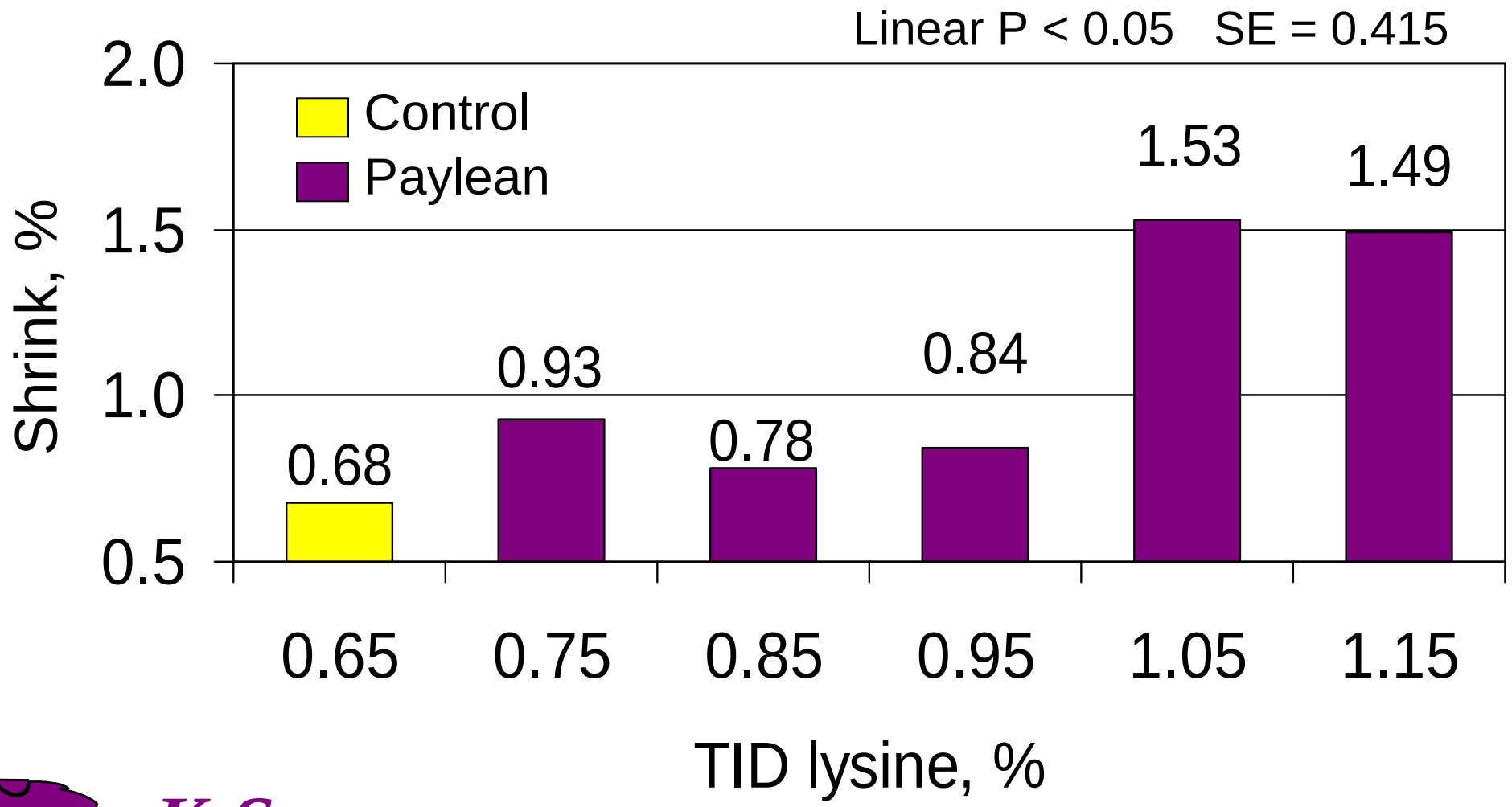
Neill et al., 2005

Lysine requirement of pigs fed Paylean
Shrink (farm to plant)



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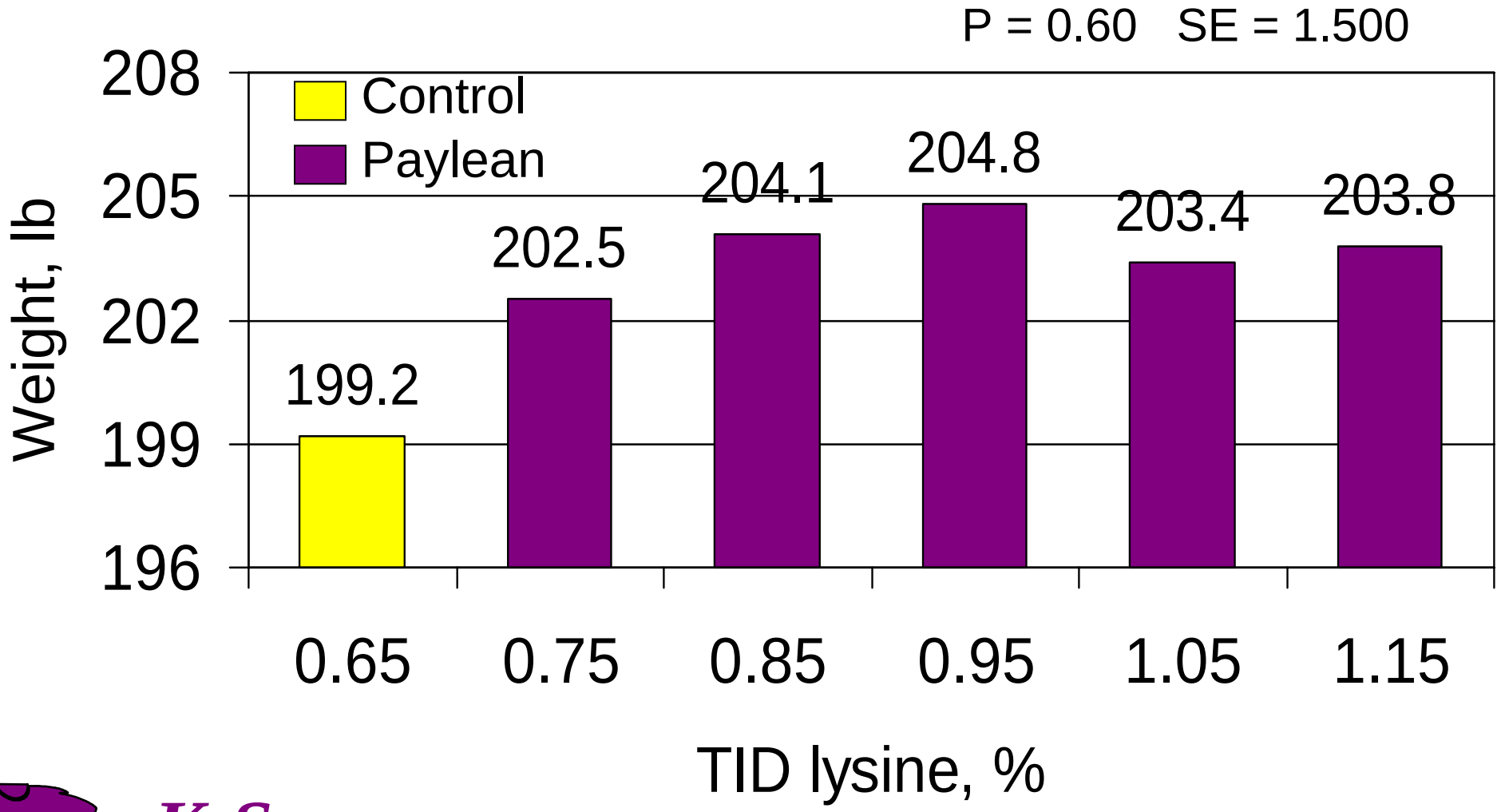
Neill et al., 2005

Lysine requirement of pigs fed Paylean
Carcass weight



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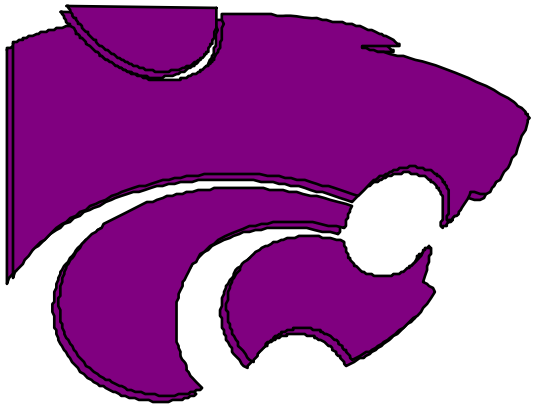
Neill et al., 2005

KSU Swine Day

Sows

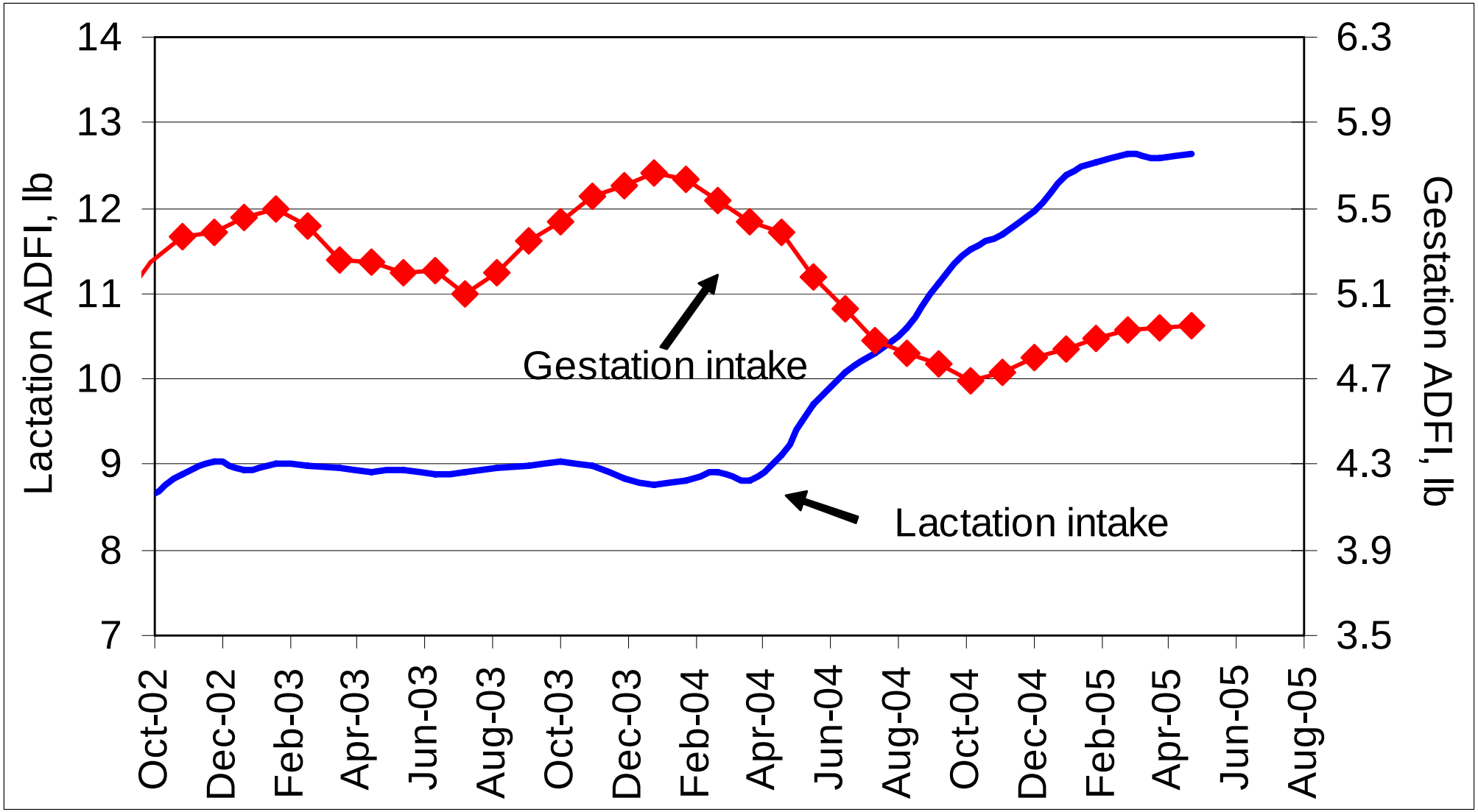


K-State Research and Extension

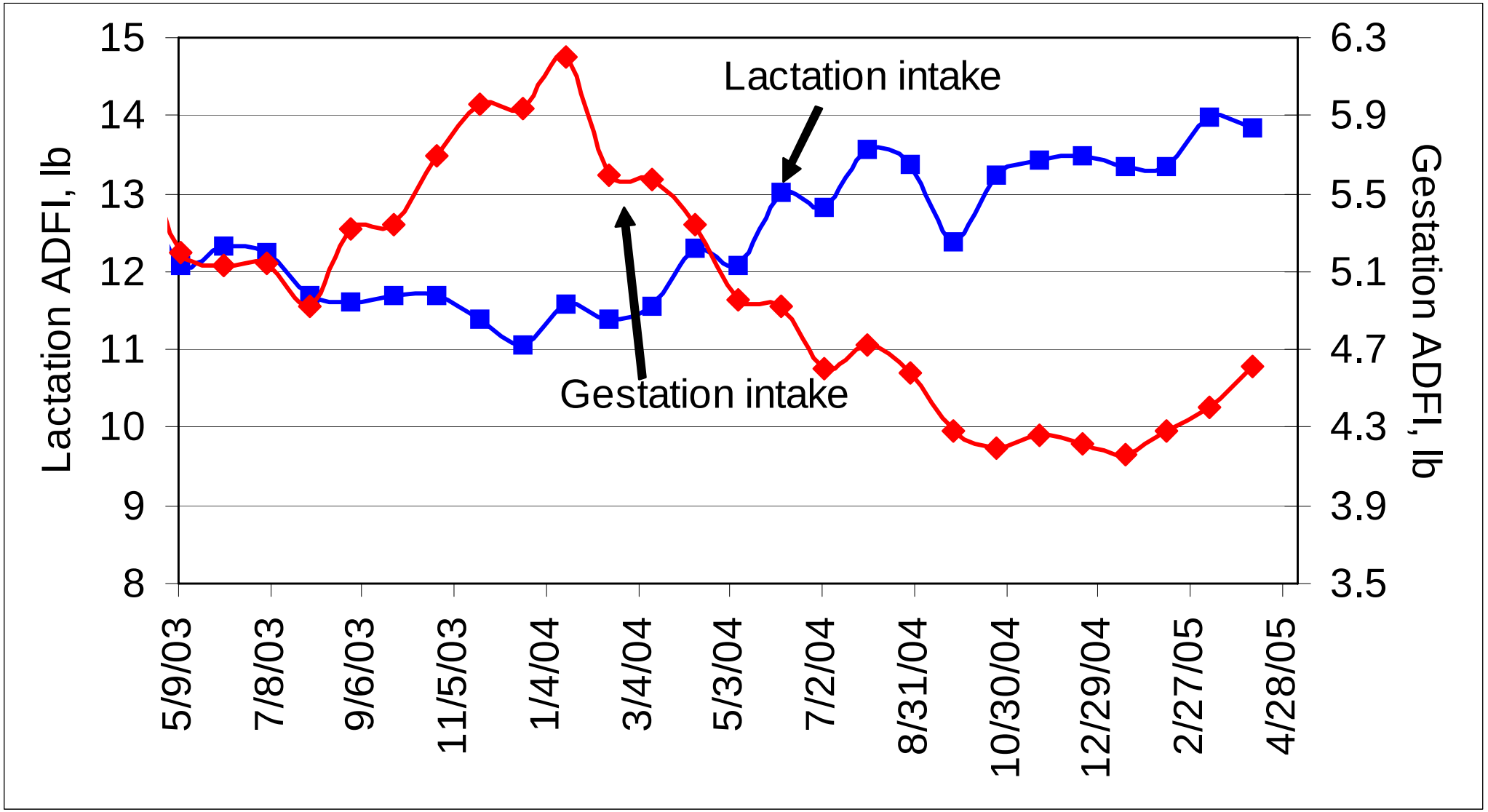
Impact of gestation feed intake on lactation intake

- Large production system in the U.S. with high gestation feed usage and low lactation intake
- Changed gestation feeding program to lower intake and tracked changes in reproductive performance

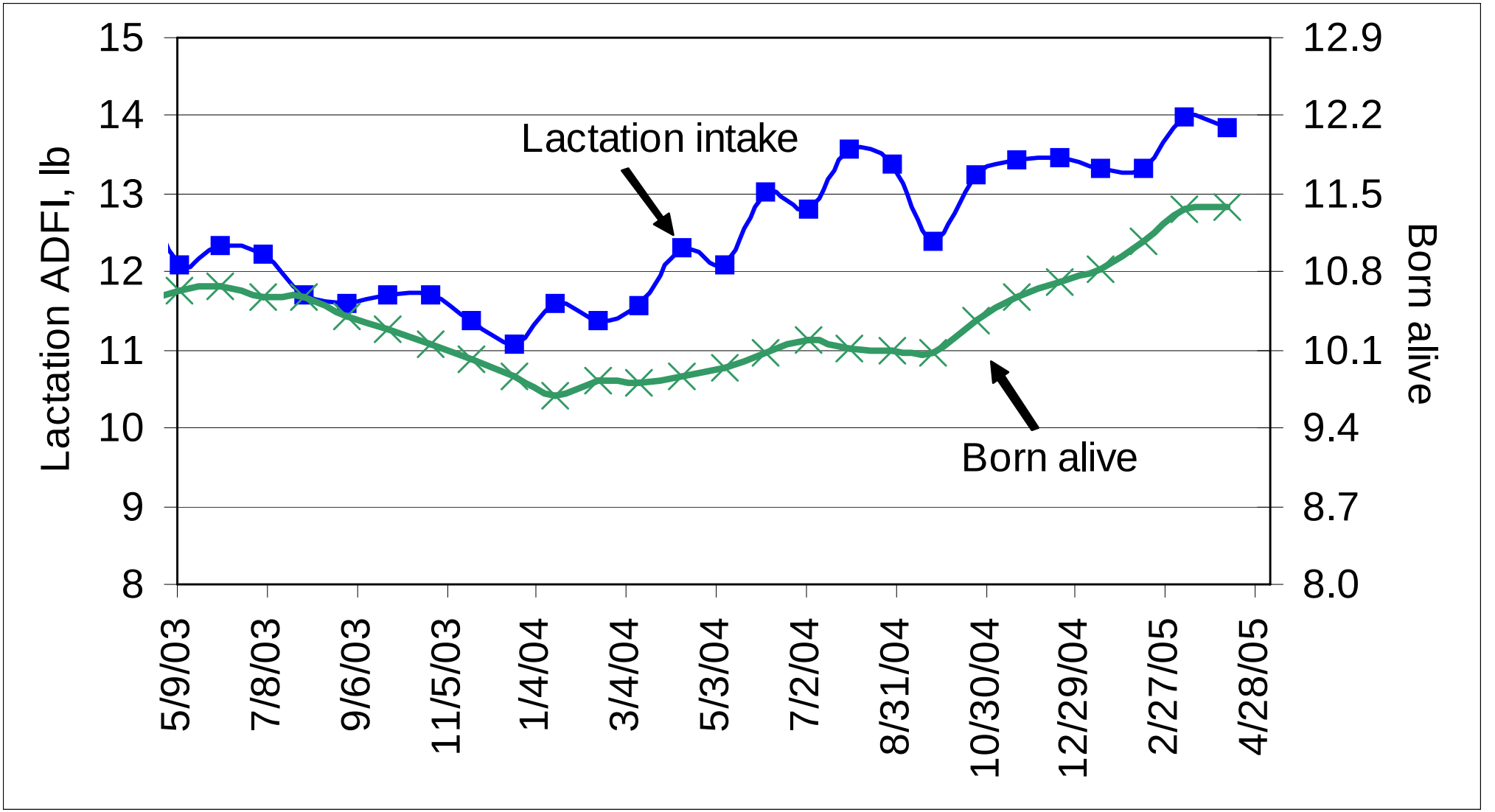
Tracking gestation and lactation feed intake
Six month rolling average



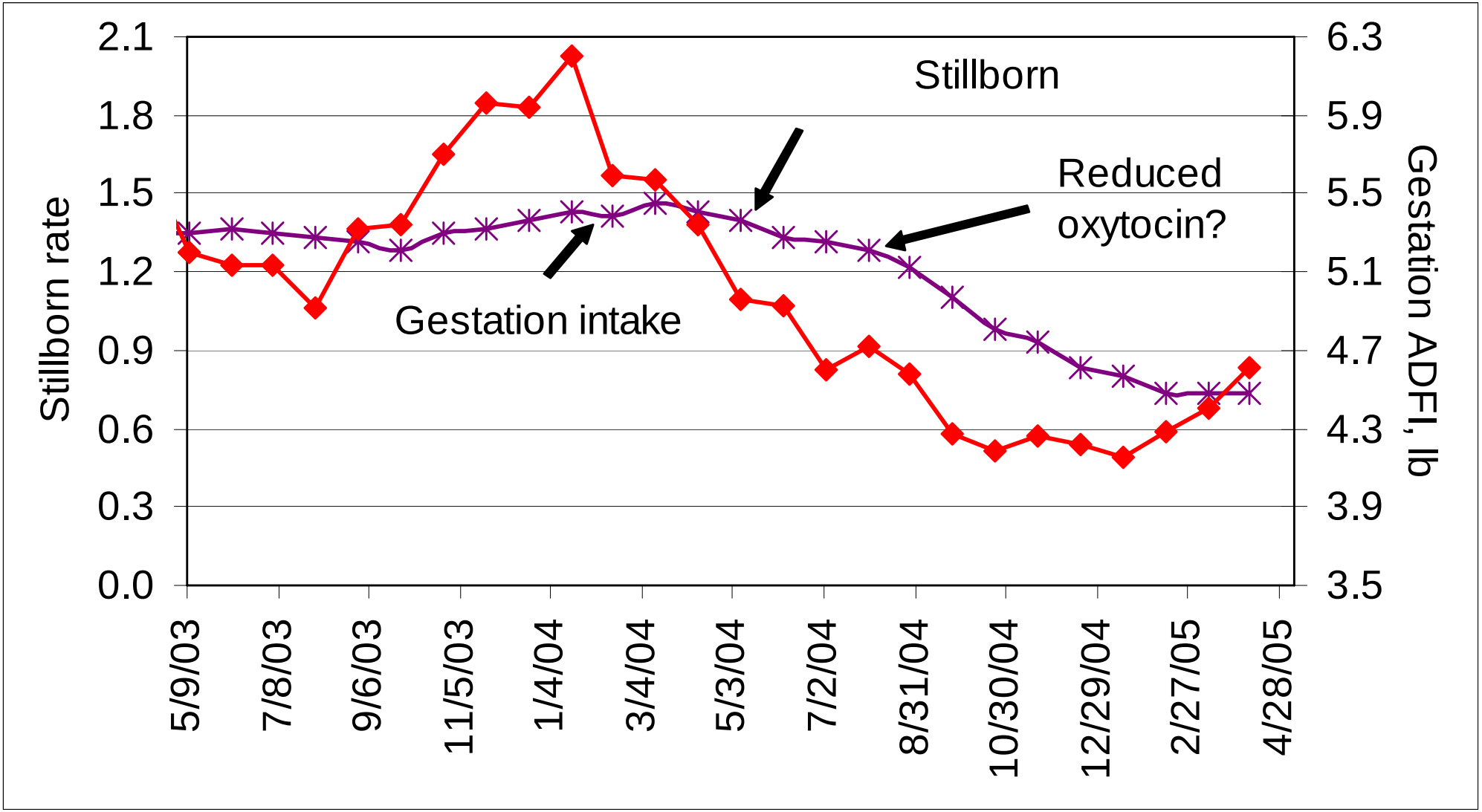
Relationship between lactation and gestation feed intake



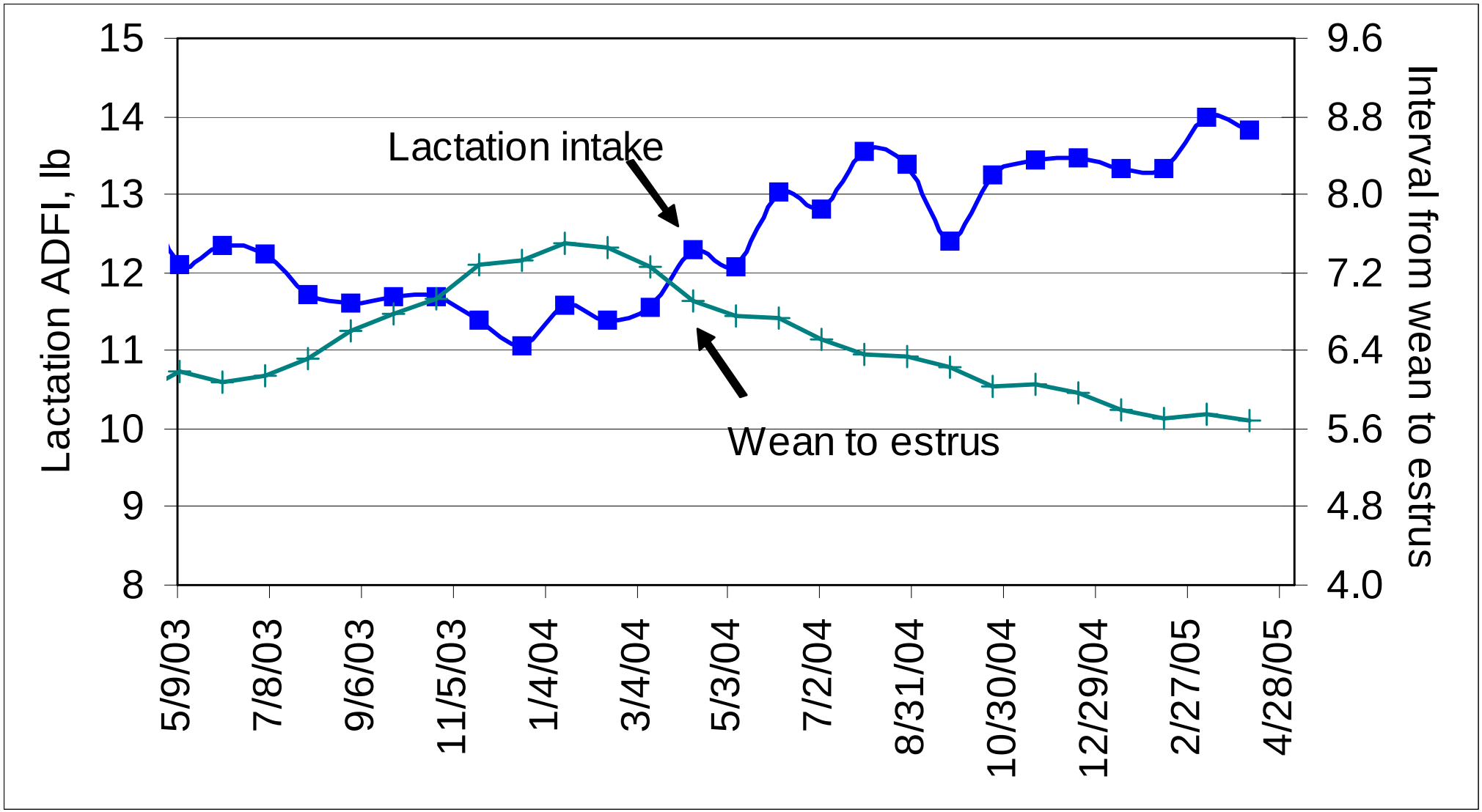
Relationship between lactation feed intake and subsequent born alive



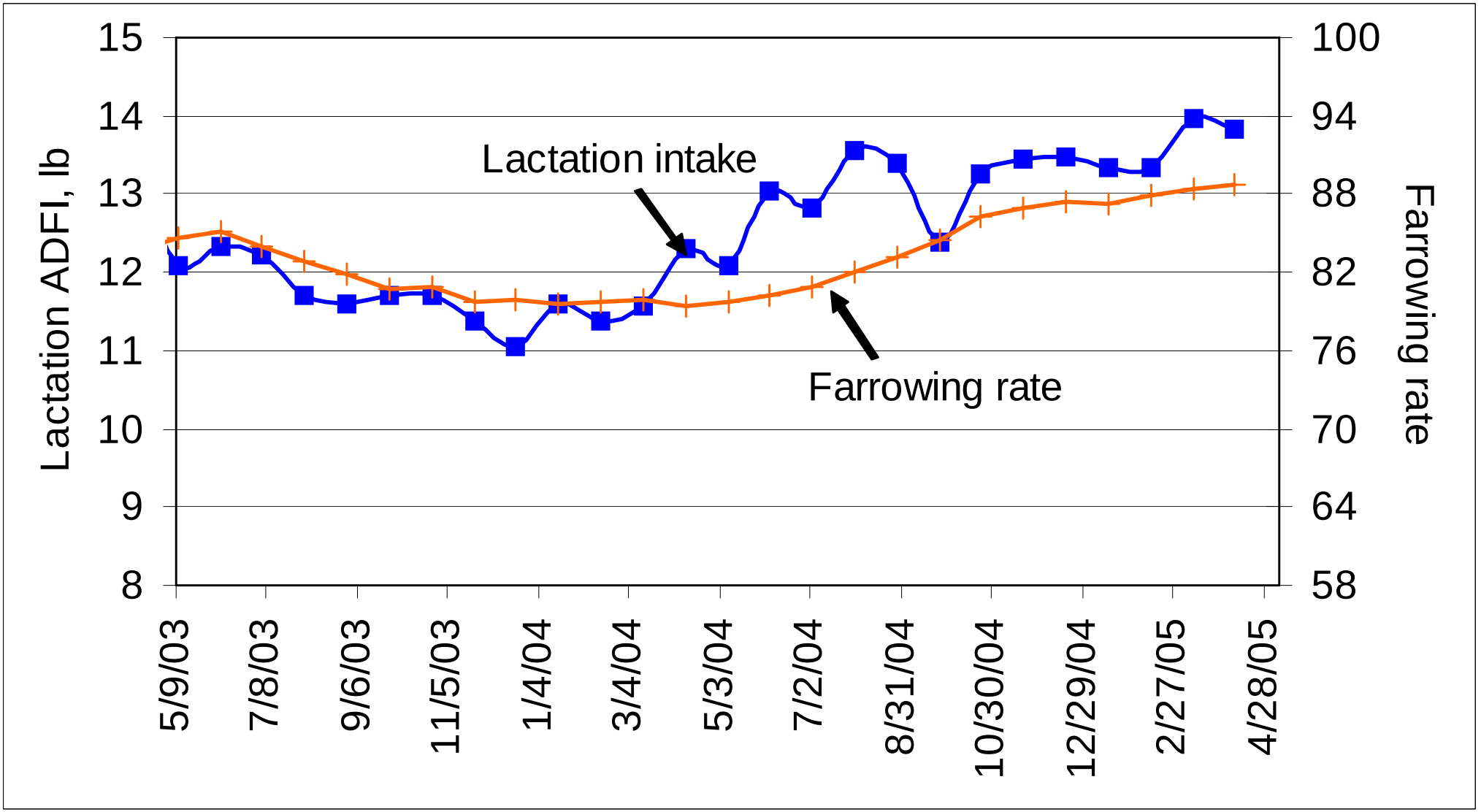
Relationship between gestation feed intake and stillborn per litter



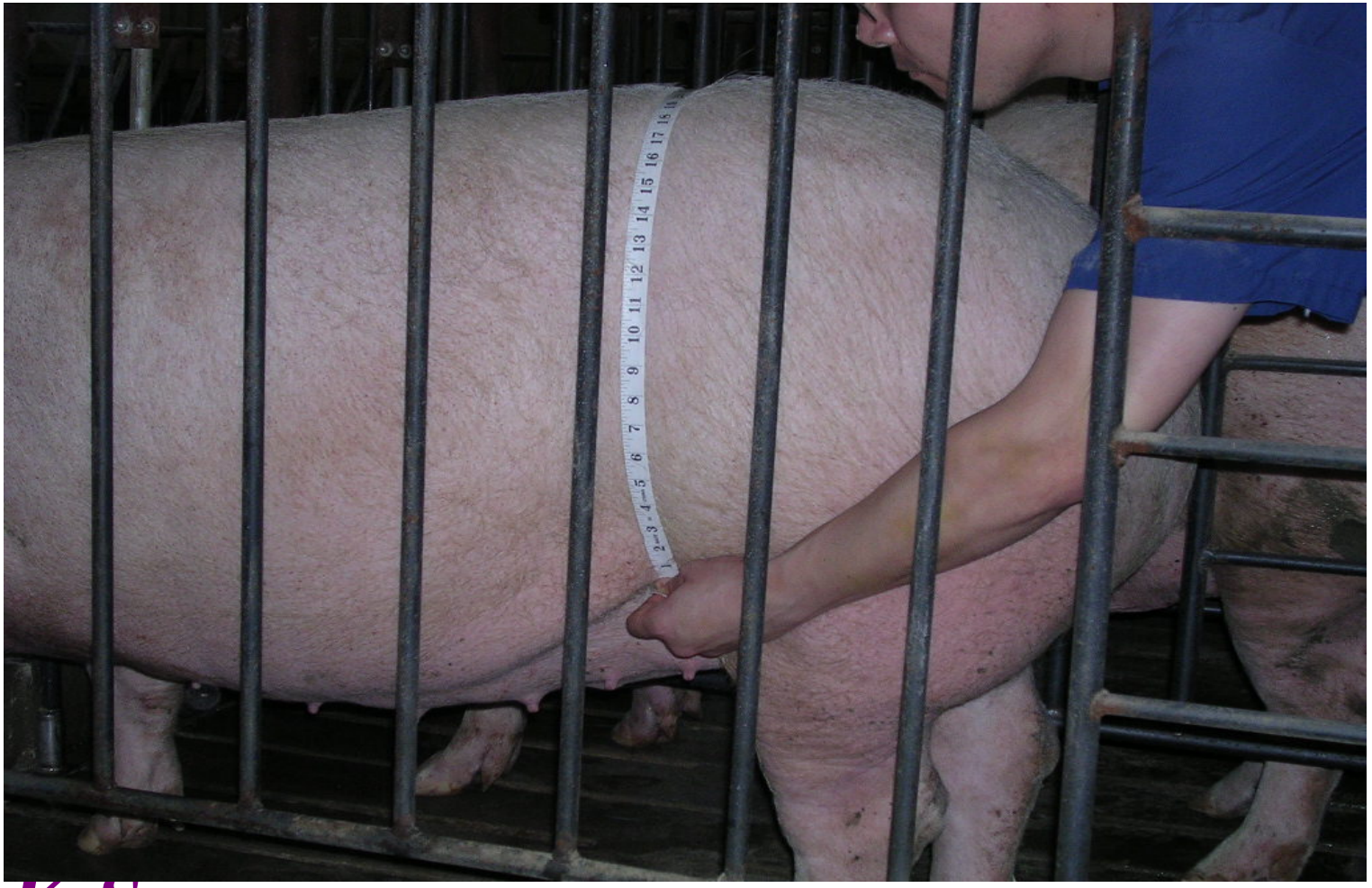
Relationship between lactation feed intake and interval from wean to estrus



Relationship between lactation feed intake and farrowing rate



Using backfat and flank measurement to set feeding levels



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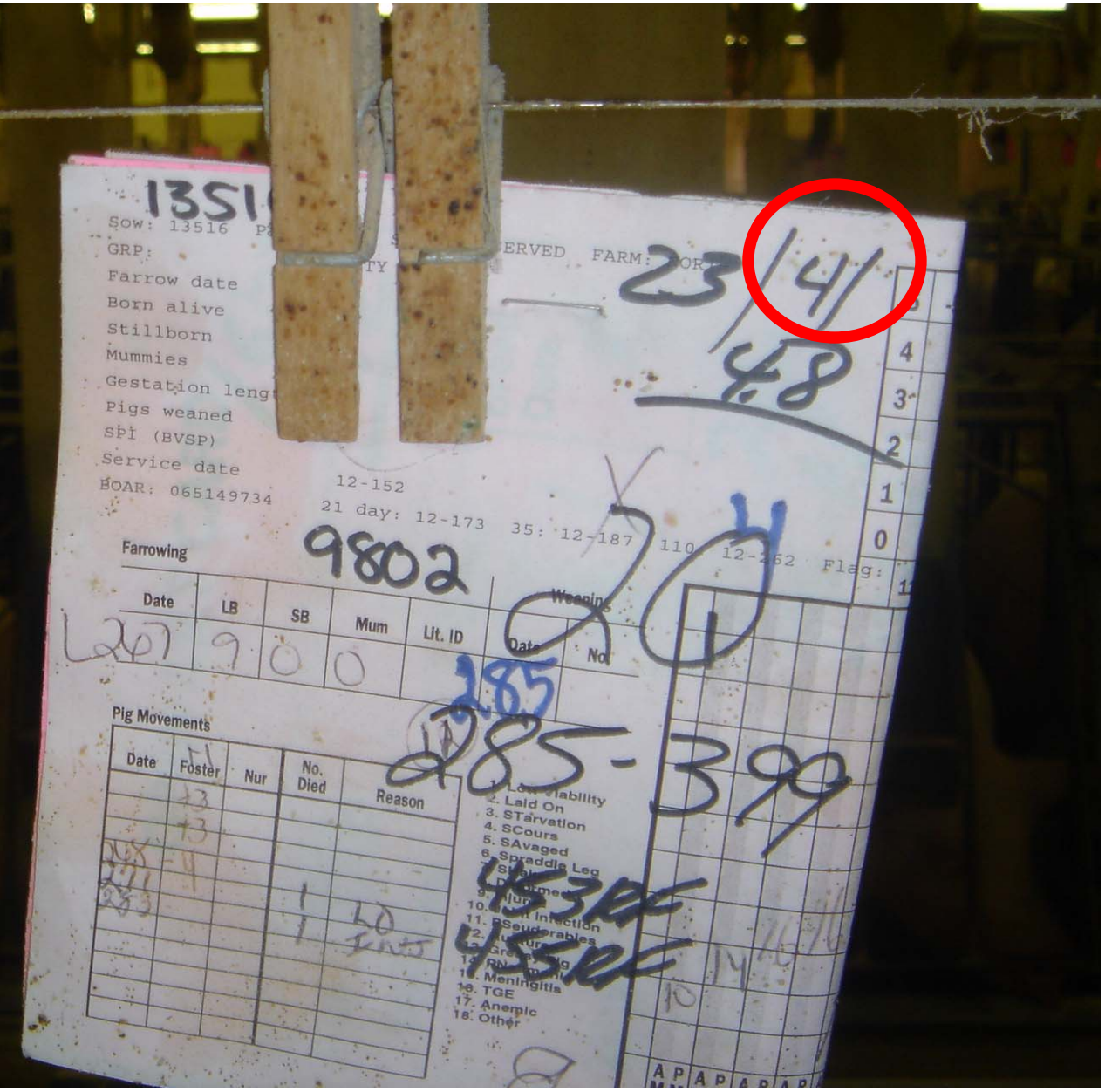

- Flank measurement obtained at estrus detection
- Number is written on the sow card hanging above the stall

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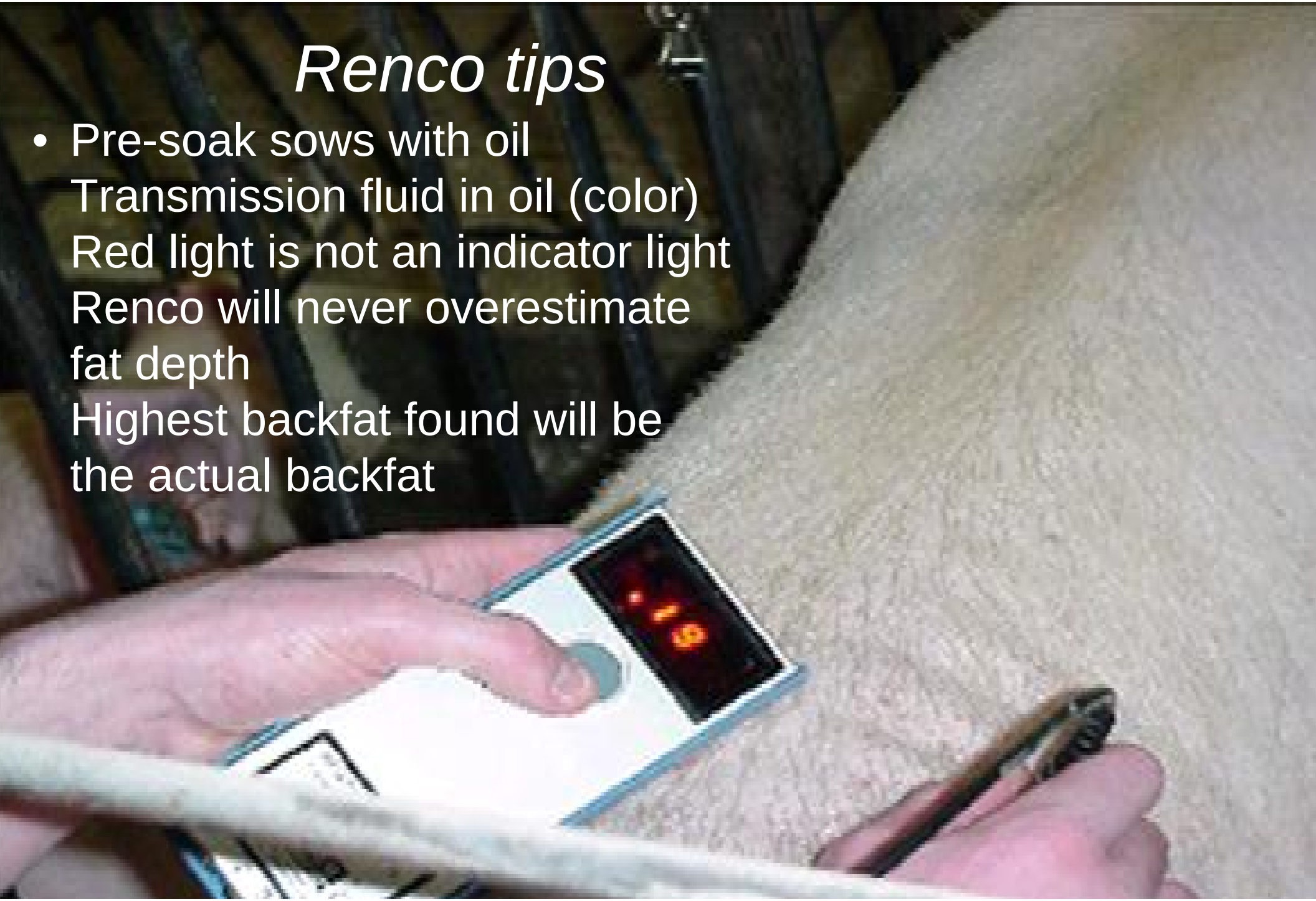
- Flank measurement can be used to rapidly monitor weight at first breeding for gilts

- 35” ~ 300 lb
- 90 cm ~ 135 kg


Find the backbone at
the last rib and
measure about 2.5
inches over

Renco tips

- Pre-soak sows with oil
  Transmission fluid in oil (color)
  Red light is not an indicator light
  Renco will never overestimate fat depth
  Highest backfat found will be the actual backfat



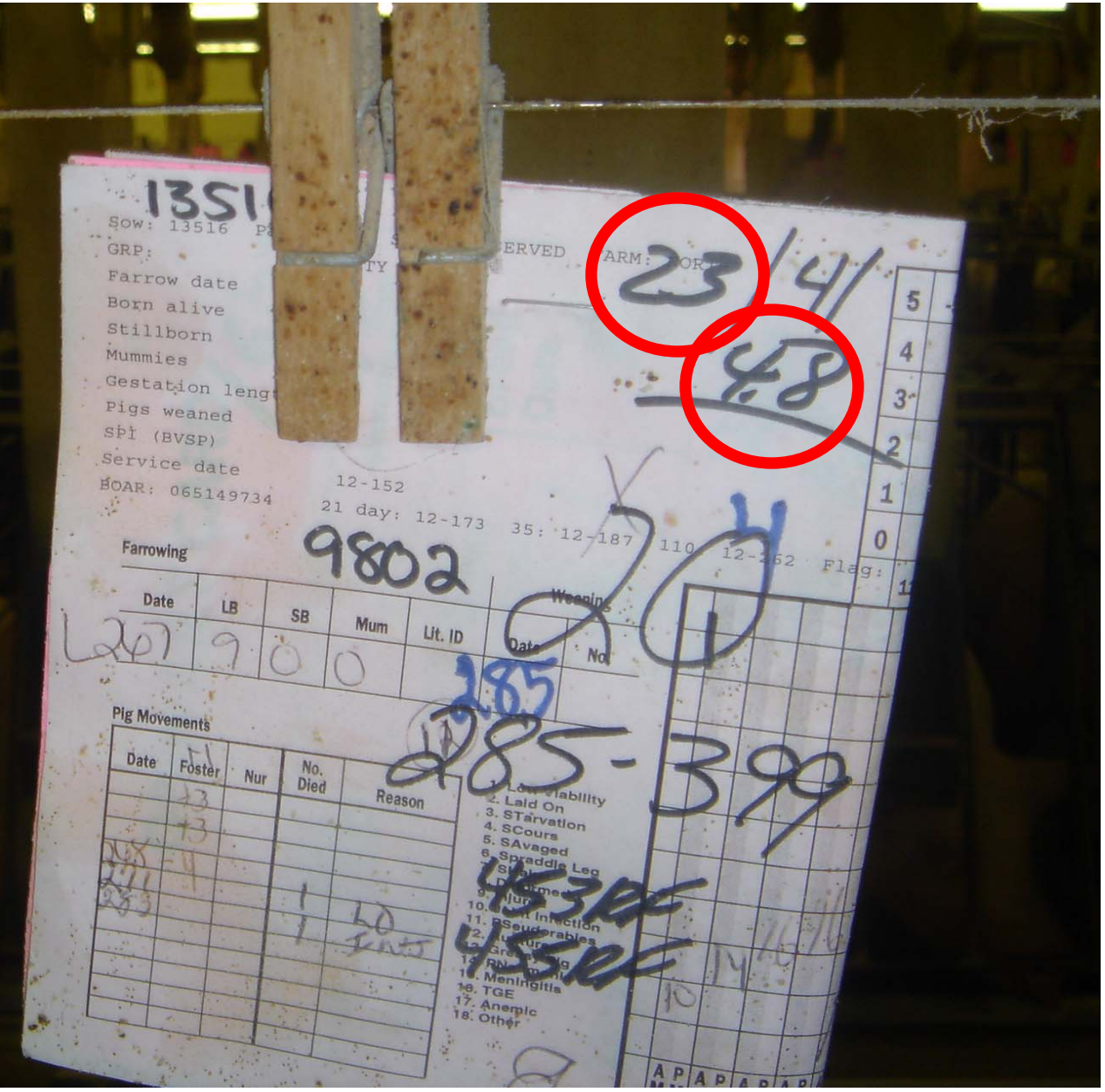
Real-Time Ultrasound – More accurate and faster

Procedure on the farm

- Flank measurement
  - Obtained at estrus detection
  - Written on card
- Boxes set at 4 lb from breeding until scanning
- All sows bred during the previous week are scanned

Tray with scanner and supplies that can be easily moved across the top of the stalls


18 to 20 sows are scanned per hour
AQUAFINA
Pure Water • Perfect Taste
Wesson
Nutrition Facts



- Fat depth and feed box setting are written on the card and placed facing feed boxes
- Feed boxes are then adjusted accordingly
- Fat depth, flank measurement, and setting can then be easily monitored anytime during gestation

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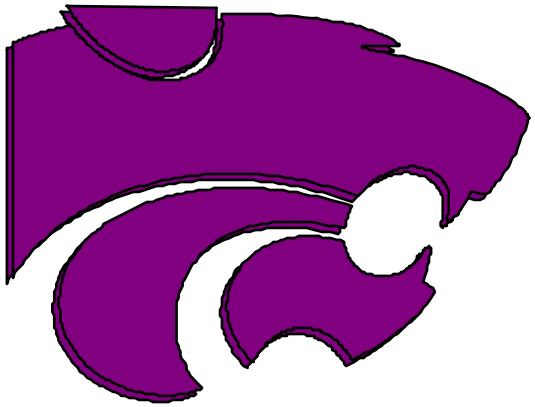
Swine Day 2005

Sows



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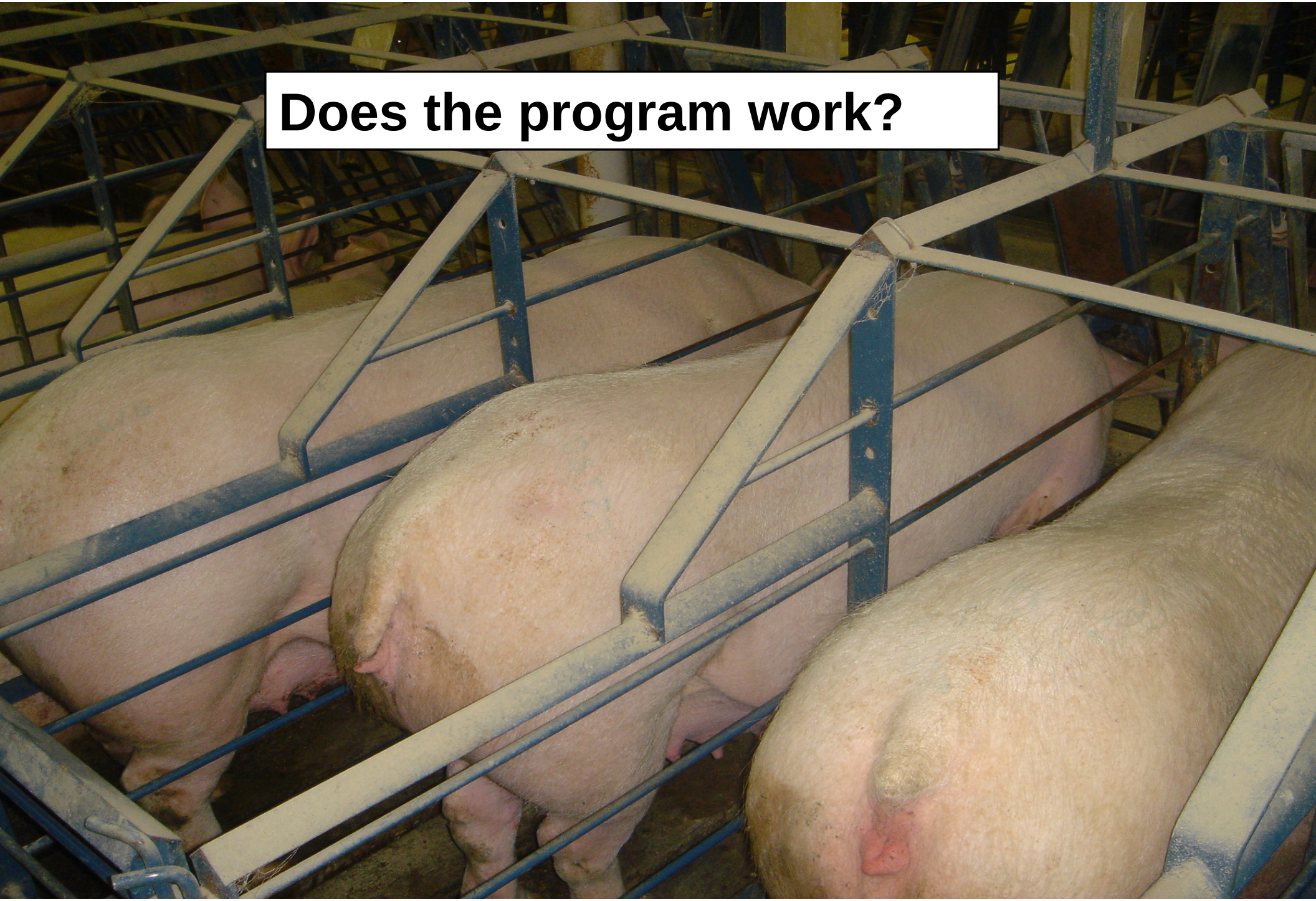
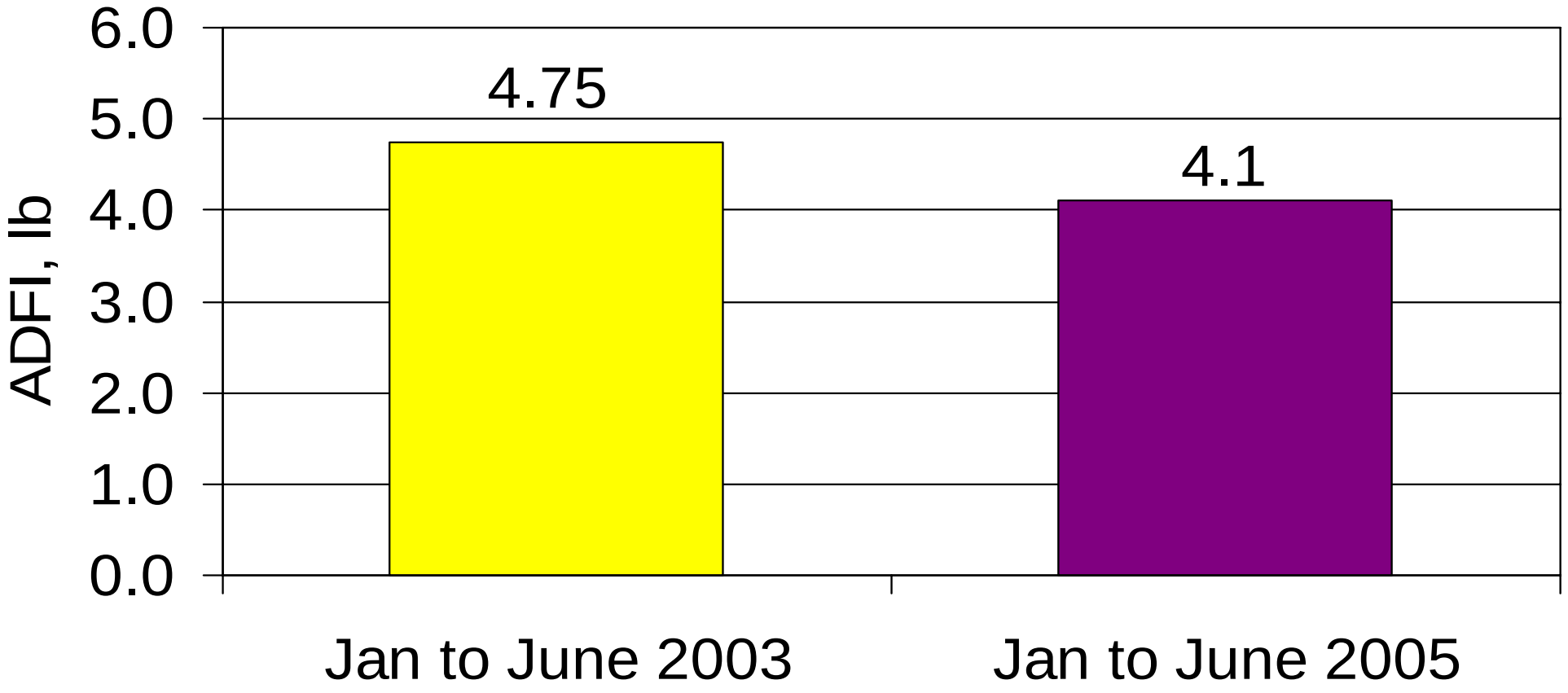
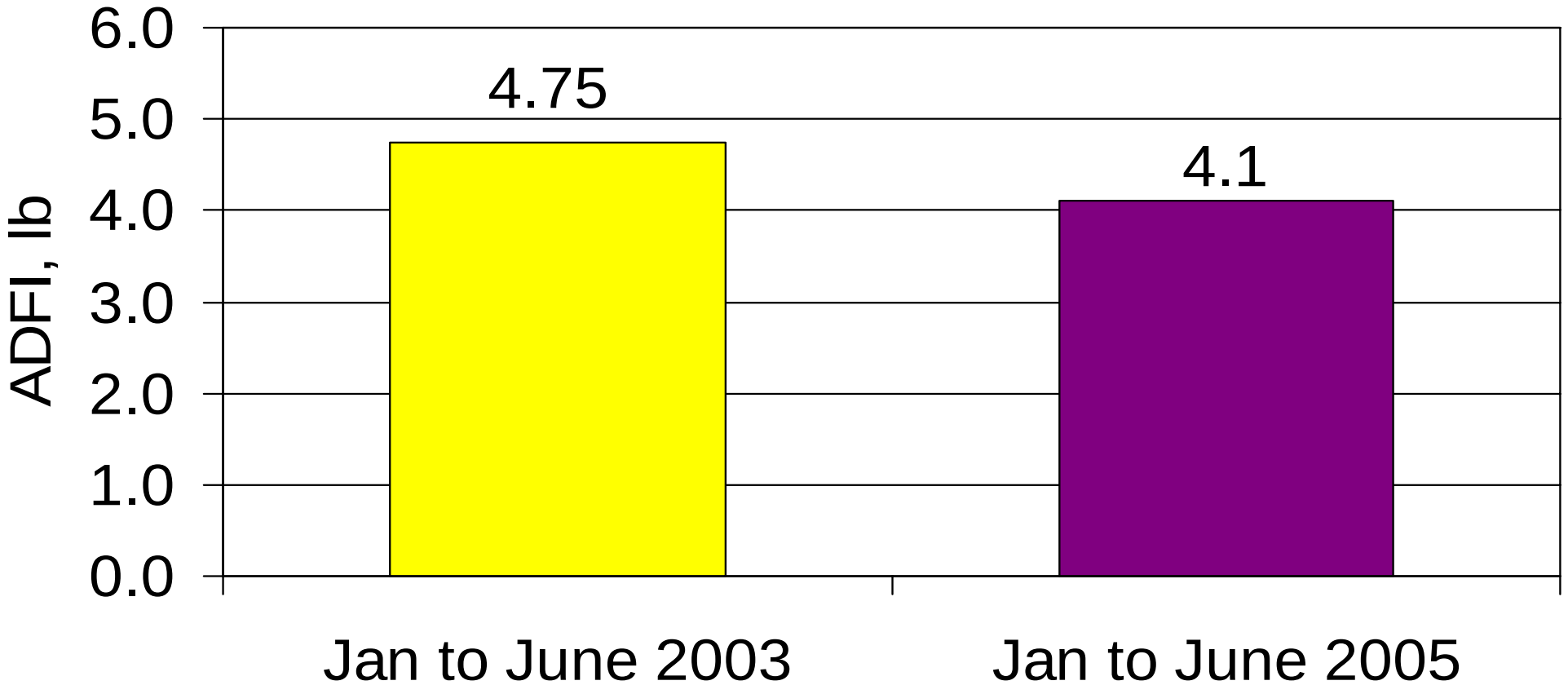

Does the program work?

Average Daily Gestation Intake, lb



Implementation of Gestation Feeding program was July/August 2003

Results in a $100,985 / year reduction in Gestation Feed Cost ($10/sow/year)



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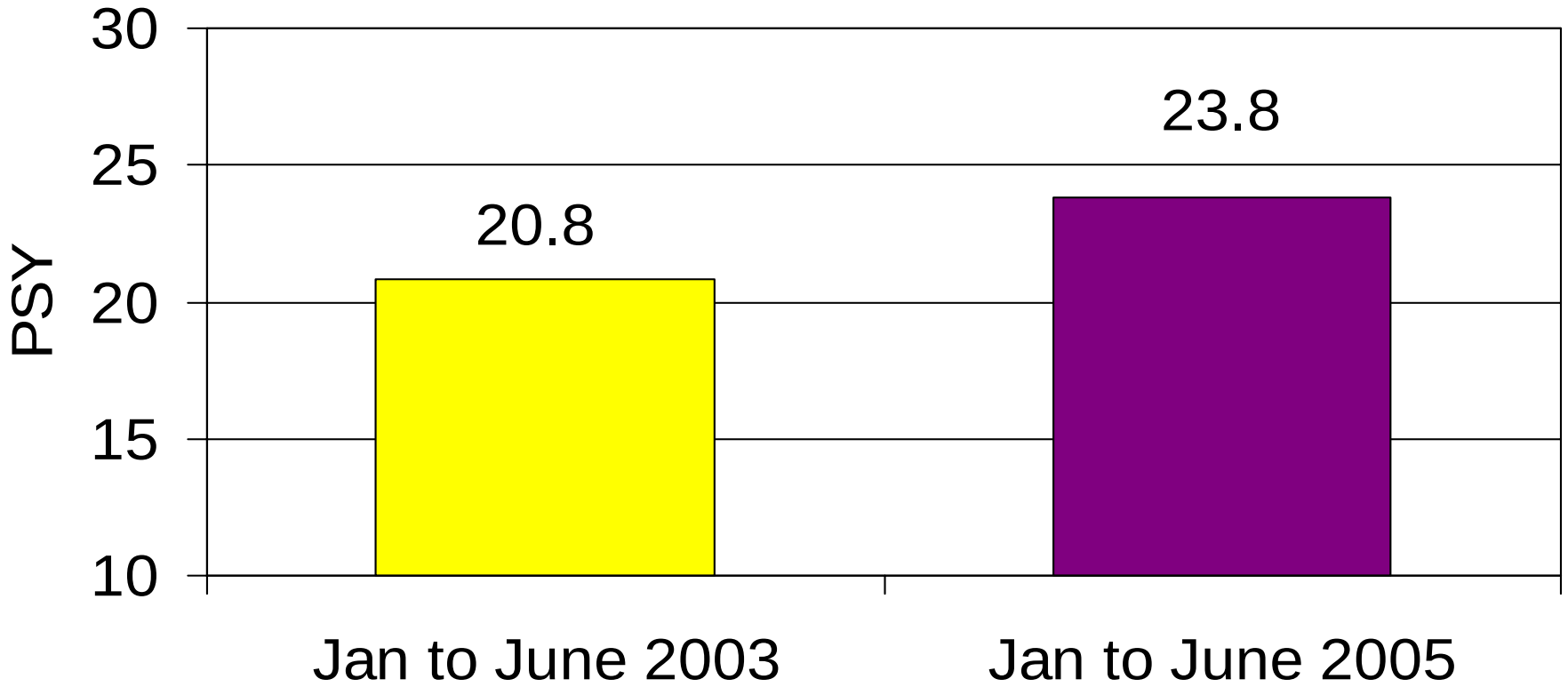
Pigs Weaned per Sow Per Year



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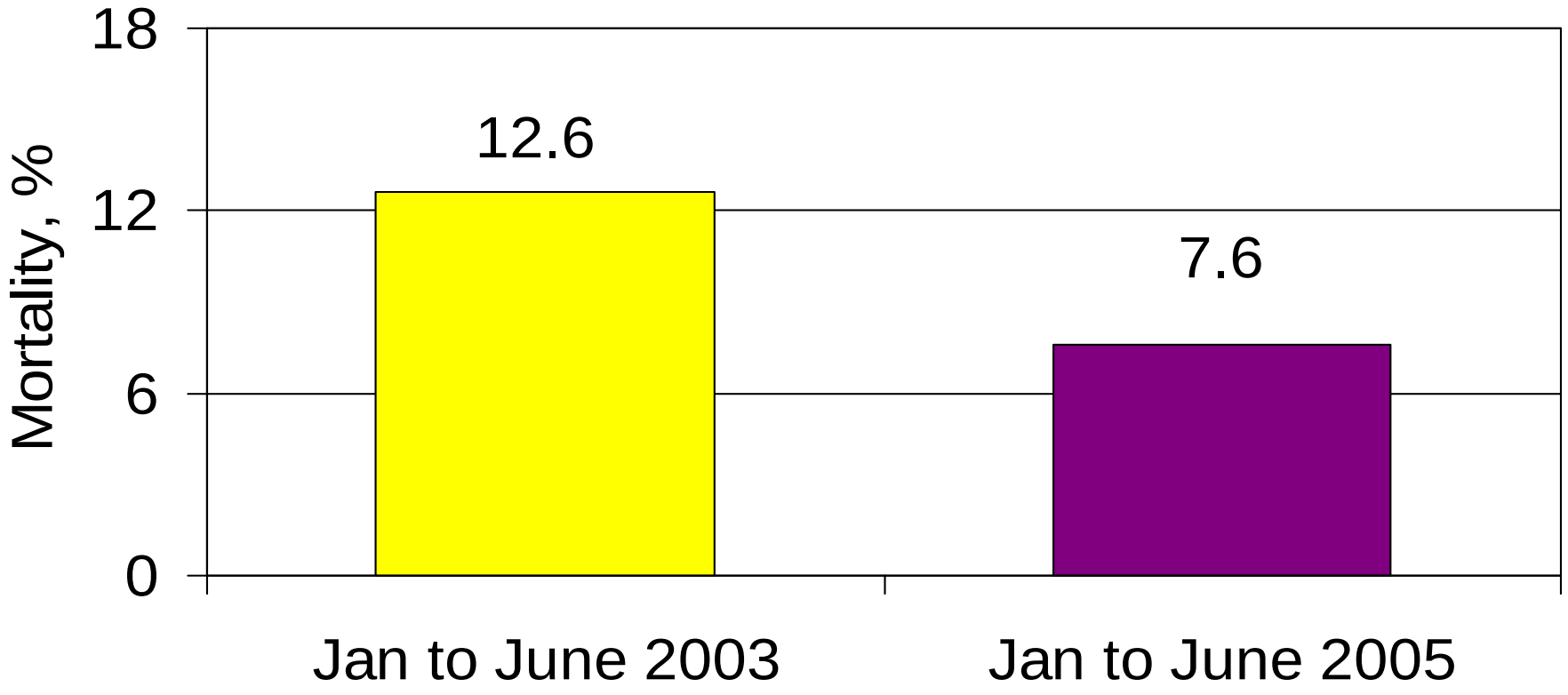
Annual Sow Mortality



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Feed cost savings have more than covered technician equipment cost while reproductive performance has improved and sow mortality has decreased

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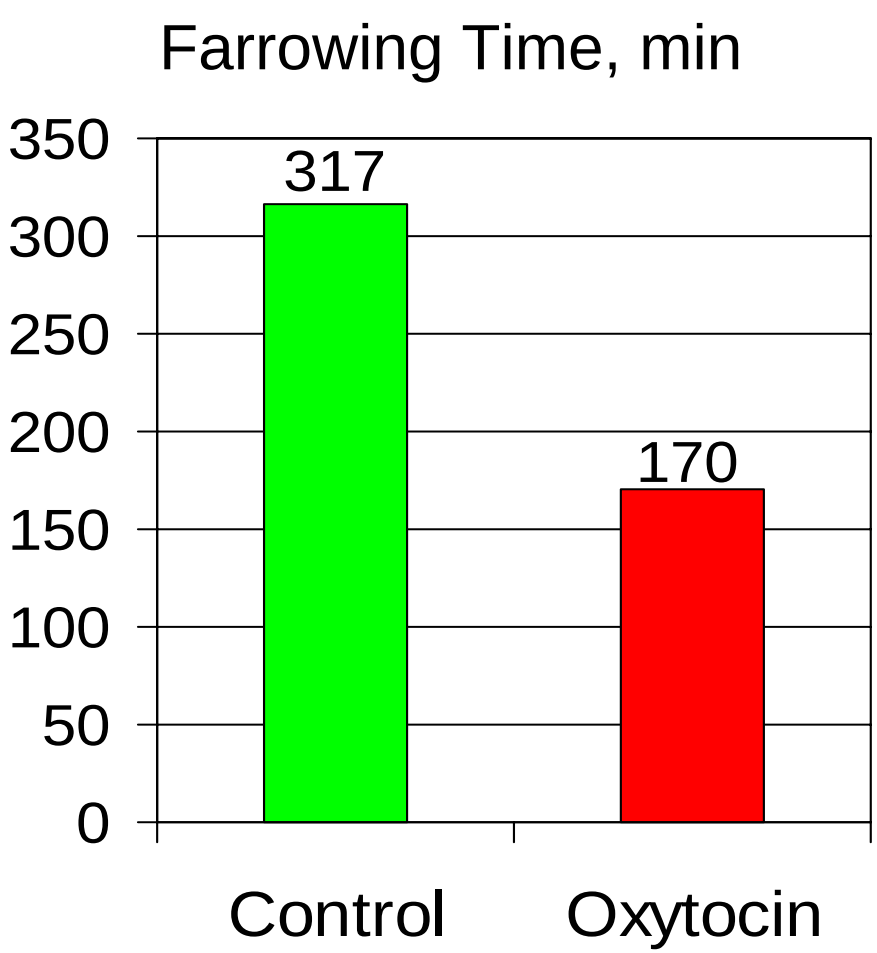
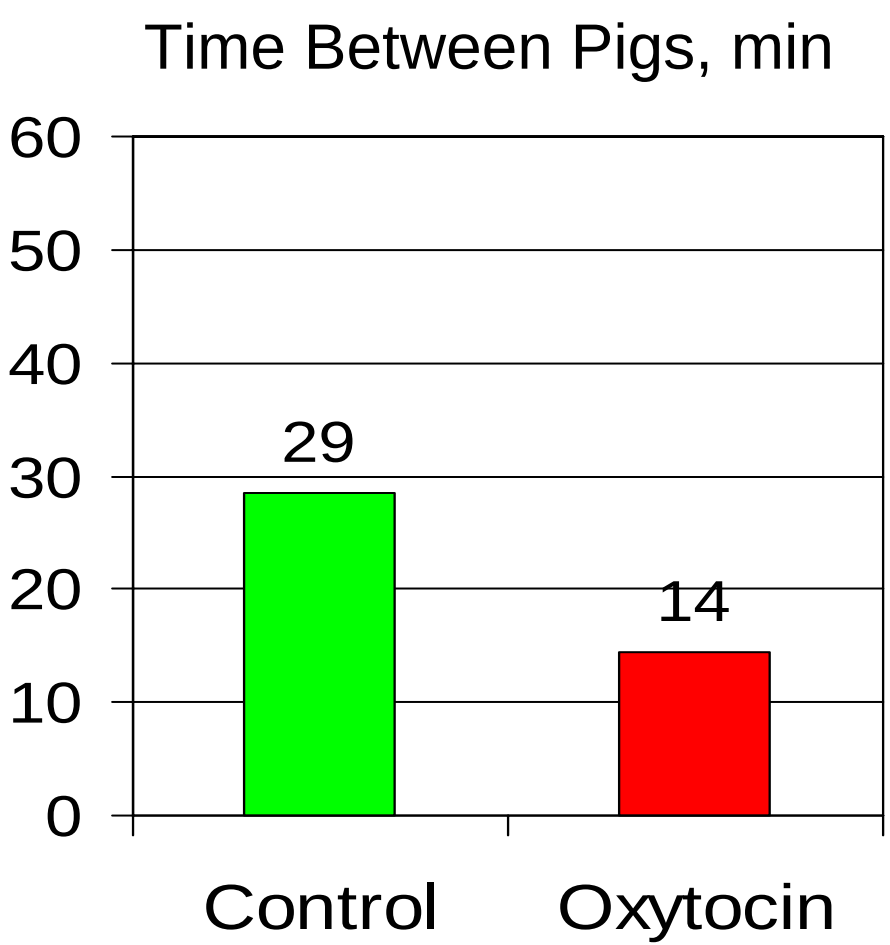
Effect of oxytocin on farrowing time





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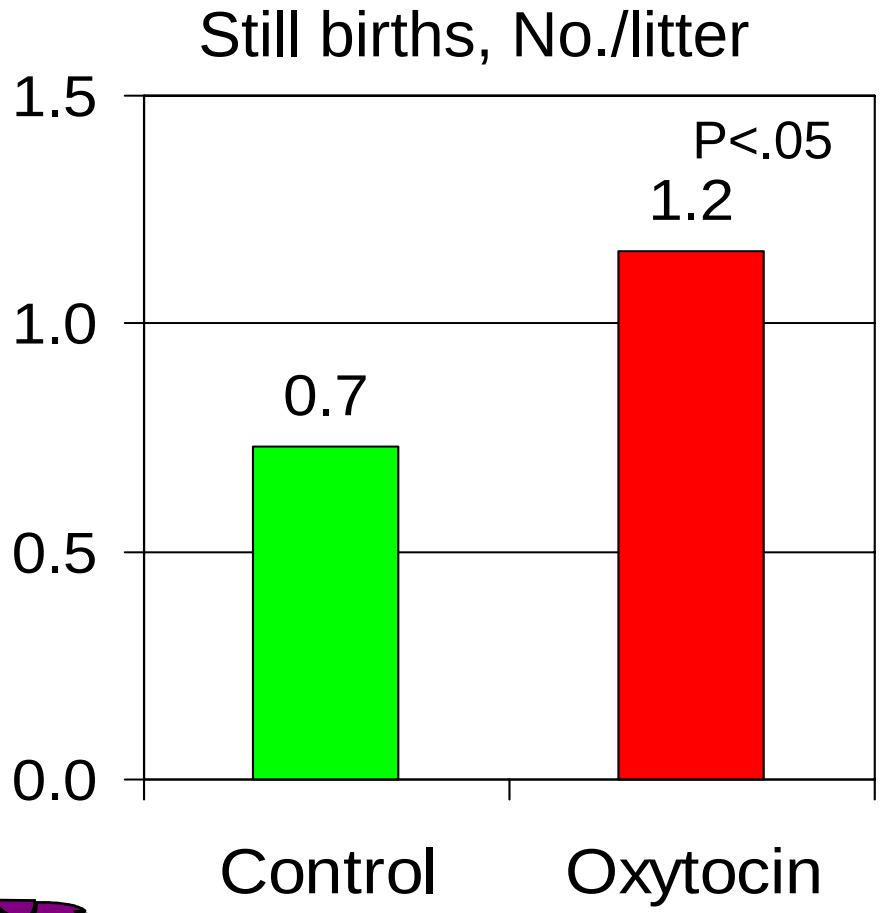
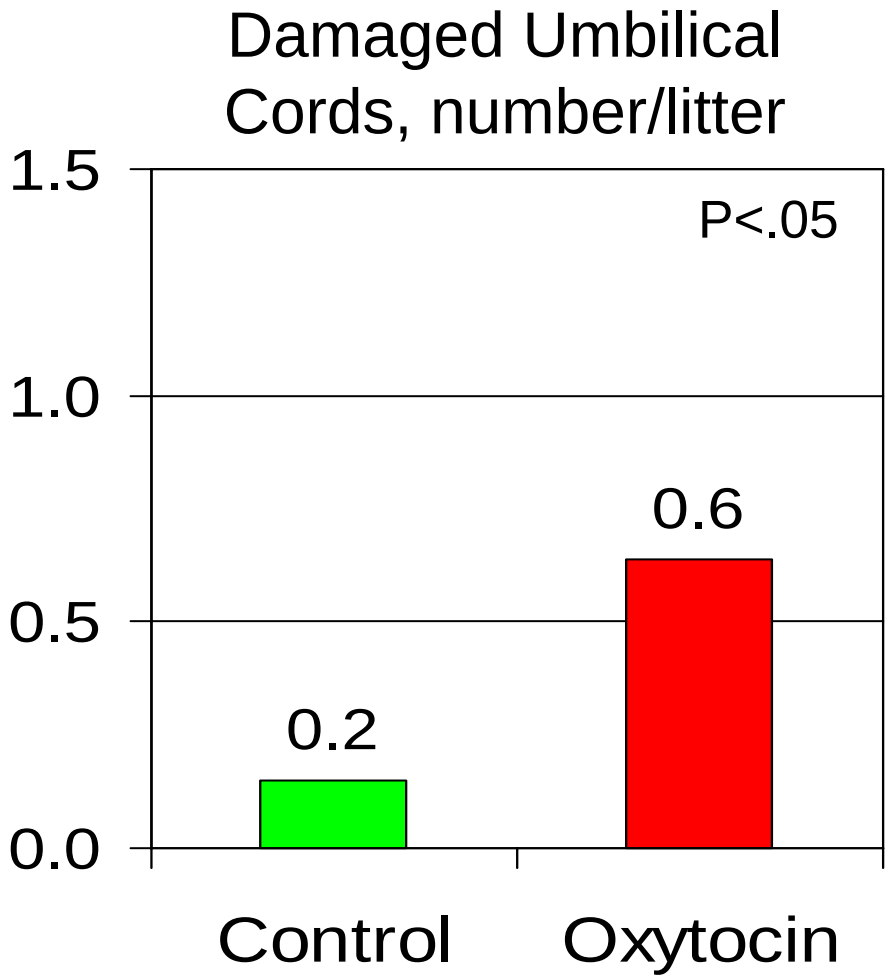
Mota-Rojas, et al., 2004

Effect of oxytocin on stillbirths and umbilical cord damage





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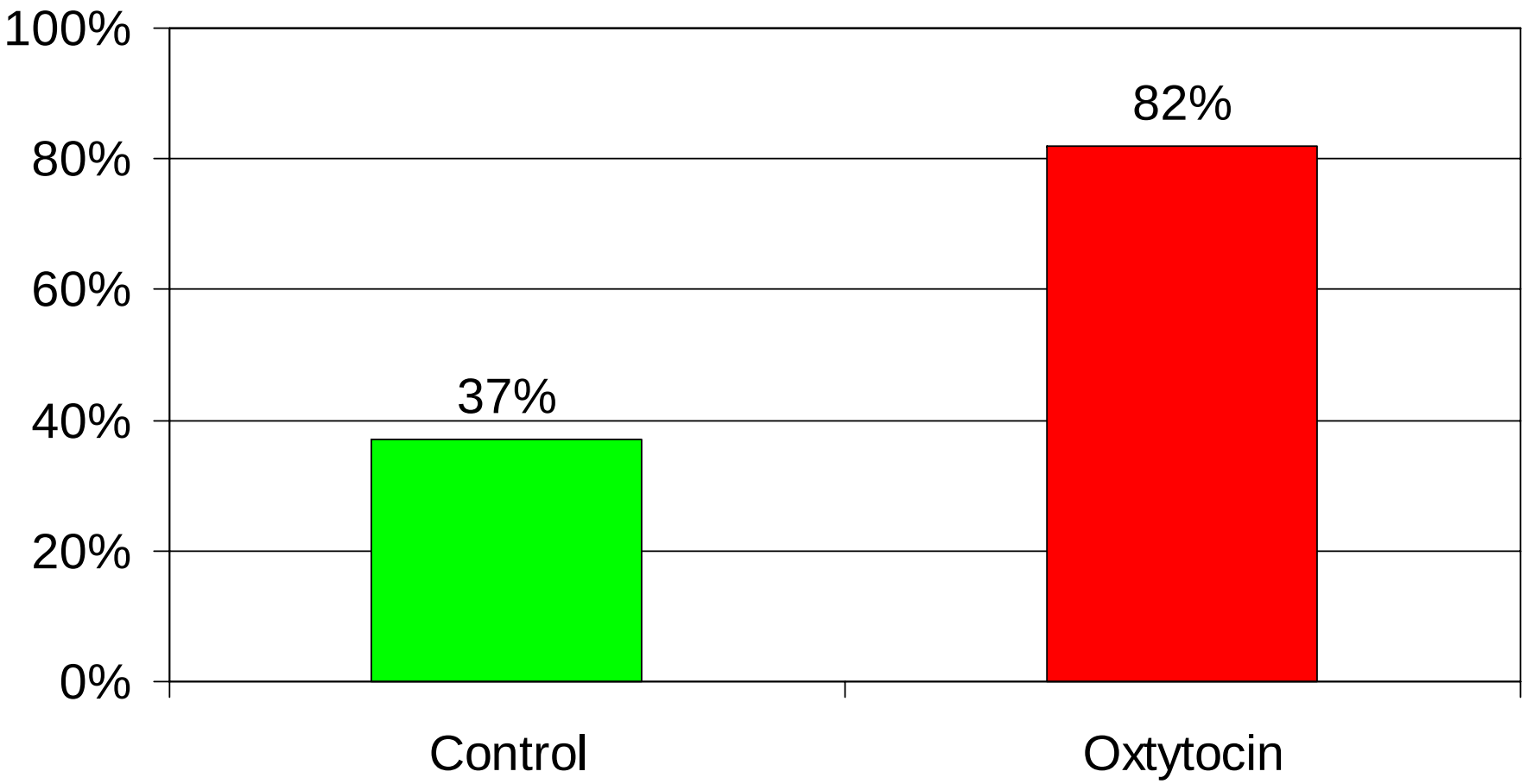
Mota-Rojas, et al., 2004

Proportion of litters with at least one stillbirth



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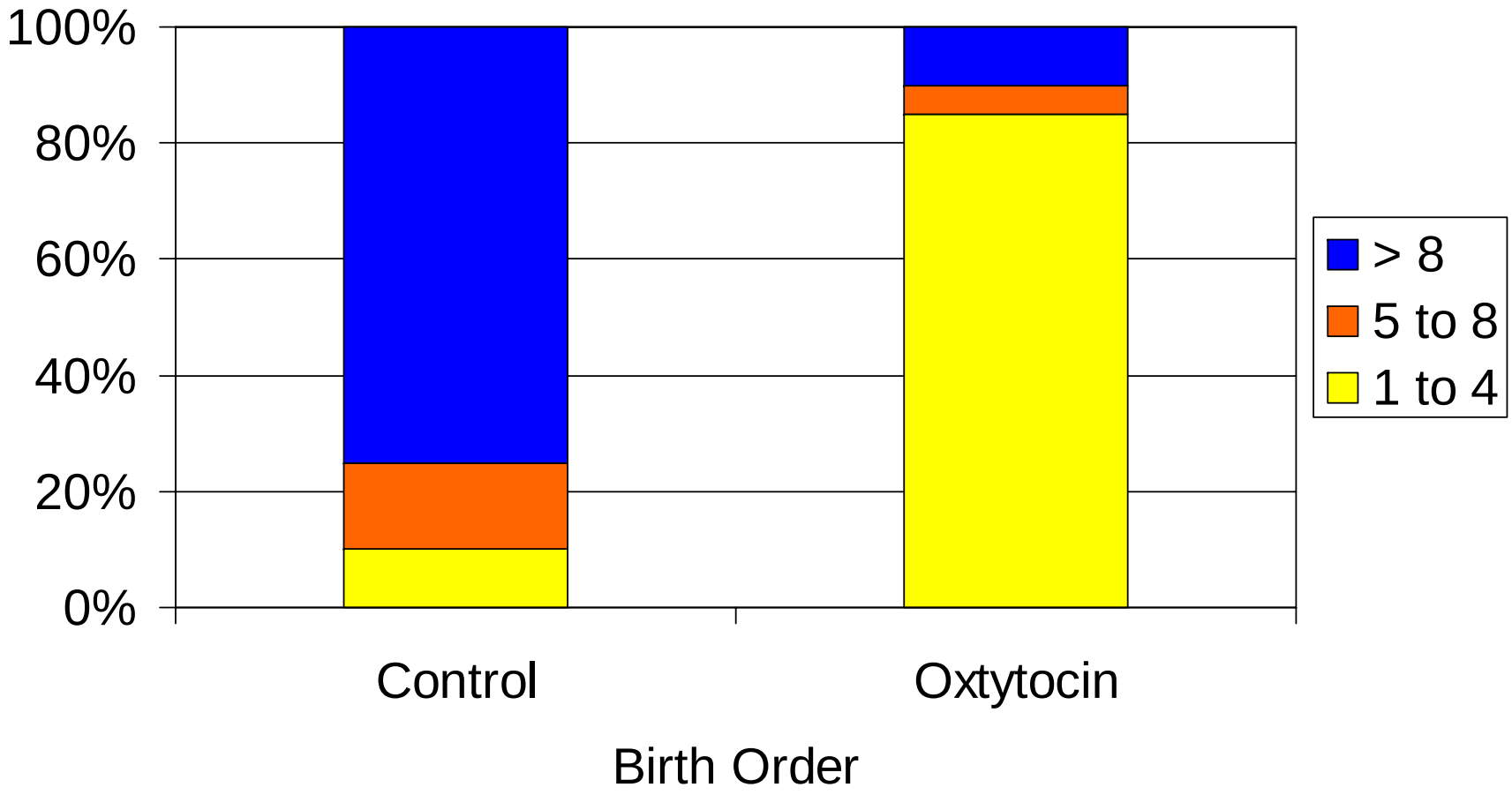
Mota-Rojas, et al., 2002

Influence of oxytocin usage on stillborn proportions by birth order



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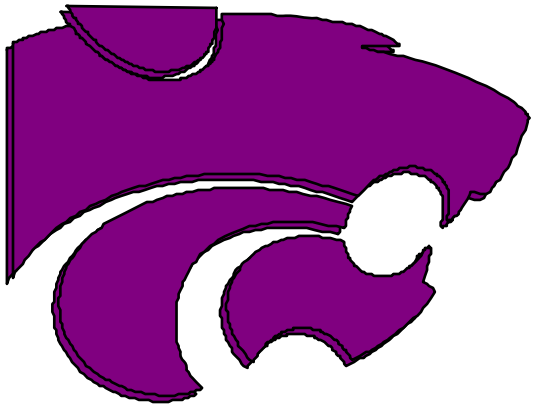
Mota-Rojas, et al., 2002

Recommendations for Oxytocin Usage

- Use 10 IU (0.5 ml) per dose
- Limit use to older parity sows
- Limit use to after the 8th pig farrowed
- Use a maximum of two doses per sow

Swine Day 2005



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