Welcome to Swine Day!

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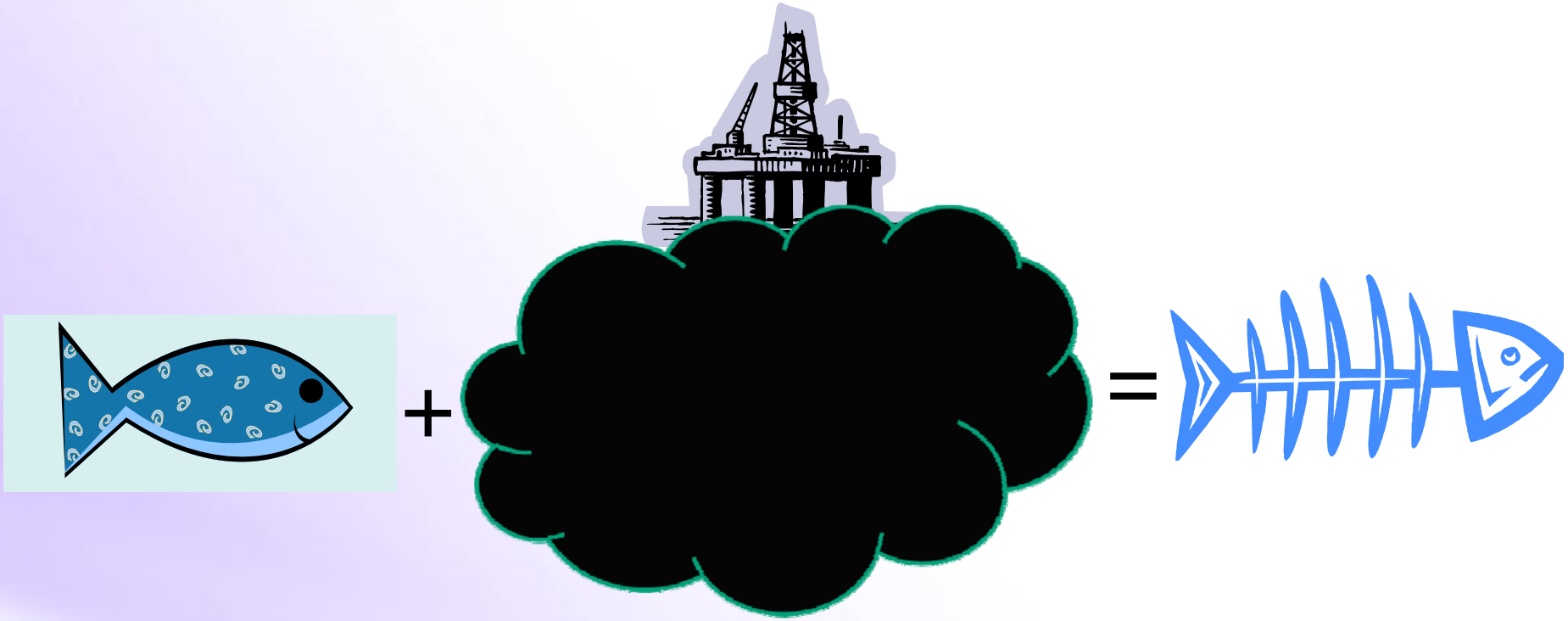
Outline for the Day

- Nursery research
  - Fish meal replacements
  - Management
- Finisher research – DDGS (Tryptophan)
- Failure to thrive - Dr. Steve Henry
- Finisher research
  - Iodine value
  - Fiber and fat (DDGS, wheat midds)
  - Paylean
  - Management
- Managing risk - Joe Kerns

What to do without fish meal



Replacing Specialty Protein Sources in Phase 2 Nursery Diets with Crystalline Amino Acids

AJINOMOTO HEARTLAND LLC
AJINOMOTO ANIMAL NUTRITION

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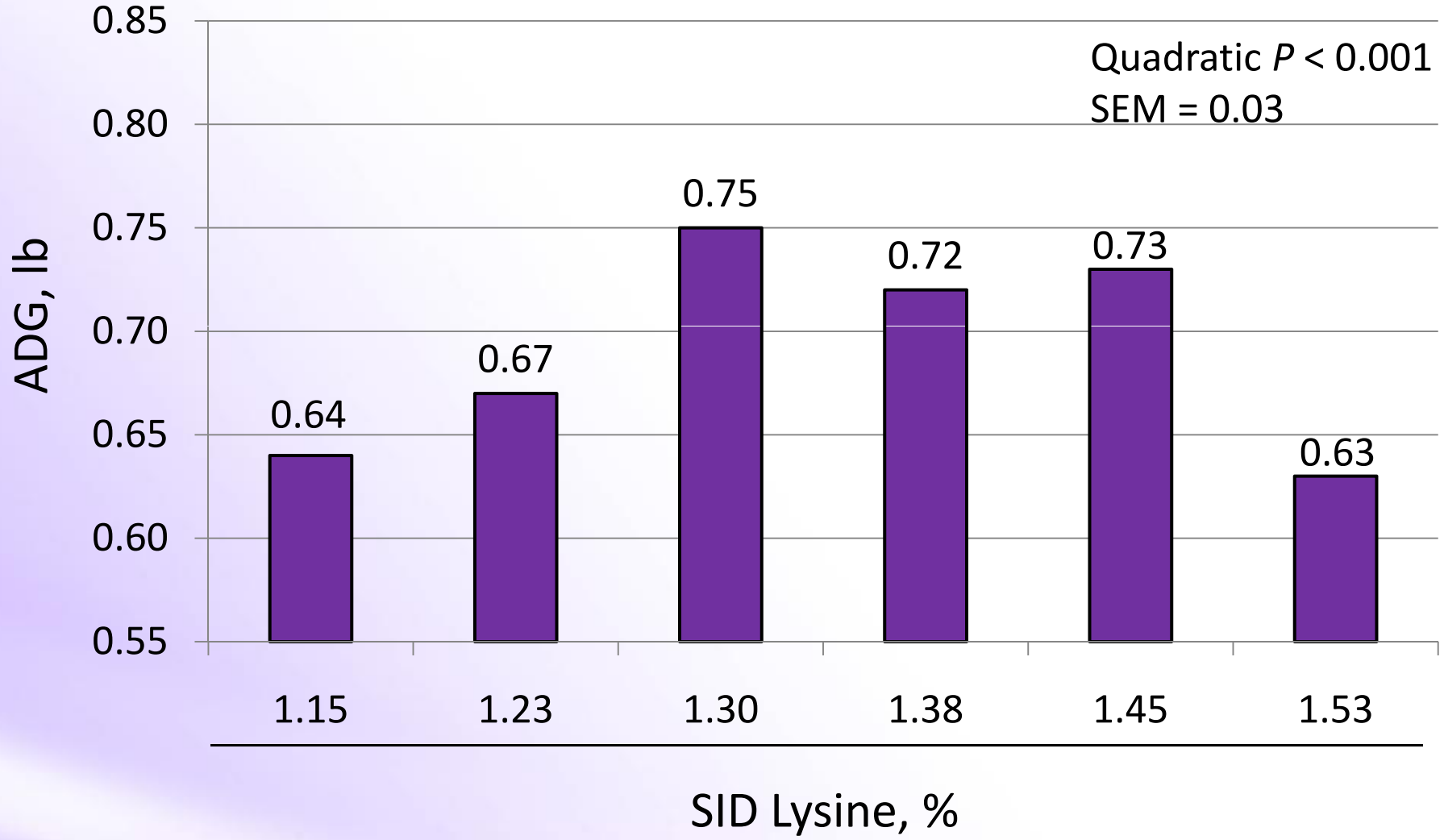
Introduction

- Several experiments have been conducted to evaluate replacing expensive specialty protein sources with crystalline amino acids in diets for 15 to 25 lb pigs.
- Mixed results have been reported between trials, indicating that further research should be done to determine the reason for the inconsistent response.

Step 1

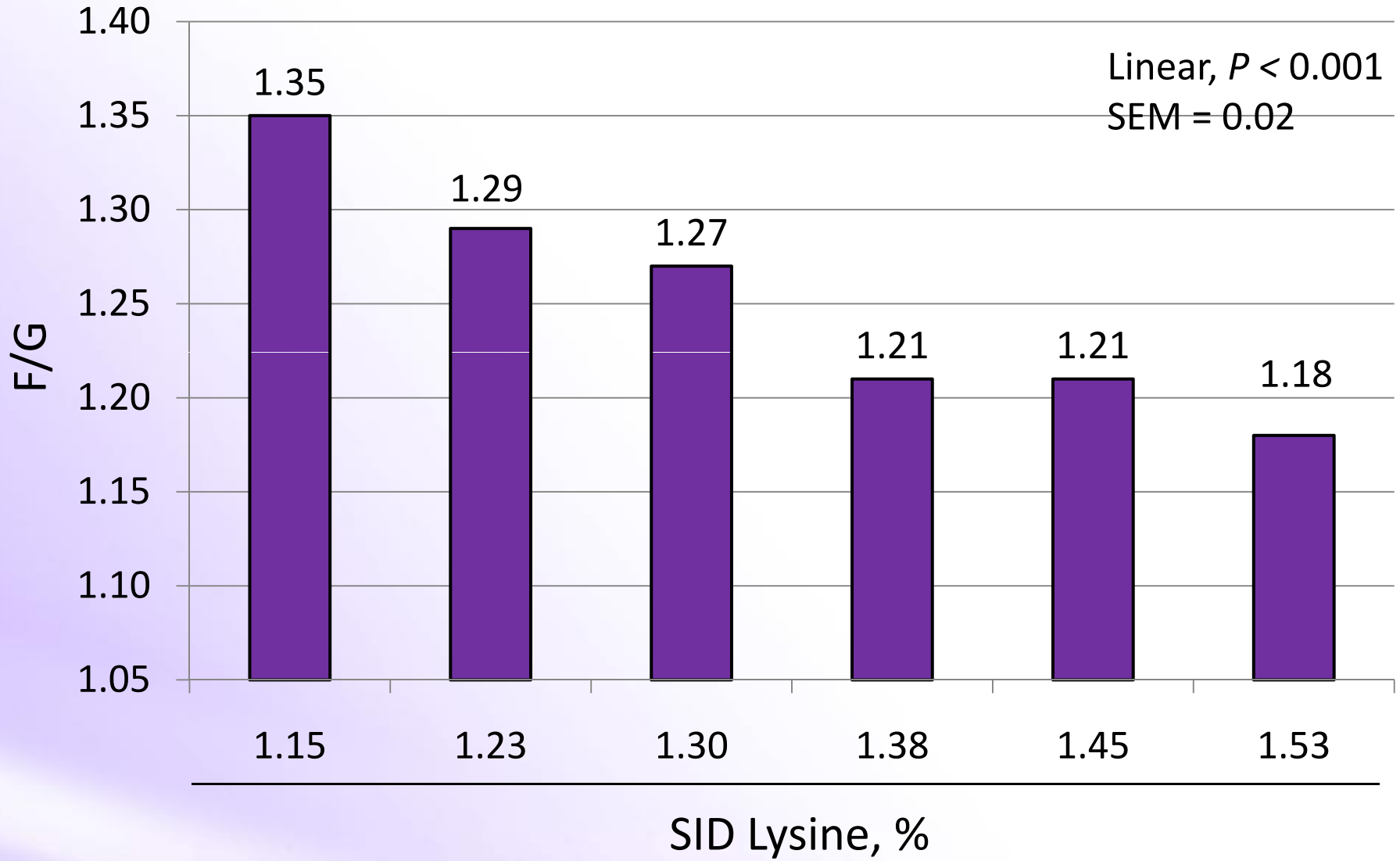
- Determine the lysine requirement of 15 to 25 lb pigs at the KSU Swine Teaching & Research Farm

Effect of dietary lysine ADG (D 0-14)



Nemechek et al., 2010

Effect of dietary lysine F/G (D 0-14)



Nemechek et al., 2010

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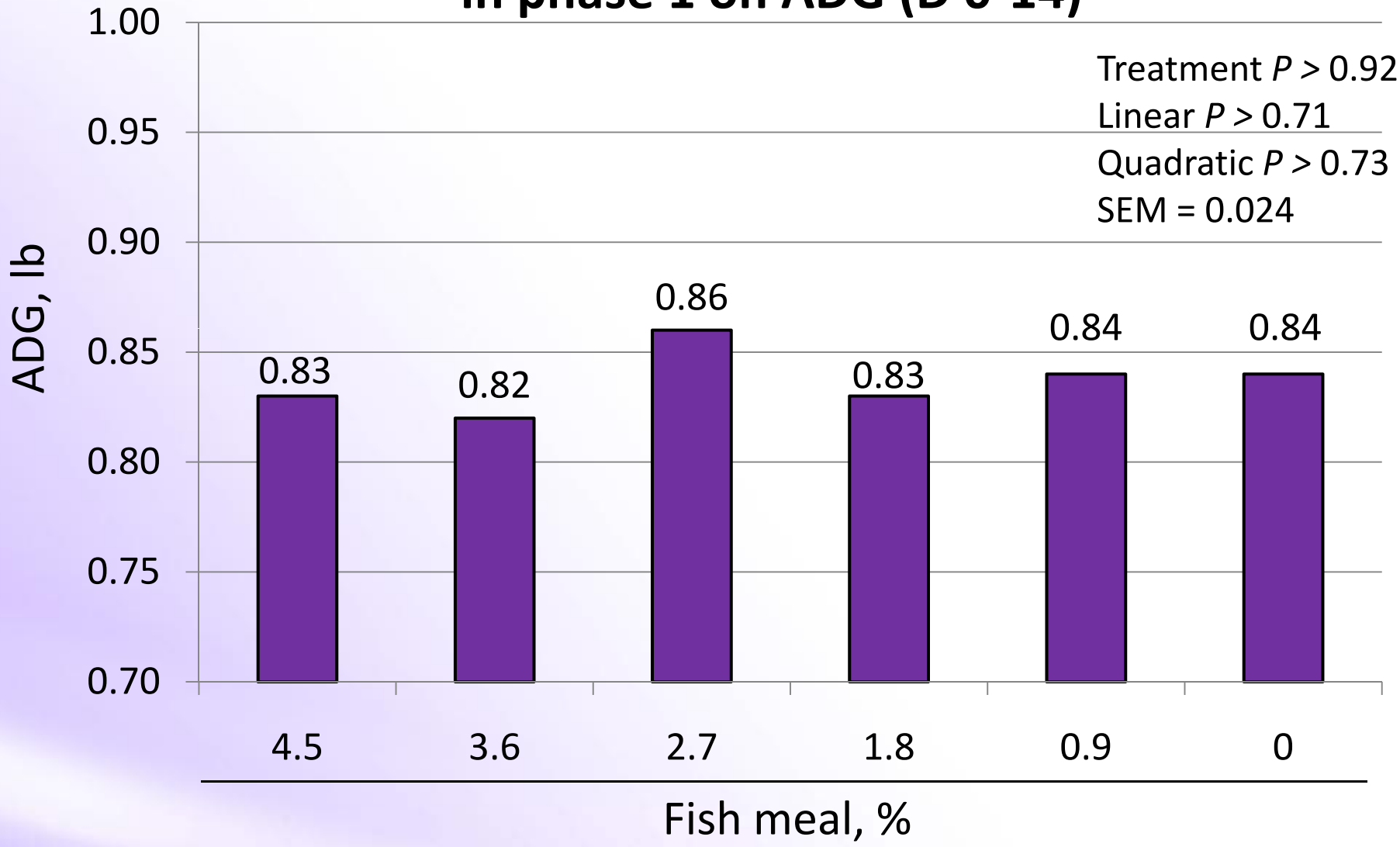
Step 2

- Determine the lysine requirement of 15 to 25 lb pigs at the KSU Swine Teaching & Research Farm
- Determine if we can replace fish meal with crystalline amino acids

Treatment Diets (d 0 to 14)

	Fish meal, %					
Ingredient, %	4.5	3.6	2.7	1.8	0.9	0
L-lysine HCl	0.275	0.327	0.379	0.430	0.482	0.534
DL-methionine	0.124	0.143	0.162	0.182	0.201	0.220
L-threonine	0.136	0.155	0.174	0.192	0.211	0.230
L-tryptophan	0.046	0.051	0.056	0.060	0.065	0.070
L-isoleucine	---	0.020	0.040	0.060	0.080	0.100
L-valine	0.037	0.062	0.086	0.111	0.135	0.160
Glutamine	---	0.160	0.320	0.480	0.640	0.800
Glycine	---	0.160	0.320	0.480	0.640	0.800

Effect of replacing fish meal with crystalline amino acids in phase 1 on ADG (D 0-14)



Nemechek et al., 2010

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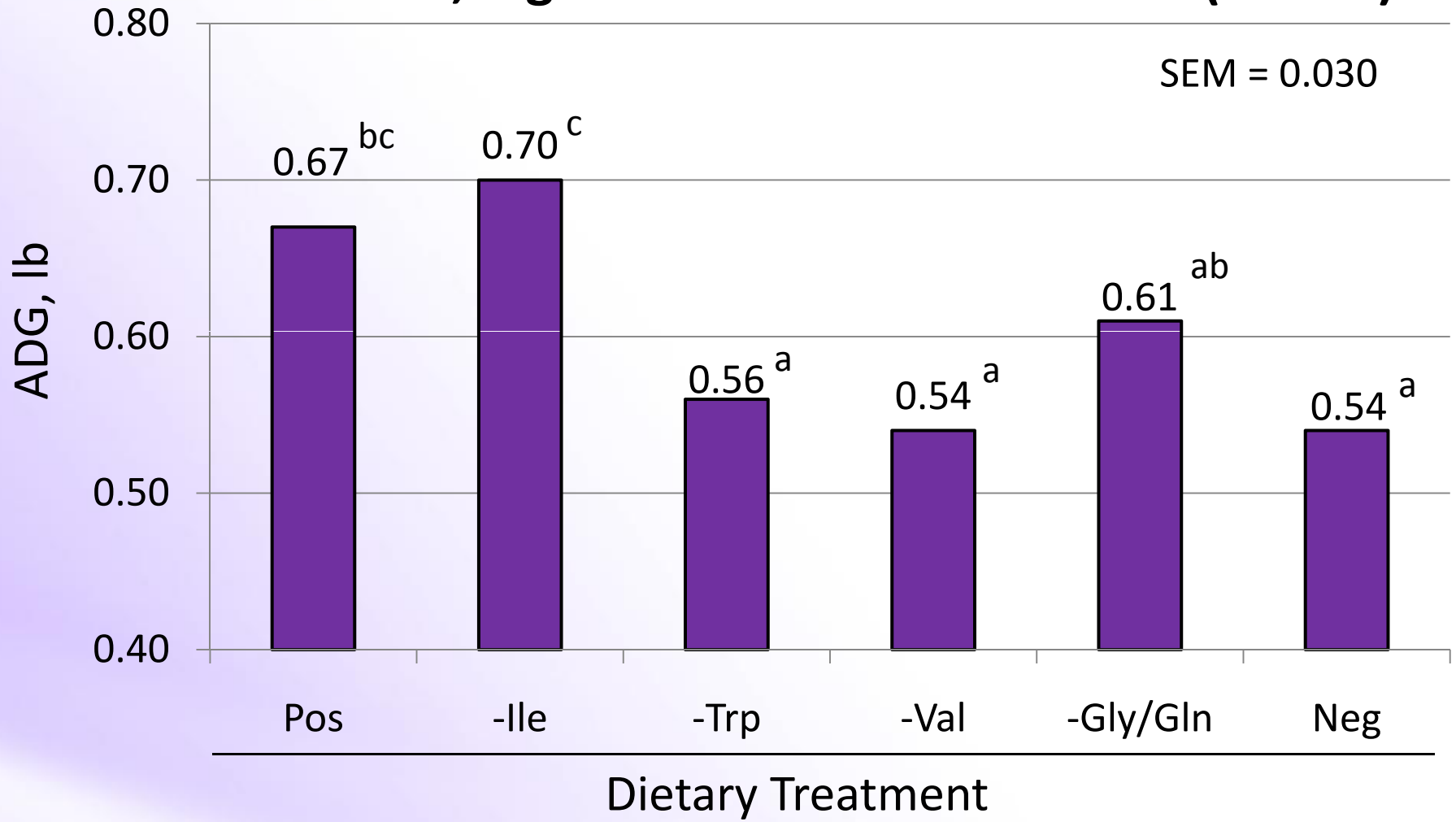
Step 3

- Determine the lysine requirement of 15 to 25 lb pigs at the KSU Swine Teaching & Research Farm
- Determine if we can replace fish meal with crystalline amino acids
- Find the limiting amino acids

Experimental Treatments

- By deleting one amino acid at a time, we can determine which is first limiting, and therefore determine its requirement.
  - Isoleucine – 60 or 52% of lysine
  - Tryptophan – 20 or 15% of lysine
  - Valine – 70 or 57% of lysine
  - Lysine:Protein 6.95 or 7.51

Effect of removing specific crystalline amino acids from a low CP, high AA fortified diet on ADG (D 0-14)



[abc] Within a row, means without a common superscript differ (P < 0.05)

Nemechek et al., 2010

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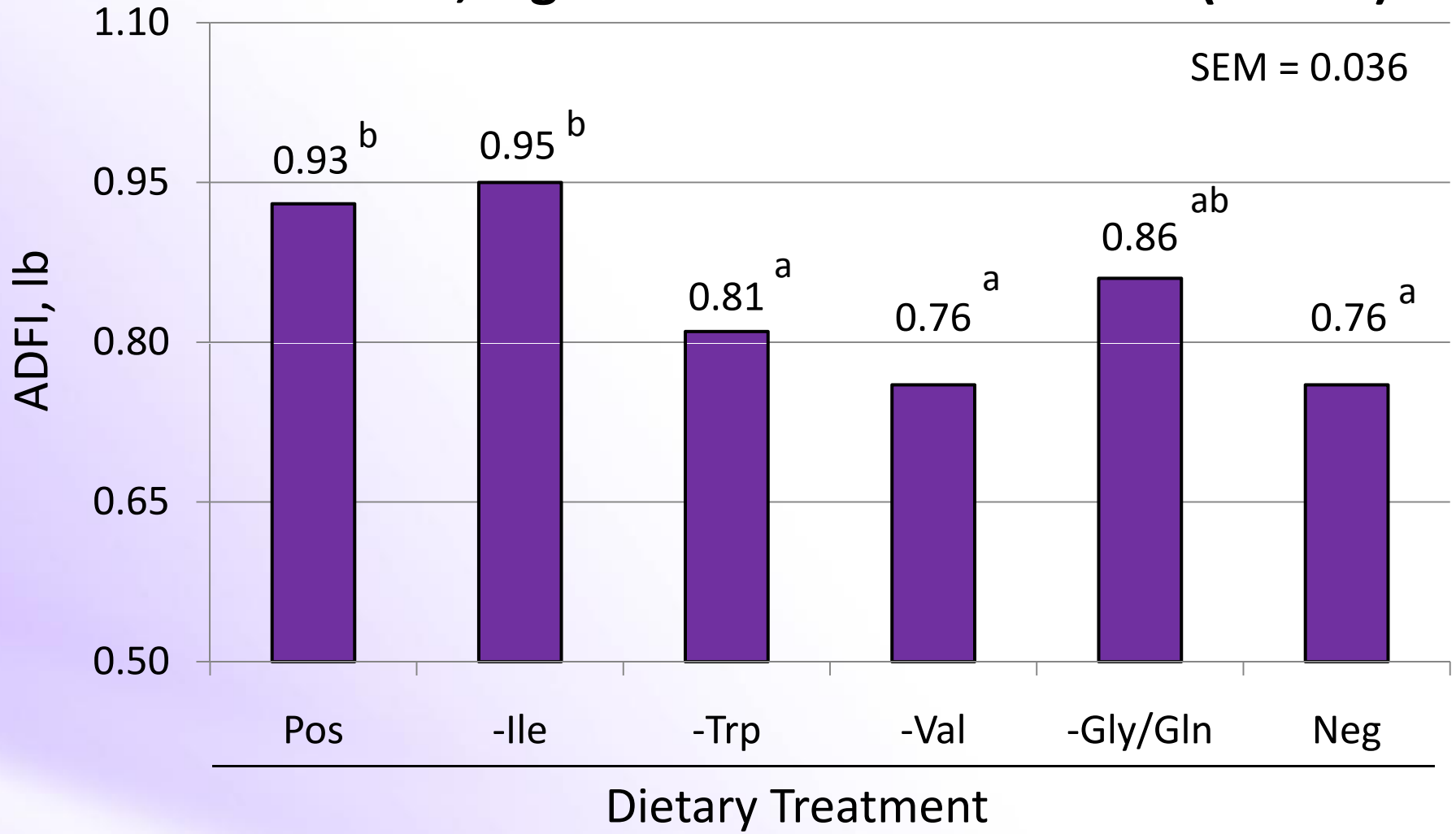
Effect of removing specific crystalline amino acids from a low CP, high AA fortified diet on ADFI(D 0-14)



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Nemechek et al., 2010

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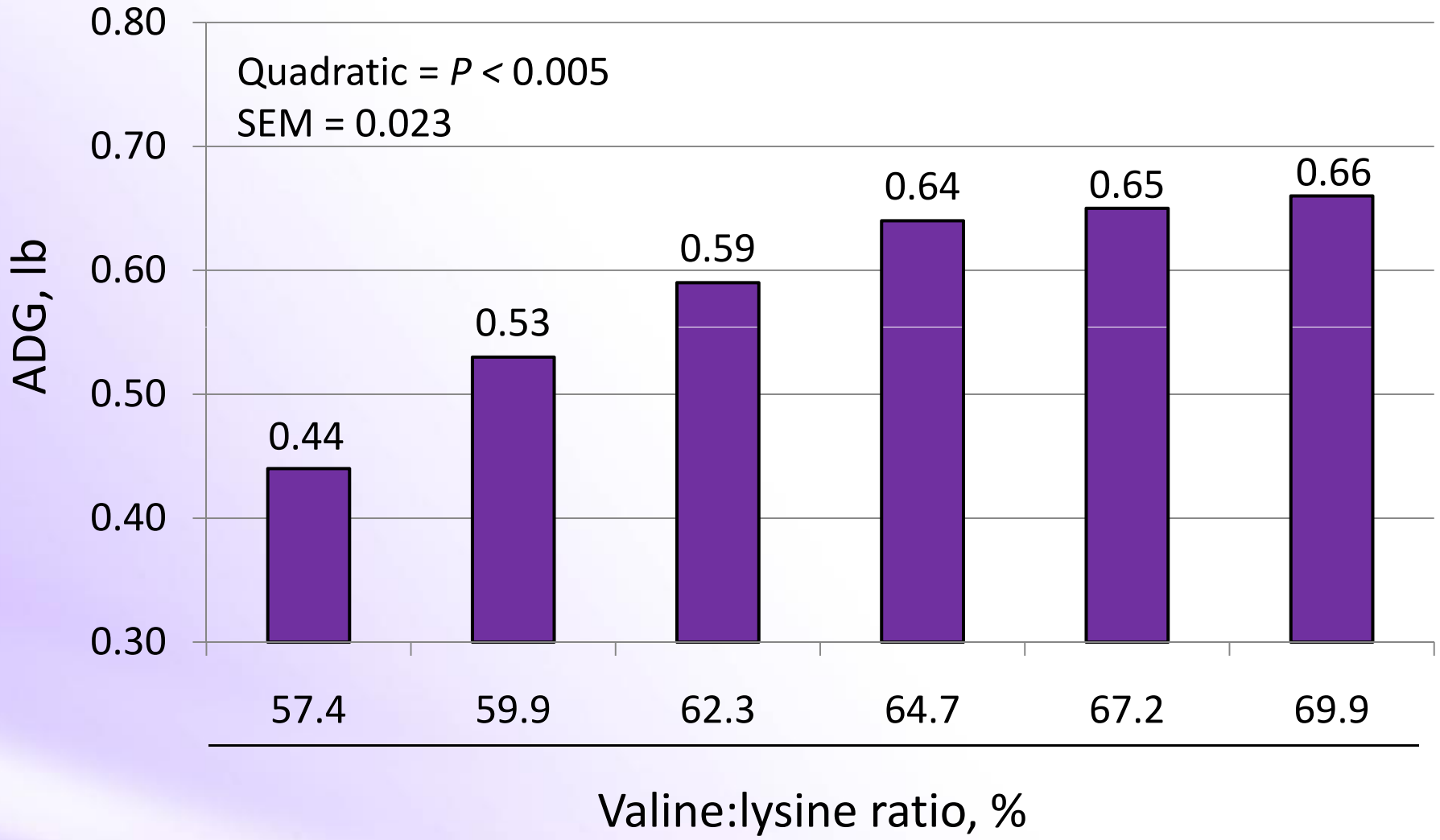
Step 4

- Determine the lysine requirement of 15 to 25 lb pigs at the KSU Swine Teaching & Research Farm
- Determine if we can replace fish meal with crystalline amino acids
- Find the limiting amino acids
- Titrate Valine

Effect of valine:lysine ratio fed in phase 1 on ADG (D 0-14)



Nemechek et al., 2010

Step 5

Effect of replacing commonly used specialty protein sources with crystalline amino acids on growth performance of 15 to 25 lb nursery pigs

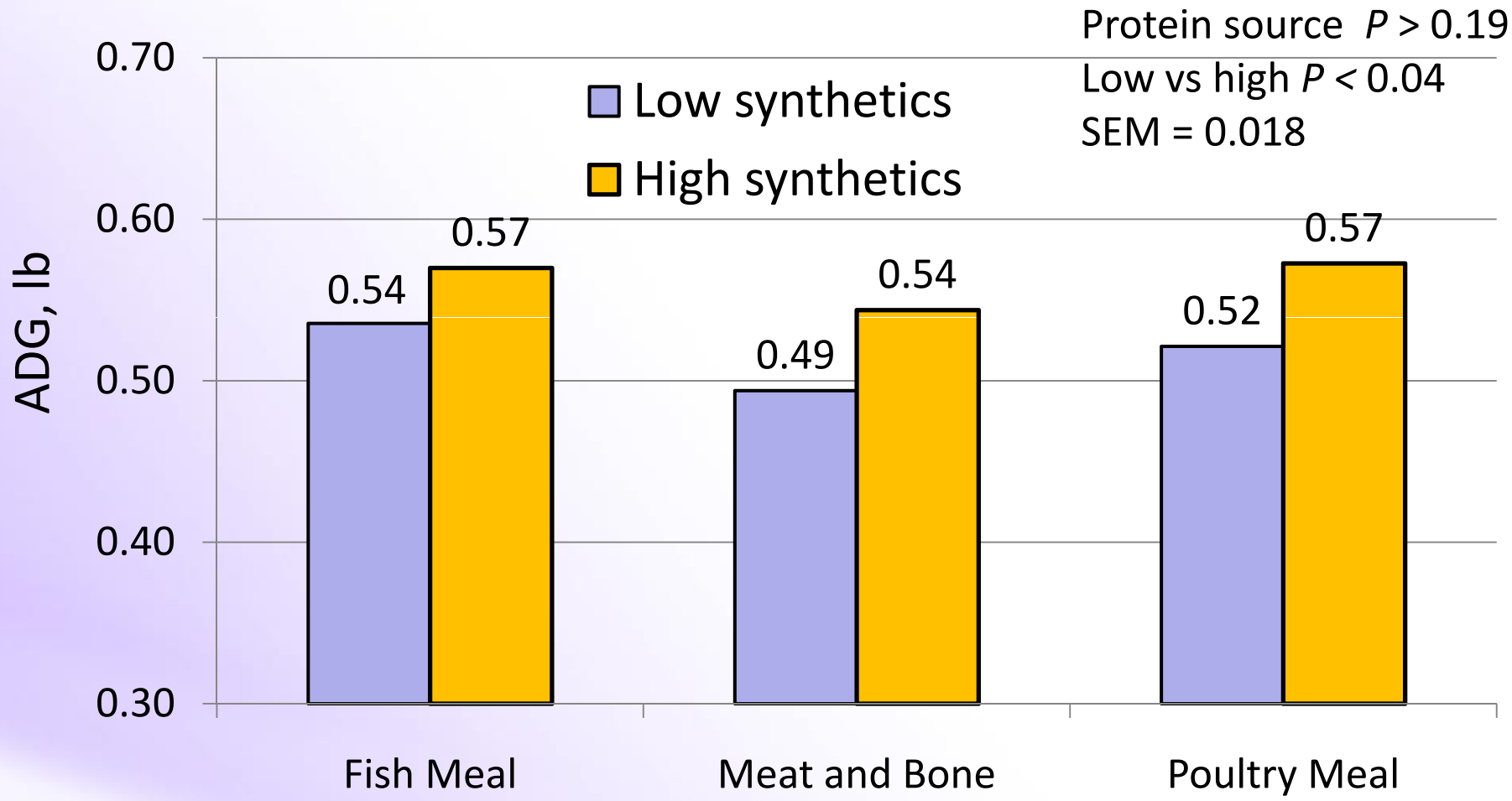
Dietary Treatments

- 6 dietary treatments (2 x 3)
  - Low or high synthetics
  - Fish meal, meat and bone meal, or poultry meal

	1	2	3	4	5	6
AA level	**Low**	**Low**	**Low**	**High**	**High**	**High**
Specialty Protein	**4.5% Fish Meal**	**6% Meat and Bone**	**6% Poultry meal**	**1% Fish Meal**	**1.2% Meat and Bone**	**1% Poultry meal**

Nemechek et al., 2010

Effect of specialty protein source fed in phase 1 on ADG (D 0-14)



Nemechek et al., 2010

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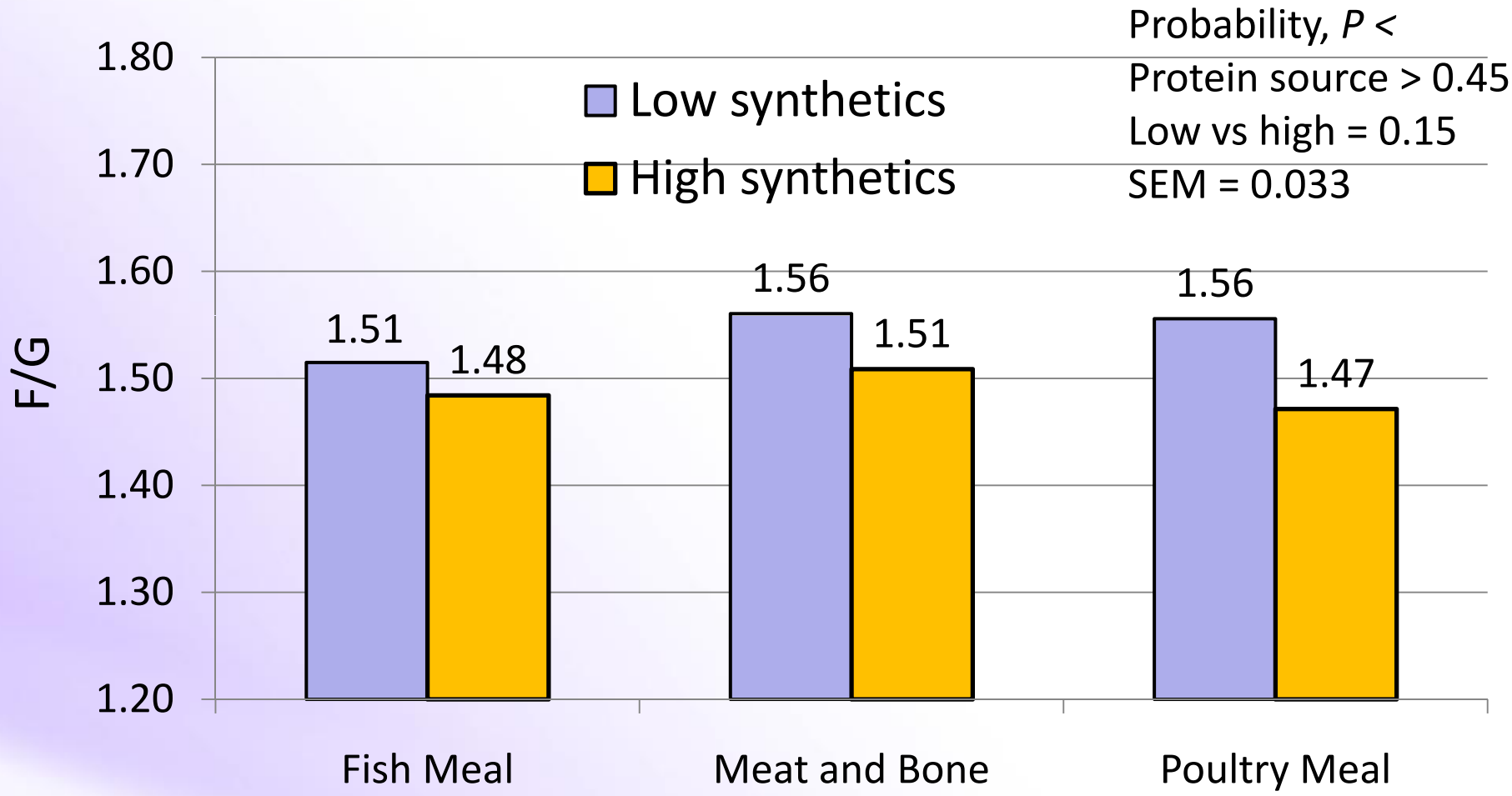
Effect of specialty protein source fed in phase 1 on F/G (D 0-14)



Nemechek et al., 2010

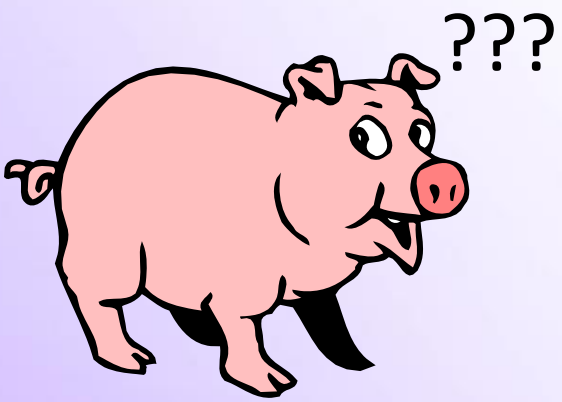
Overall Conclusions from amino acid trials with 15 to 25 lb pigs

- L-tryptophan and L-valine were needed in low-CP, amino acid fortified nursery diets for maximum growth performance.
- SID amino acid requirements
  - Lysine = 1.30%
  - Valine:lysine = 65%
  - Tryptophan:lysine = 16.5%
- A total lysine:total CP ratio no greater than 7.35% should be fed for optimal growth performance.
- Commonly used specialty protein sources, such as fish meal, meat and bone meal, and poultry meal, can be replaced with crystalline amino acids in phase 2 nursery diets.

Fish Meal Replacements

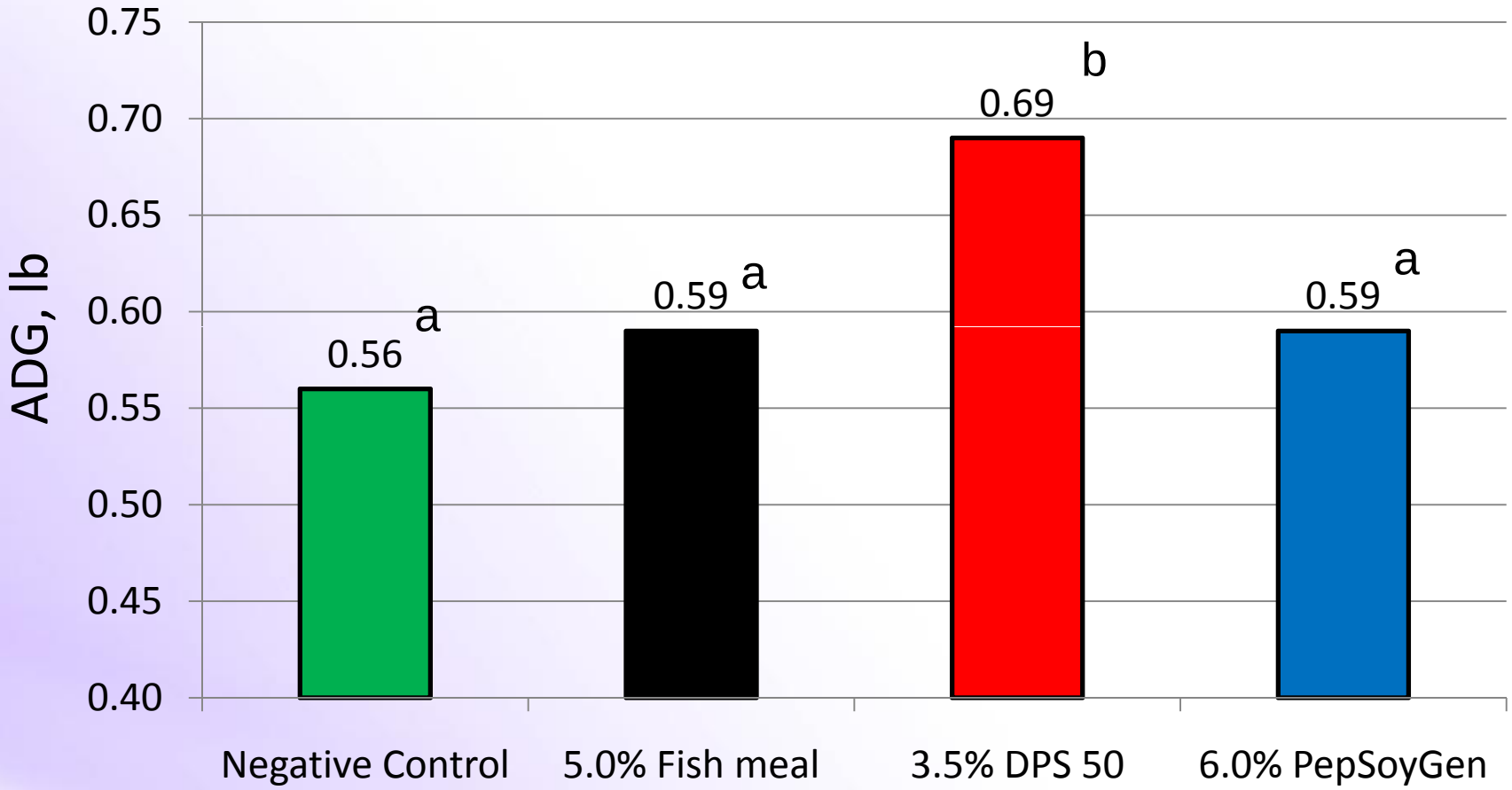
- Crystalline Amino Acids
- Spray-dried blood meal
- Further processed soy proteins
  - Fermented soy products
- Intestinal peptide products
  - Byproducts of heparin production
    - DPS 50
    - PEP2+, PEP 50 and PEP-NS

Intestinal peptide products



- Porcine intestinal mucosa is derived from small intestines that are collected at pork packing plants
- The mucosa linings from the intestines are removed and then hydrolyzed.
- Following hydrolysis, resin beads are used to extract heparin for use in the human health industry.

Effects of fish meal, DPS 50, and Pepsoygen on Phase 2 average daily gain – 15 to 25 lb



Means with different superscripts differ P < 0.05

Jones et al., 2009

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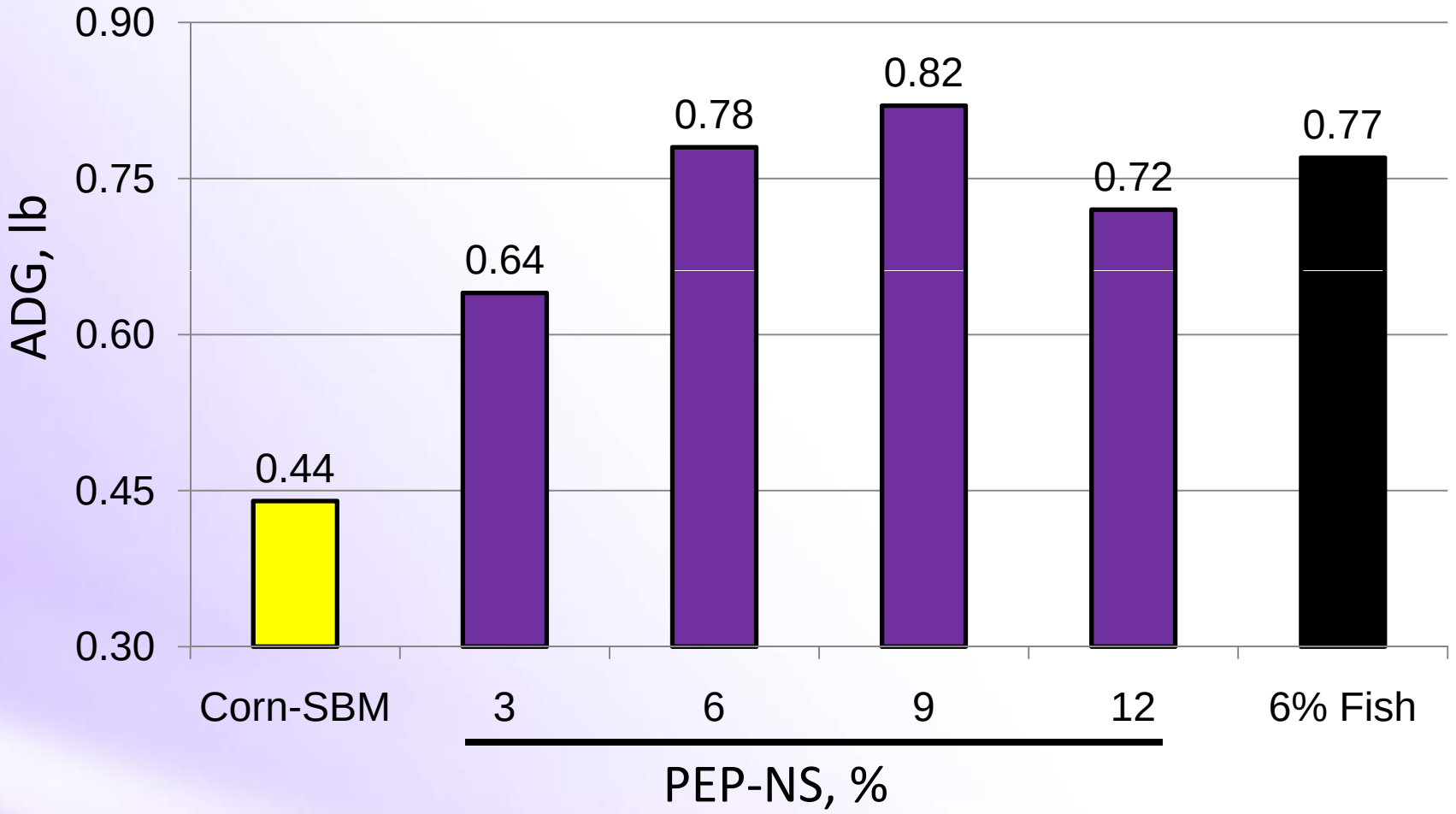
Effects of increasing PEP-NS on phase 2 Average Daily Gain – 15 to 25 lb



Myers et al., 2010

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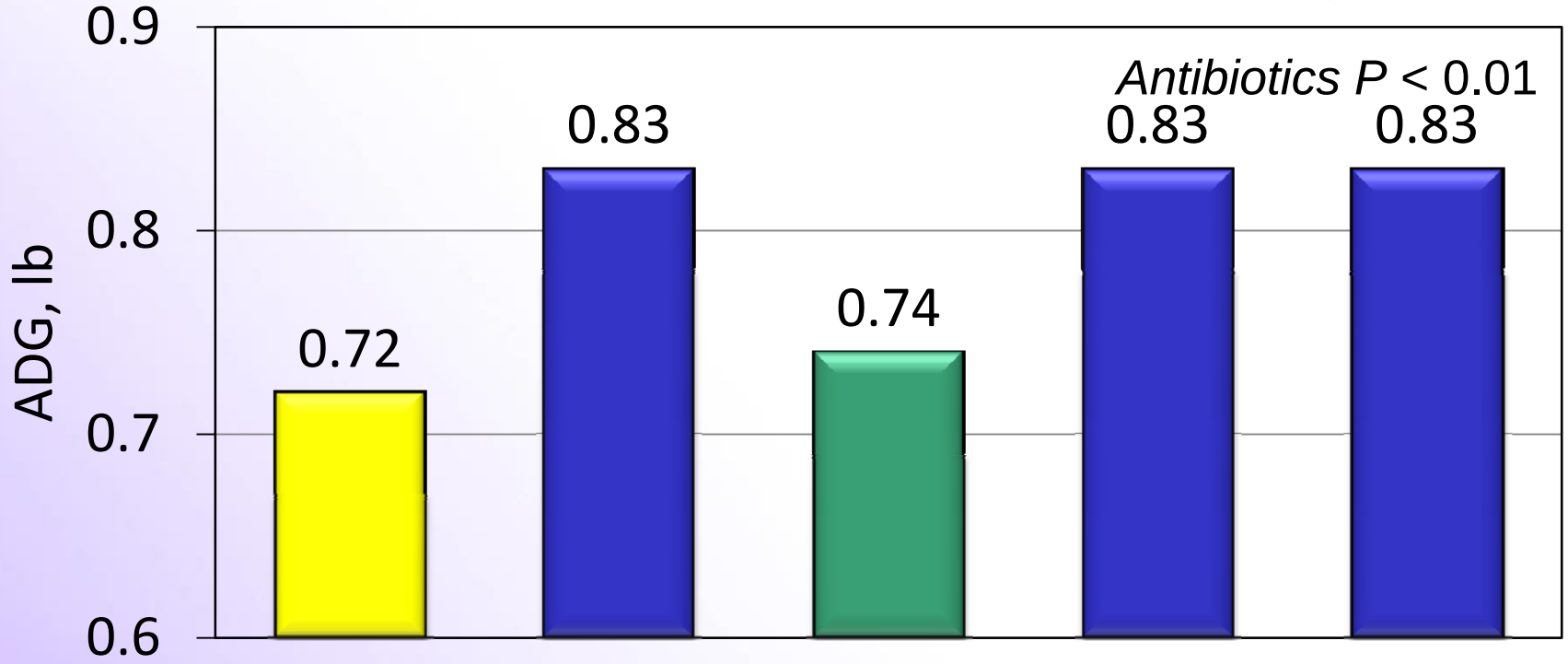
Summary – Fish meal Replacements

- Intestinal peptide proteins appear to be effective replacements for fish meal
  - ✓DPS 50 - 3.5% of the diet
  - ✓PEP products - 6 – 9 % of the diet

Nursery management

- Antibiotics in health challenged pigs
- Waterer type
- Mat feeding
- Vomitoxin

Influence of dietary antibiotics on ADG (d 0 to 41) in PRRS and myoplasma positive pigs



d 0 to 10	**No med**	**Den/CTC**	**Pulmotil**	**Den 200**	**Den/CTC**
d 10 to 20	**No med**	**Den/CTC**	**Pulmotil**	**Den/CTC**	**Den 200**
d 20 to 41	**No med**	**Den/CTC**	**Pulmotil**	**Den/CTC**	**Den/CTC**

Sotak et al., 2010

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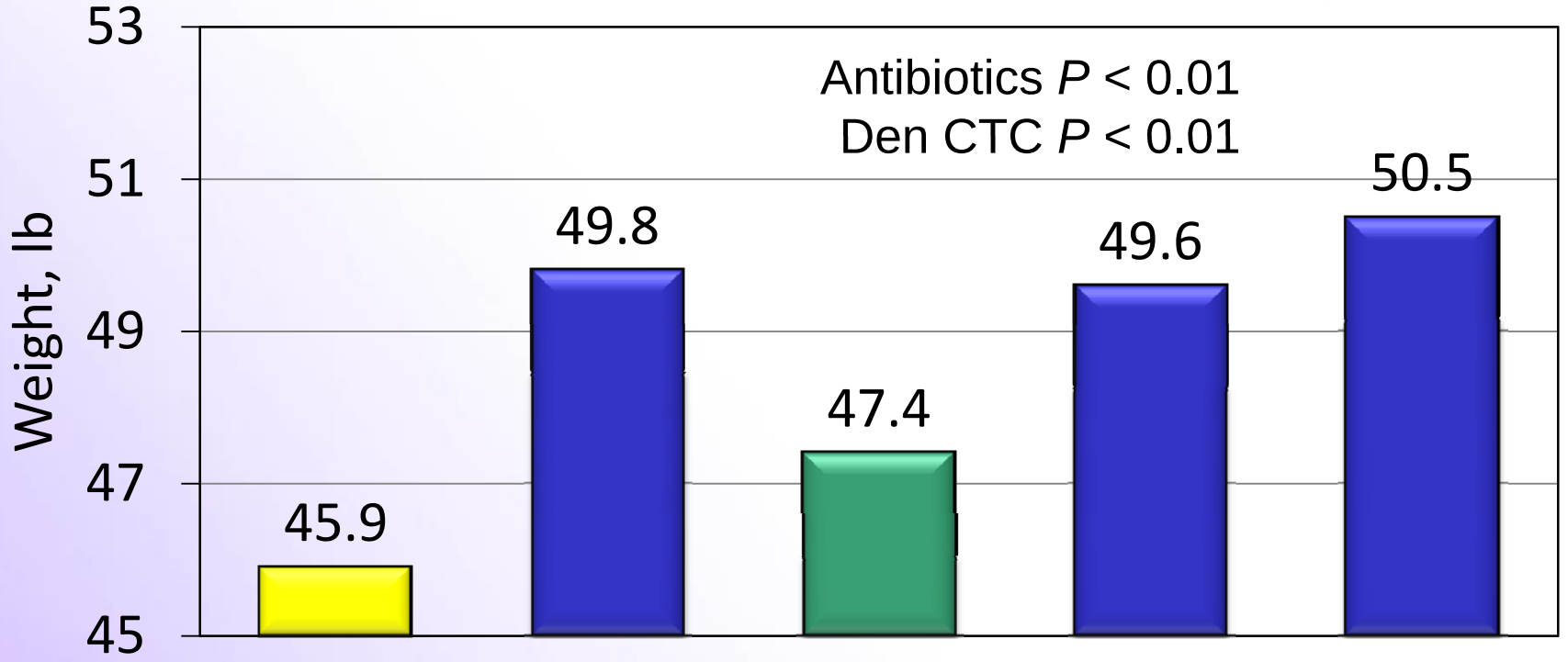
Influence of dietary antibiotics on final wt (d 41) in PRRS and myoplasma positive pigs



d 0 to 10	**No med**	**Den/CTC**	**Pulmotil**	**Den 200**	**Den/CTC**
d 10 to 20	**No med**	**Den/CTC**	**Pulmotil**	**Den/CTC**	**Den 200**
d 20 to 41	**No med**	**Den/CTC**	**Pulmotil**	**Den/CTC**	**Den/CTC**

Sotak et al., 2010

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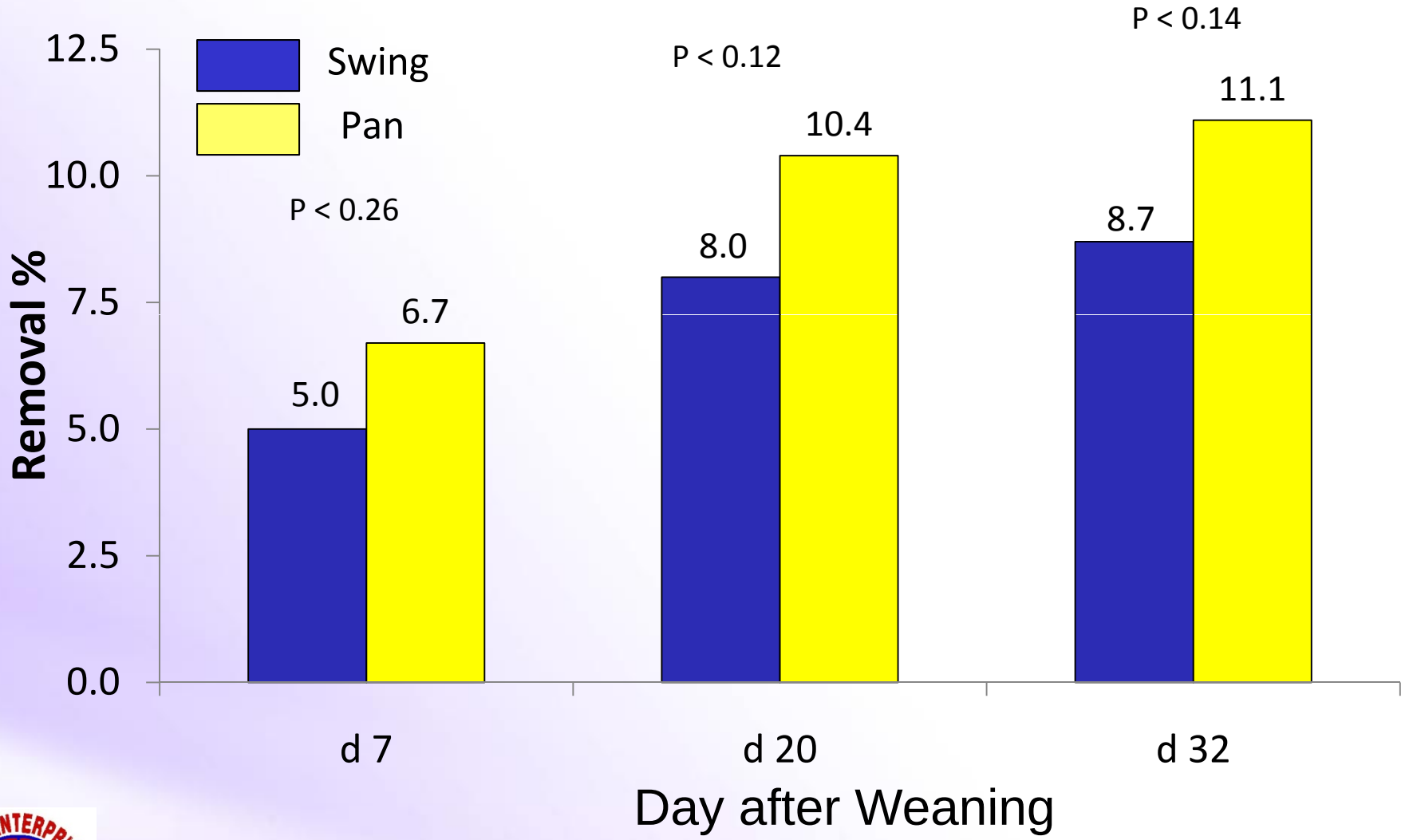
Antibiotic summary

- Adding antibiotics to the nursery diet improved pig performance and economic return
  - 3.9 lb increased weight gain in this trial
    - Phase 1 = No difference
    - Phase 2 = 1.1 lb in 10 days (0.11 lb/d)
    - Phase 3 = 2.8 lb in 21 days (0.13 lb/d)

WF Mat Feeding and Waterer Studies

Effect of Waterer Type on Cumulative Removals



Potter et al., 2010

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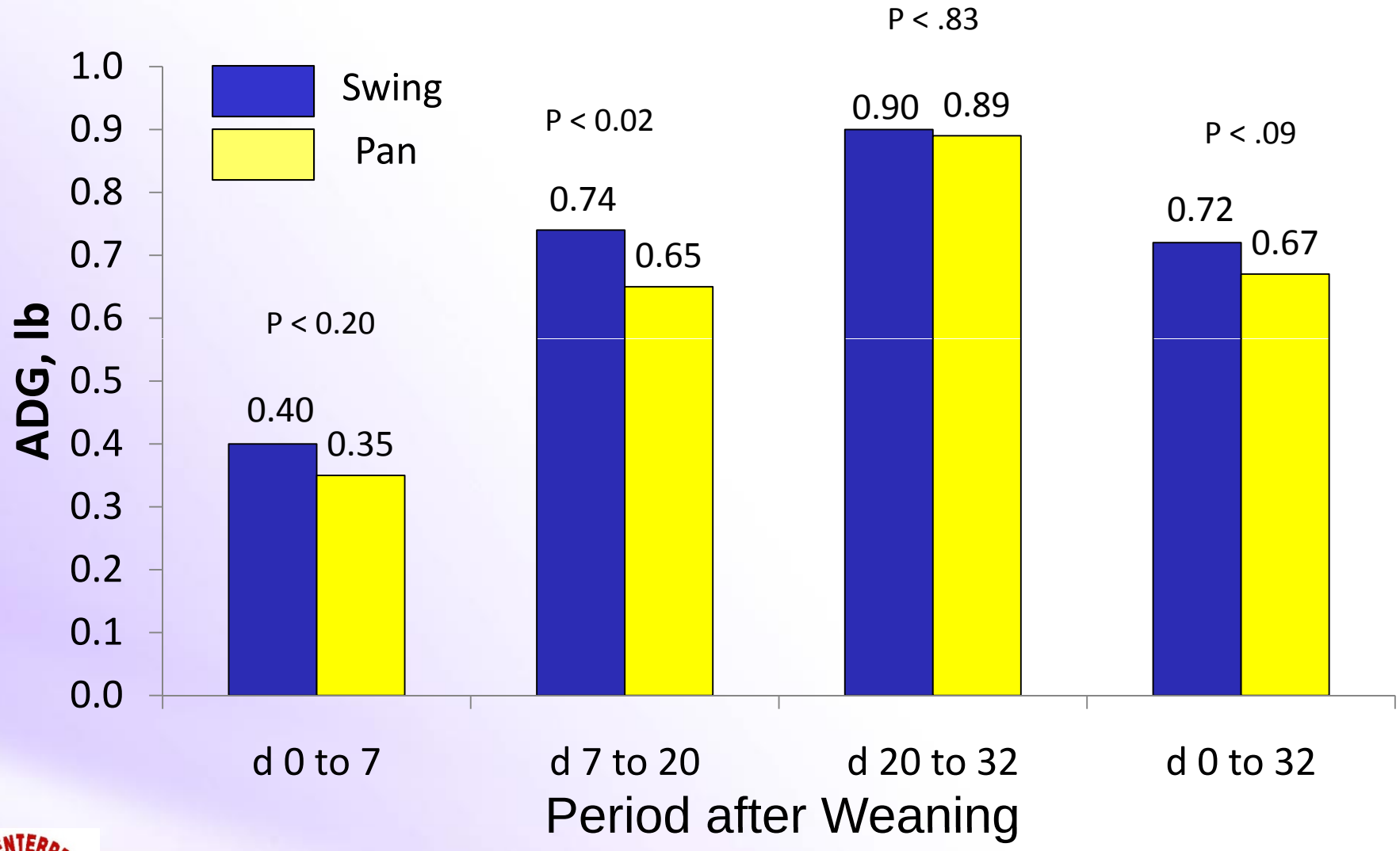
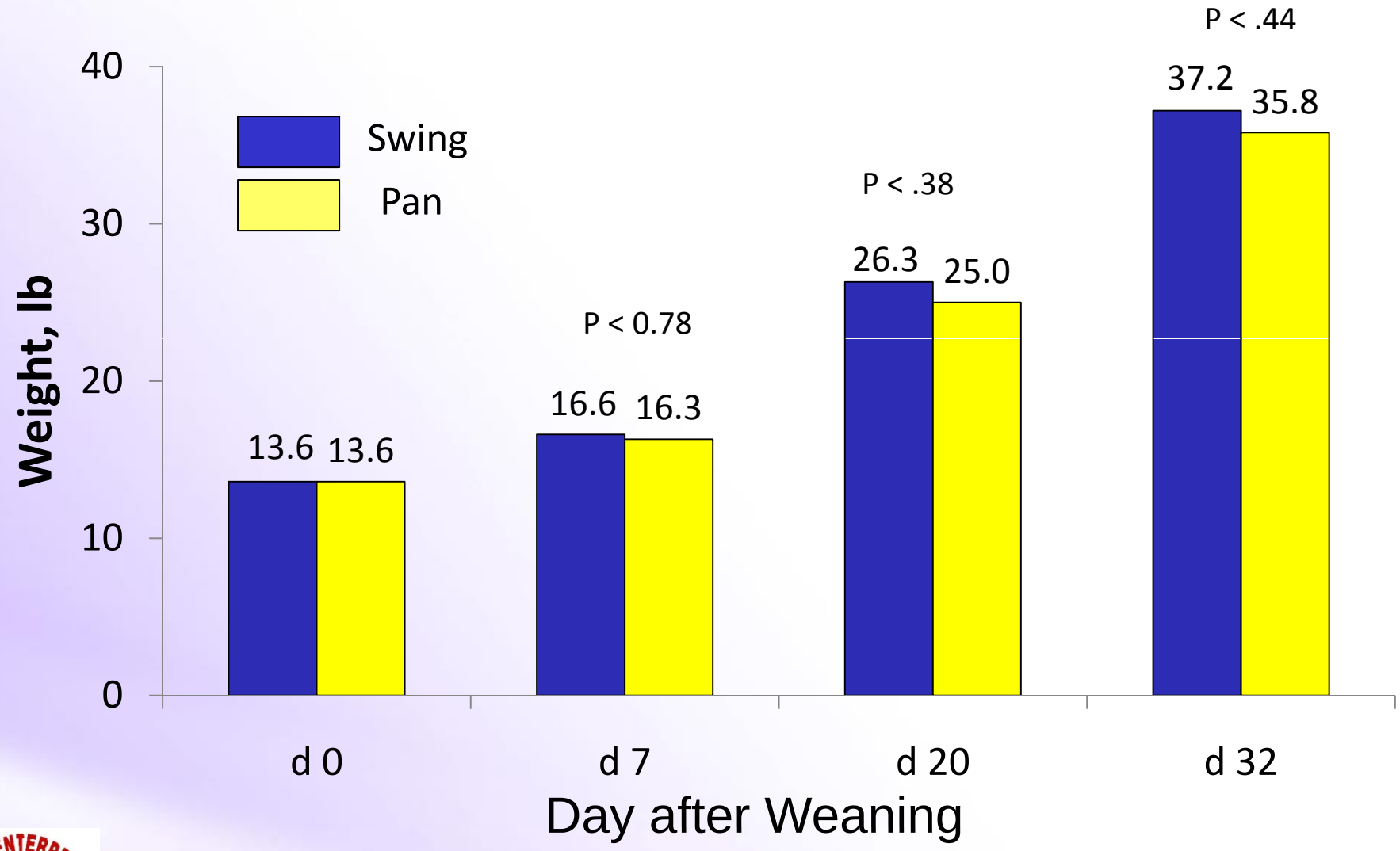
Effect of Waterer Type on ADG



Potter et al., 2010

Effect of Waterer Type on Average Pig Weight



Potter et al., 2010

For pigs provided water from swinging waterers:

- Cumulative removal rate tended to be lower
- Growth rate and F/G were better

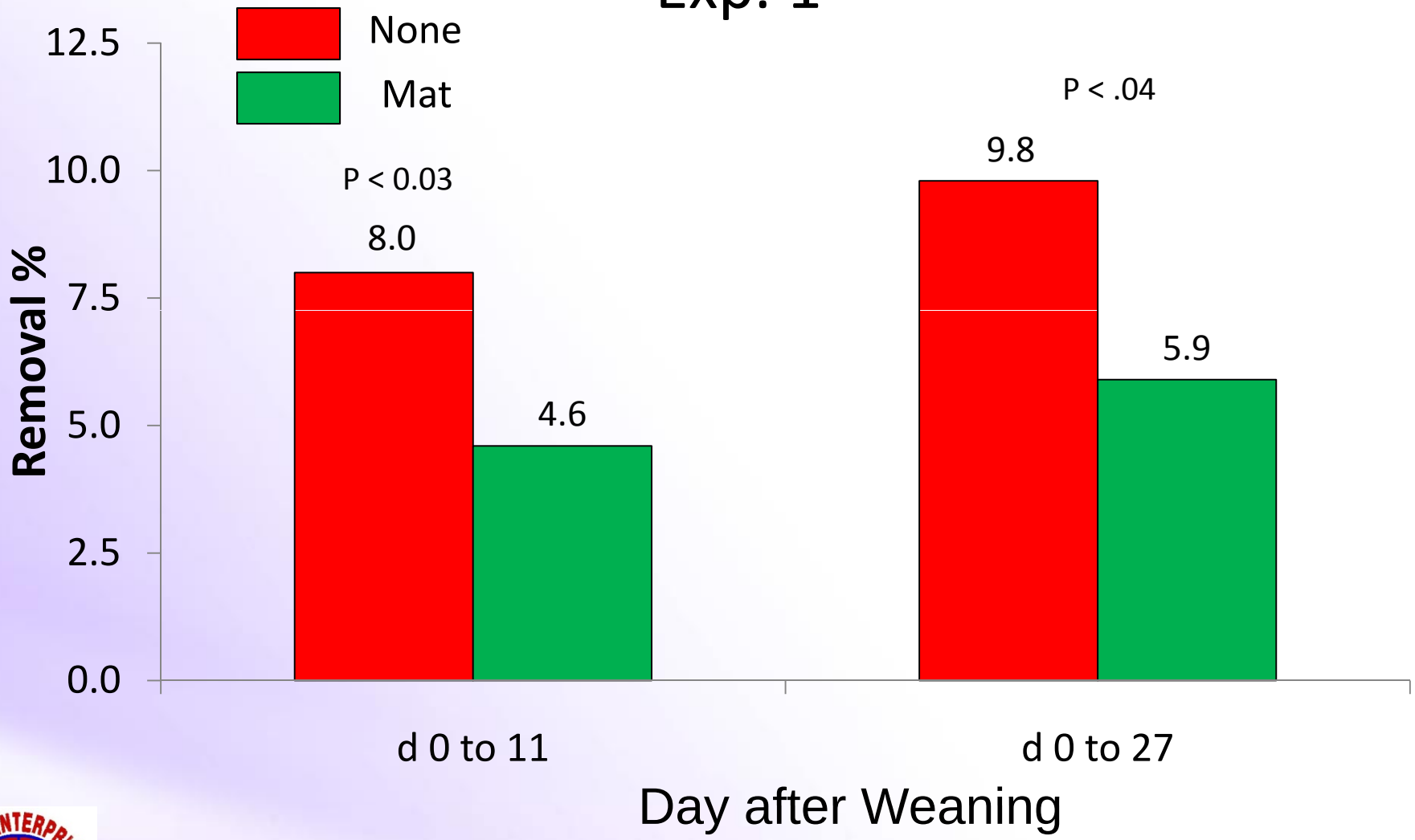
- No evidence that pigs performed better when provided water with the pan waterer.

Waterer or Toilet Bowl????

Effect of Mat Feeding – Exp 1

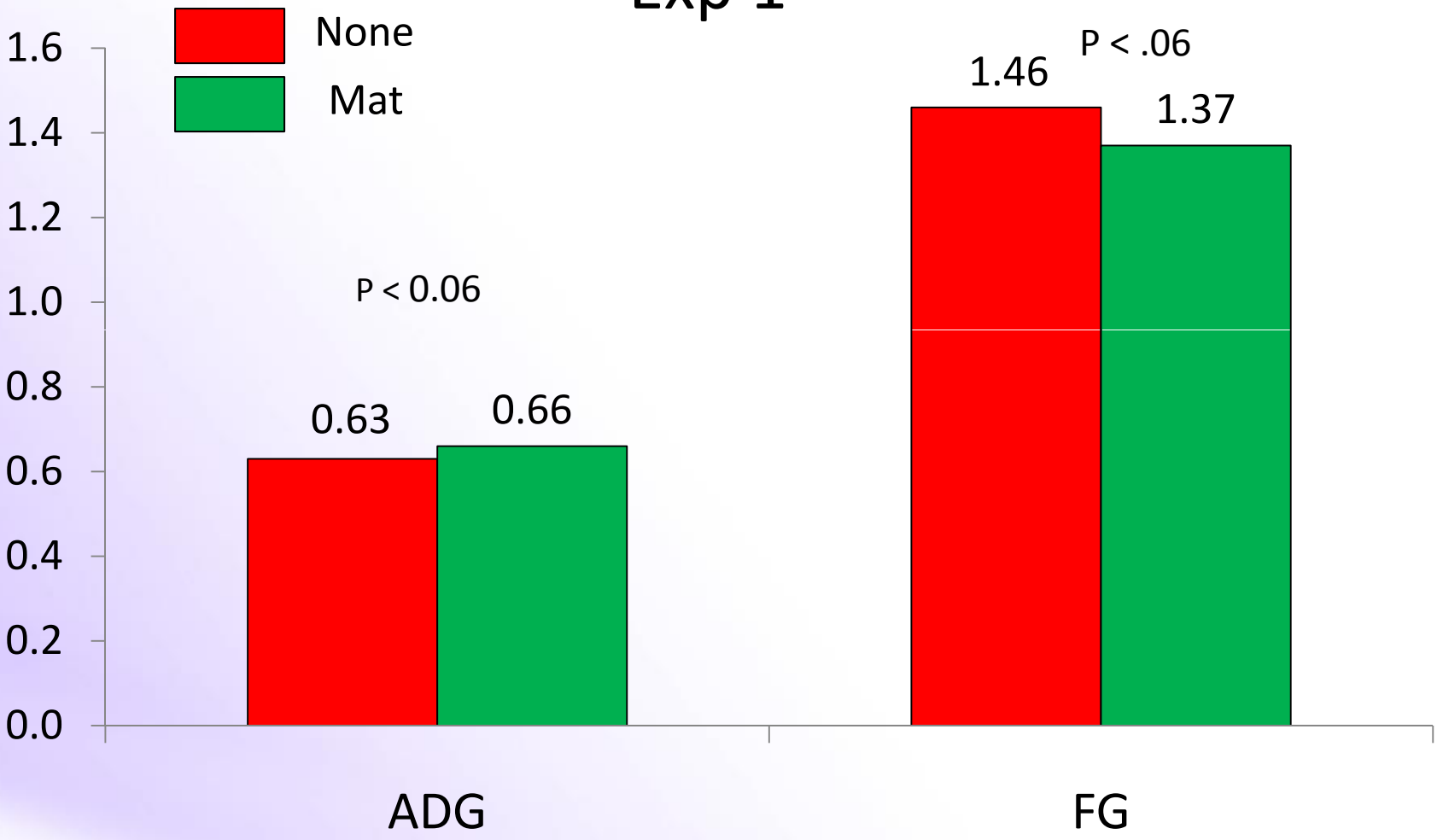
- Commercial WF Fully Slatted finisher barn
- Conventional 25 pig pens with 3-hole feeder
  - Initially stocked with 58 pigs per pen
- All pens provided a biodegradable mat with a supplemental heat source
- Treatments
  - None
  - Mat-fed
    - 1.1 lb of pellets on the mat per feeding
    - 3 x per day for the first 6 d after weaning

Effect of Mat Feeding on Cumulative Removals Exp. 1



Potter et al., 2010

Effect of Mat Feeding on ADG and F/G
Exp 1



Day 0 to 27 after Weaning

Potter et al., 2010

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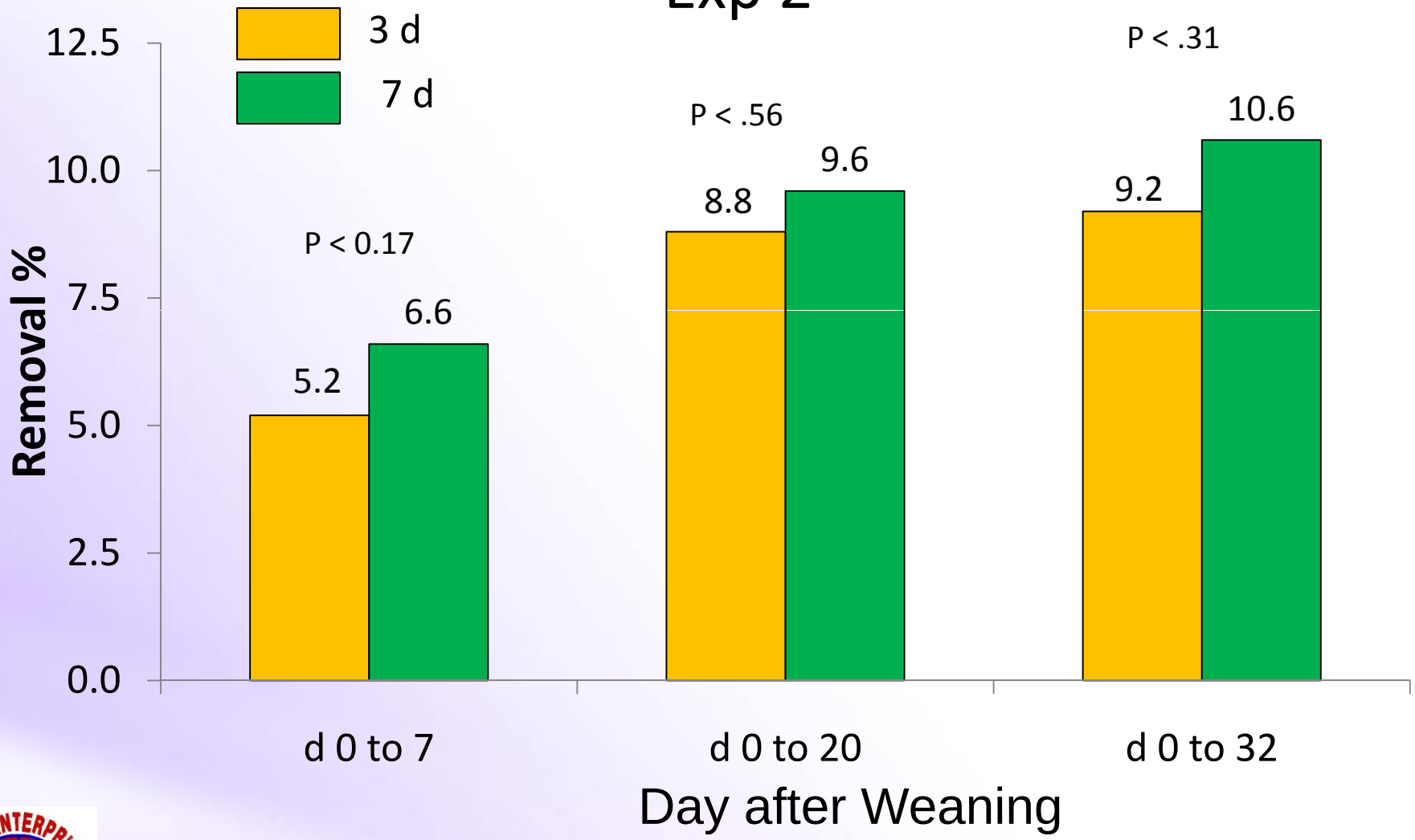
Effect of Mat Feeding – Exp 2

- Same Facility as Exp 1
  - Initially stocked with 52 pigs per pen
- All pens provided a biodegradable mat with a supplemental heat source
- Treatments
  - 3 d or 7 d after weaning mat feeding
    - 1.6 lb of pellets on the mat per feeding
    - 3 x per day

Effect of Mat Feeding on Cumulative Removals Exp 2



Potter et al., 2010

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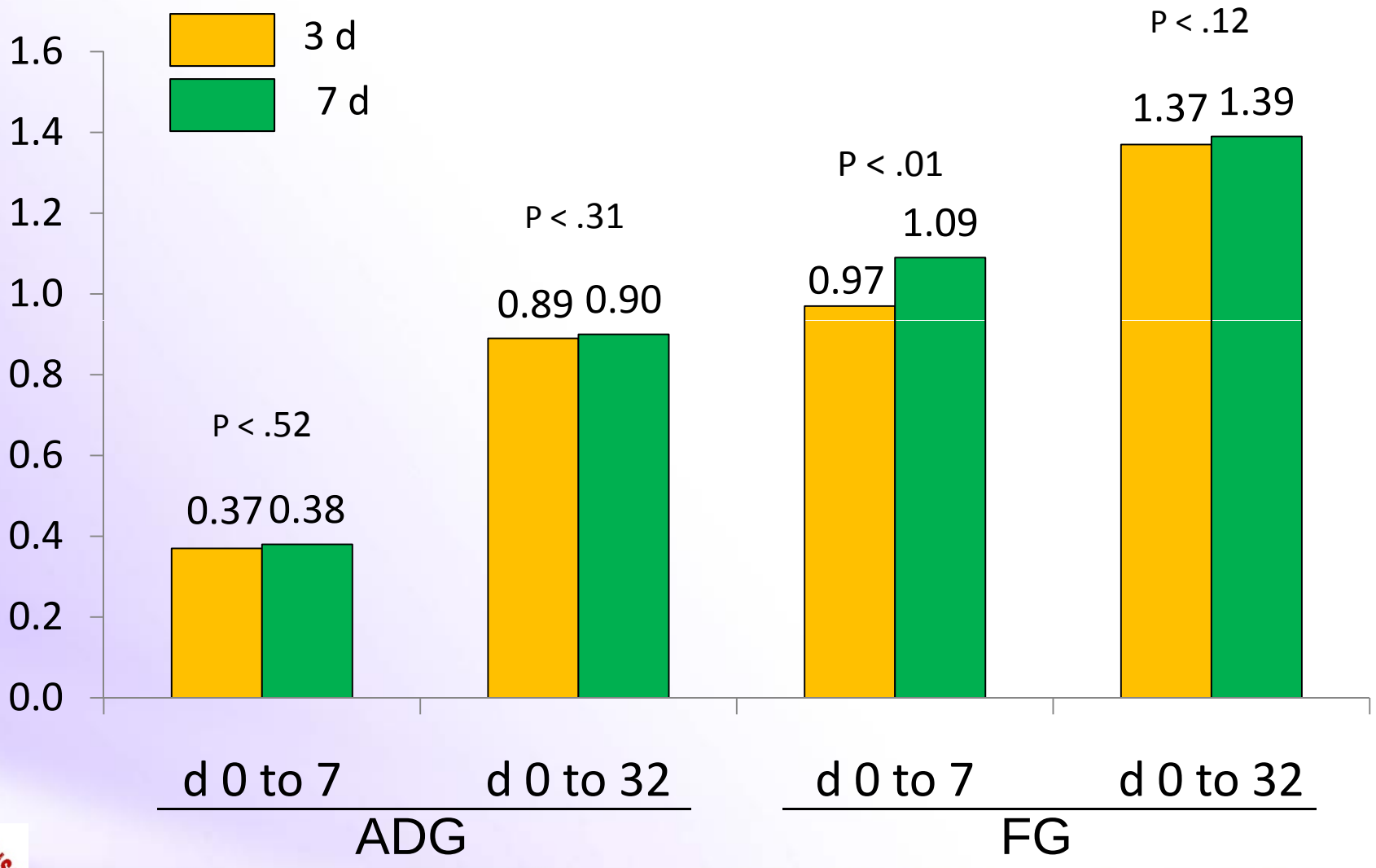
Effect of Mat Feeding on ADG and FG Exp 2

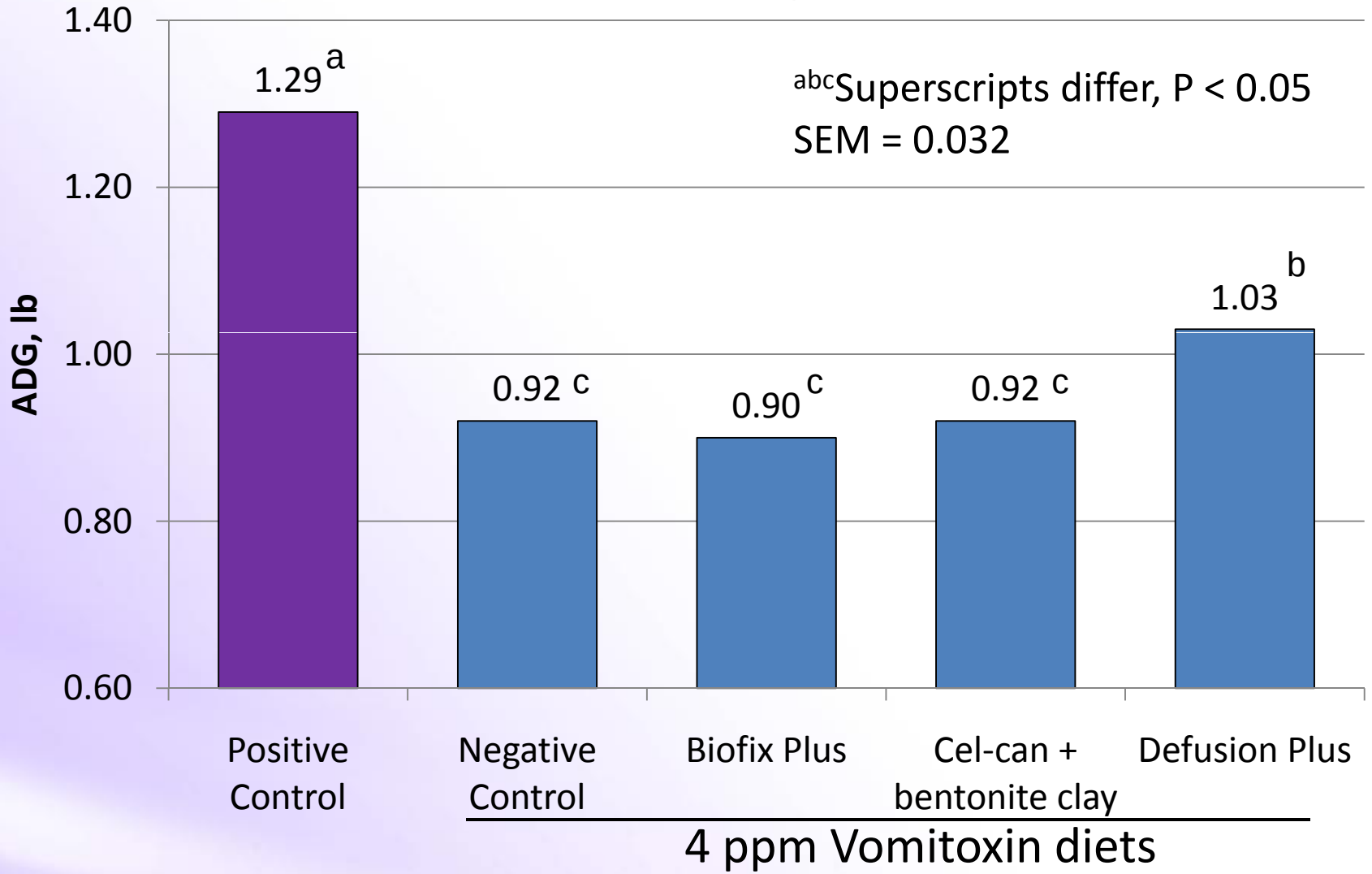


Potter et al., 2010

Mat Feeding Conclusion

- Mat-feeding reduced removal percentage in Exp 1
- Extended duration did not improve removal percentage but numerically increased F/G in Exp 2
- Limit mat feeding to the first few days after weaning while pigs are learning feeding behavior

Vomitoxin level and commercial products on nursery pig ADG



Barnes et al., 2010

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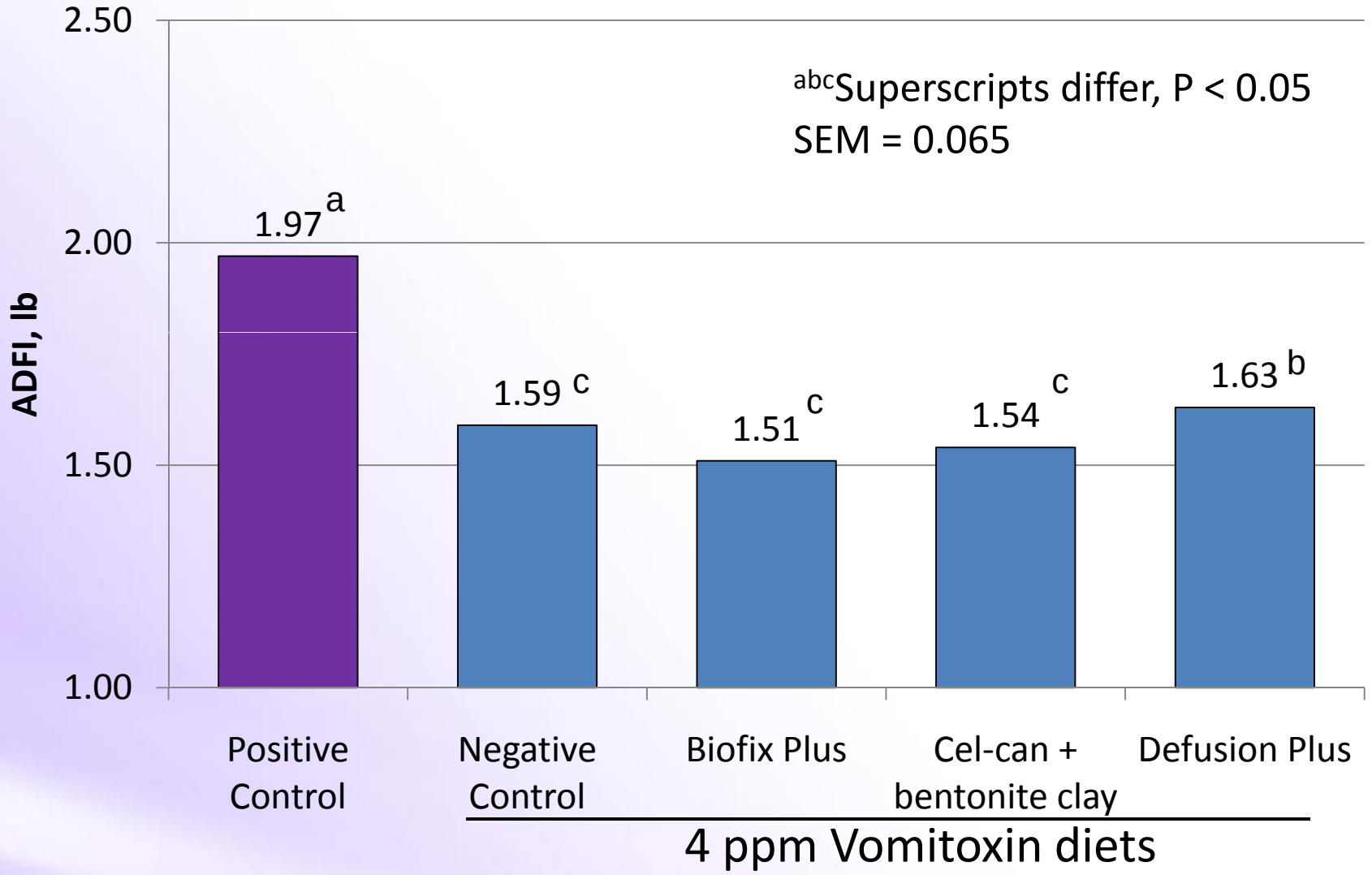
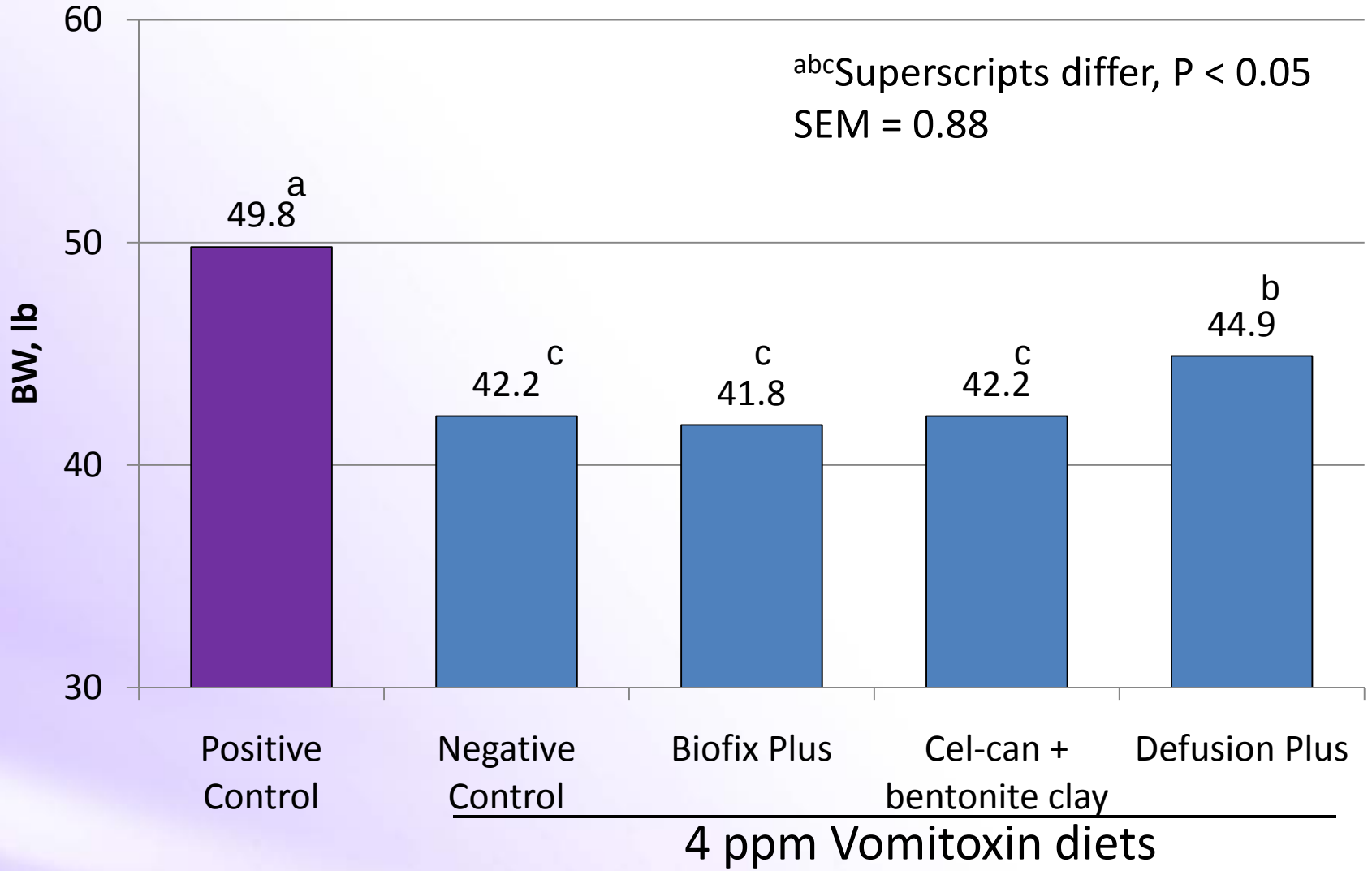
Vomitoxin level and commercial products on nursery pig ADFI



Barnes et al., 2010

Vomitoxin level and commercial products on nursery pig Final BW



Barnes et al., 2010

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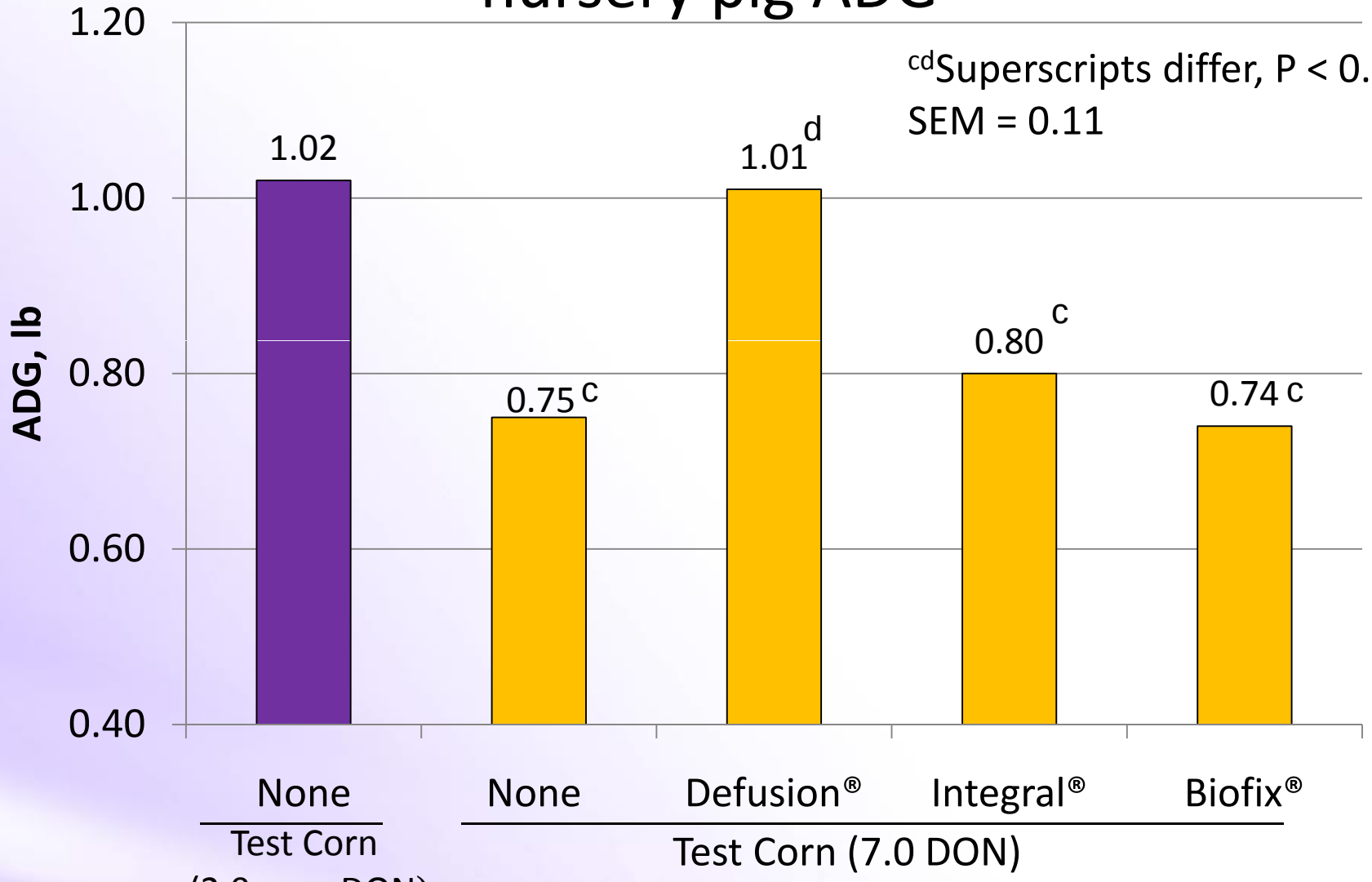
Vomitoxin level and commercial products on nursery pig ADG



Mahan et al., 2010

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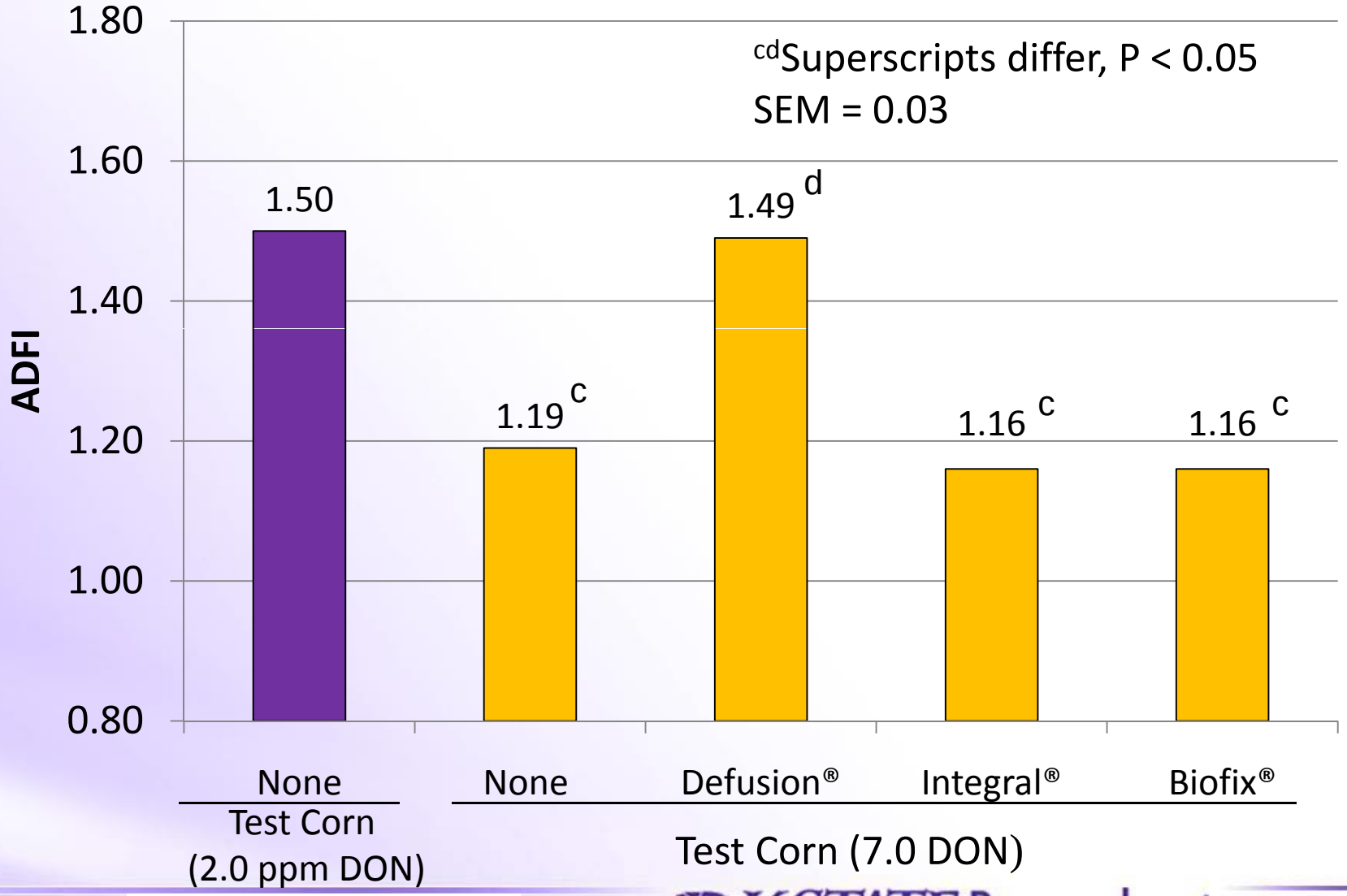
Vomitoxin level and commercial products on nursery pig ADFI



Mahan et al., 2010

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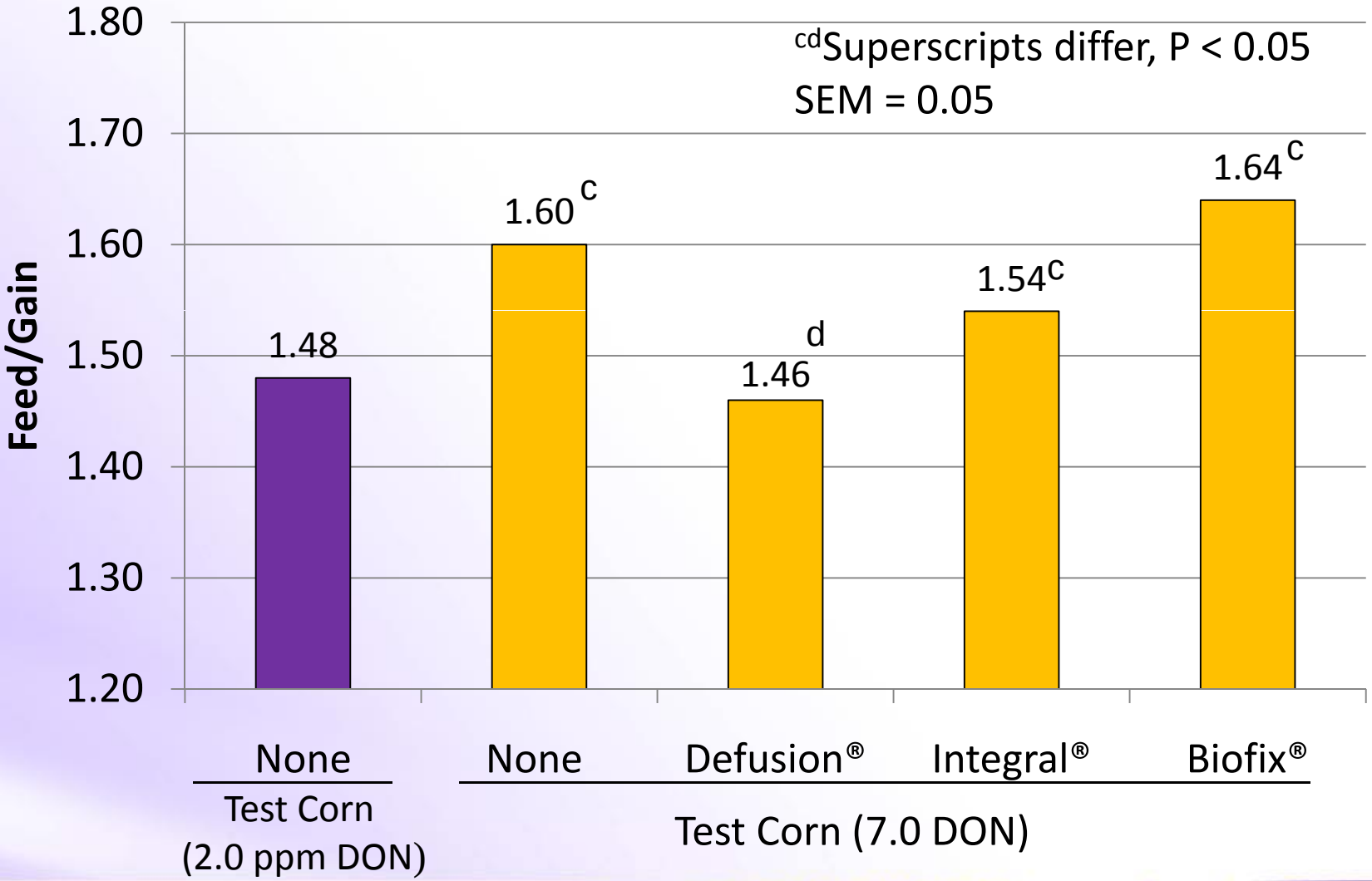
Vomitoxin level and commercial products on nursery pig F/G



Mahan et al., 2010

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Vomitoxin Summary and Future

- Vomitoxin in the 2009 corn crop and DDGS did impact pig performance
- 2010 corn – very little incidence of vomitoxin
- Defusion was the only commercial product to help mitigate the effects
- Current research:
  - Pelleting or heat treatment to reduce Vomitoxin levels
  - Sodium Metabisulfite to reduce diet vomitoxin levels

Nursery summary

- Fish meal can be replaced with amino acids or peptide products in diet for 15 to 25 lb pigs.
- Swinging waterers > pan waterer for starting pigs
- Mat feed for only first few days after weaning
- Mycotoxin binders only work on specific mycotoxins
  - Good quality corn = no binder needed

DDGS Value Calculator with no performance change

Corn, $/bu	$ 5.30
SBM, $/ton	$ 330.00
Monocal, $/ton	$ 550.00
Limestone, $/ton	$ 40.00
Lysine HCl, $/lb	$ 1.05
DDGS, $/ton	$ 180.00

Kansas

	DDGS, %		
	10%	**20%**	**30%**
Change in diet cost, $/ton	**-$5.81**	**-$10.48**	**-$13.97**
Approximate savings, $/pig	**$1.74**	**$3.14**	**$4.19**
Breakeven price, $/ton	**$238.13**	**$232.39**	**$226.58**

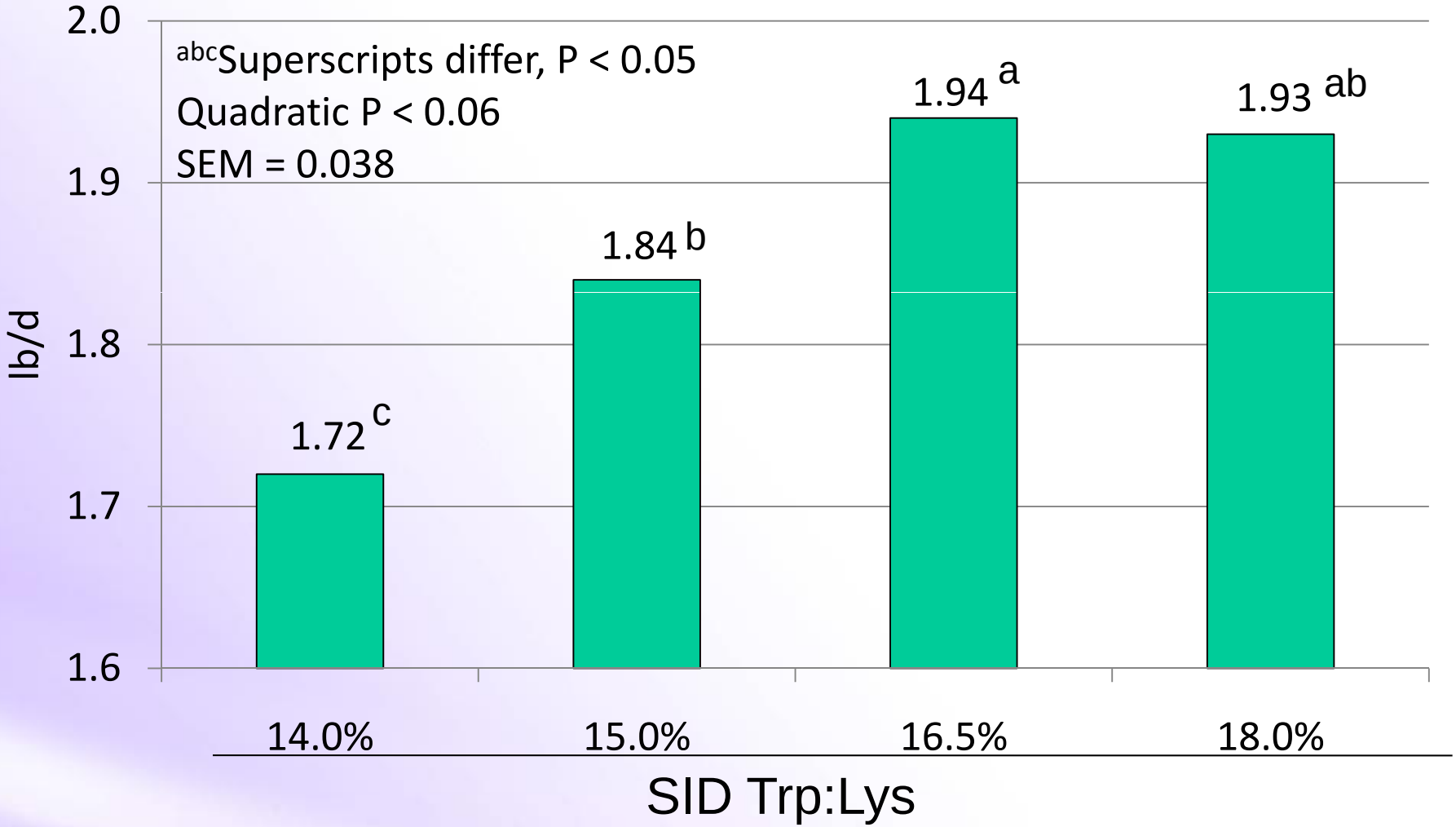
DDGS Value Calculator with no performance change

Corn, $/bu	$ 5.20
SBM, $/ton	$ 330.00
Monocal, $/ton	$ 550.00
Limestone, $/ton	$ 40.00
Lysine HCl, $/lb	$ 1.05
DDGS, $/ton	$ 145.00

Iowa/Minnesota

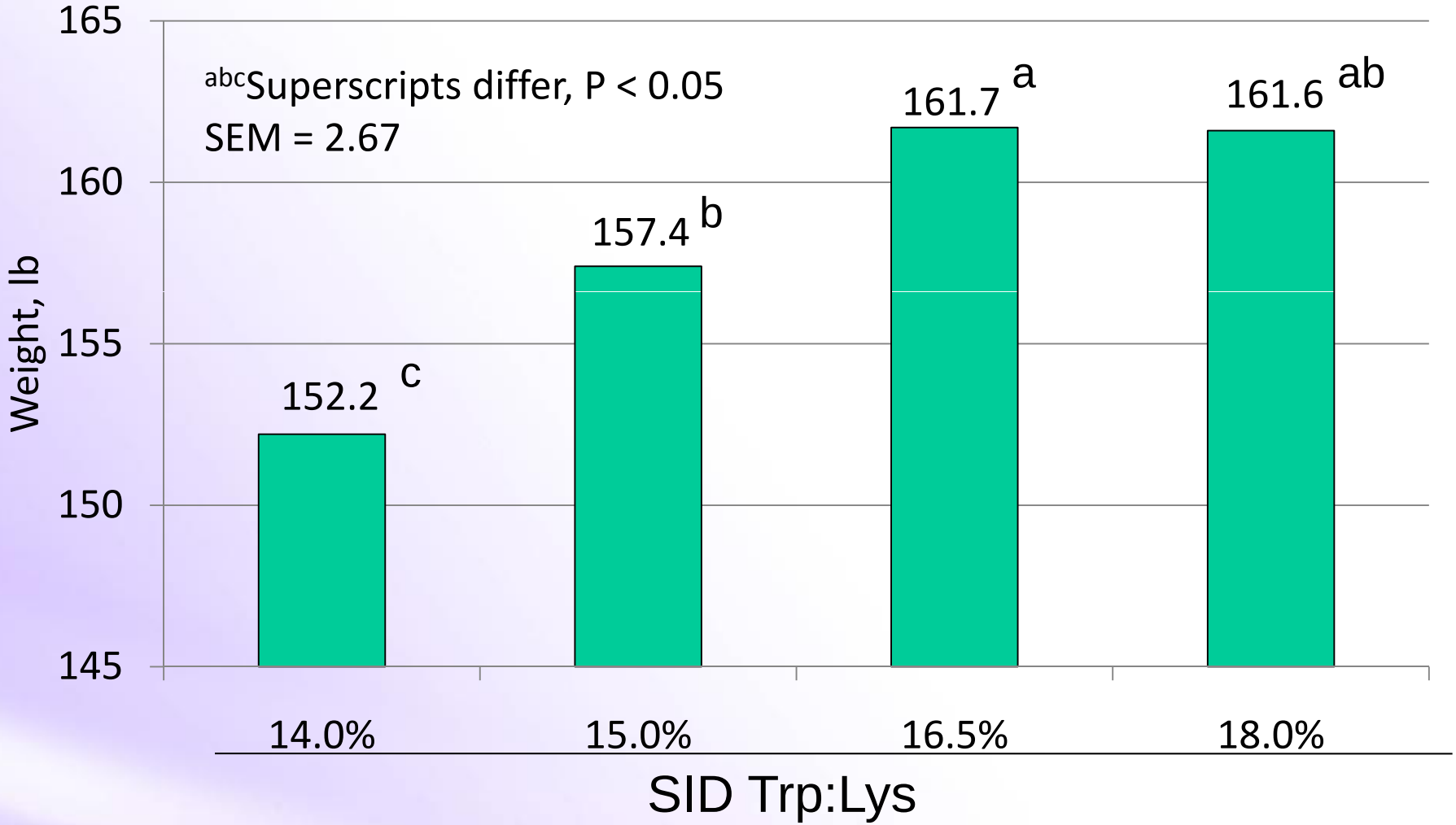
	DDGS, %		
	10%	**20%**	**30%**
Change in diet cost, $/ton	**-$9.10**	**-$17.01**	**-$23.72**
Approximate savings, $/pig	**$2.73**	**$5.10**	**$7.12**
Breakeven price, $/ton	**$236.03**	**$230.03**	**$224.07**

Effect of TID Try:Lys in 30% DDGS diets on finishing ADG (d 0 – 42; initial BW 80 lb)



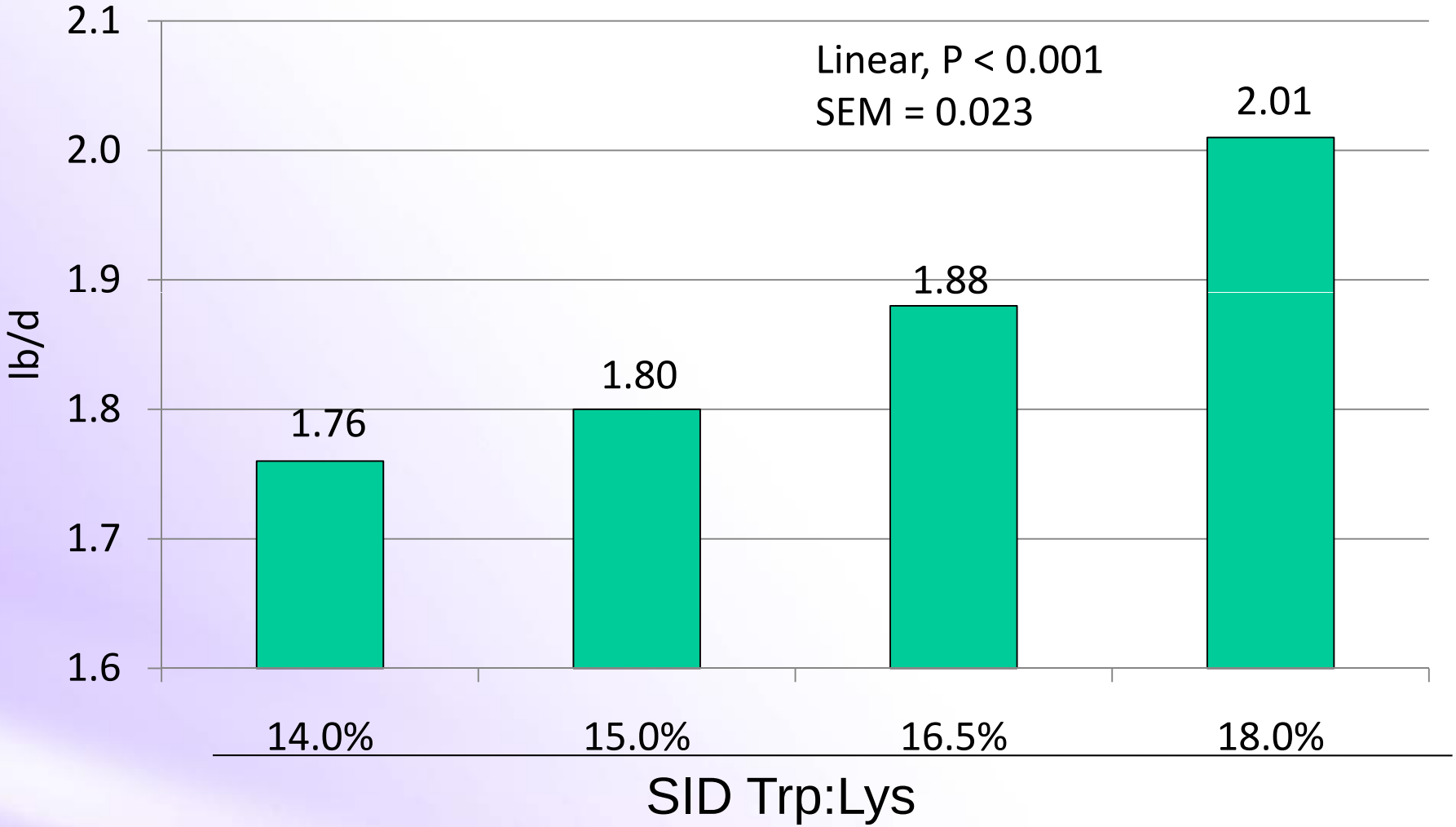
Barnes et al., 2010

Effect of TID Try:Lys in 30% DDGS diets on d 42 wt (d 0 – 42; initial BW 80 lb)



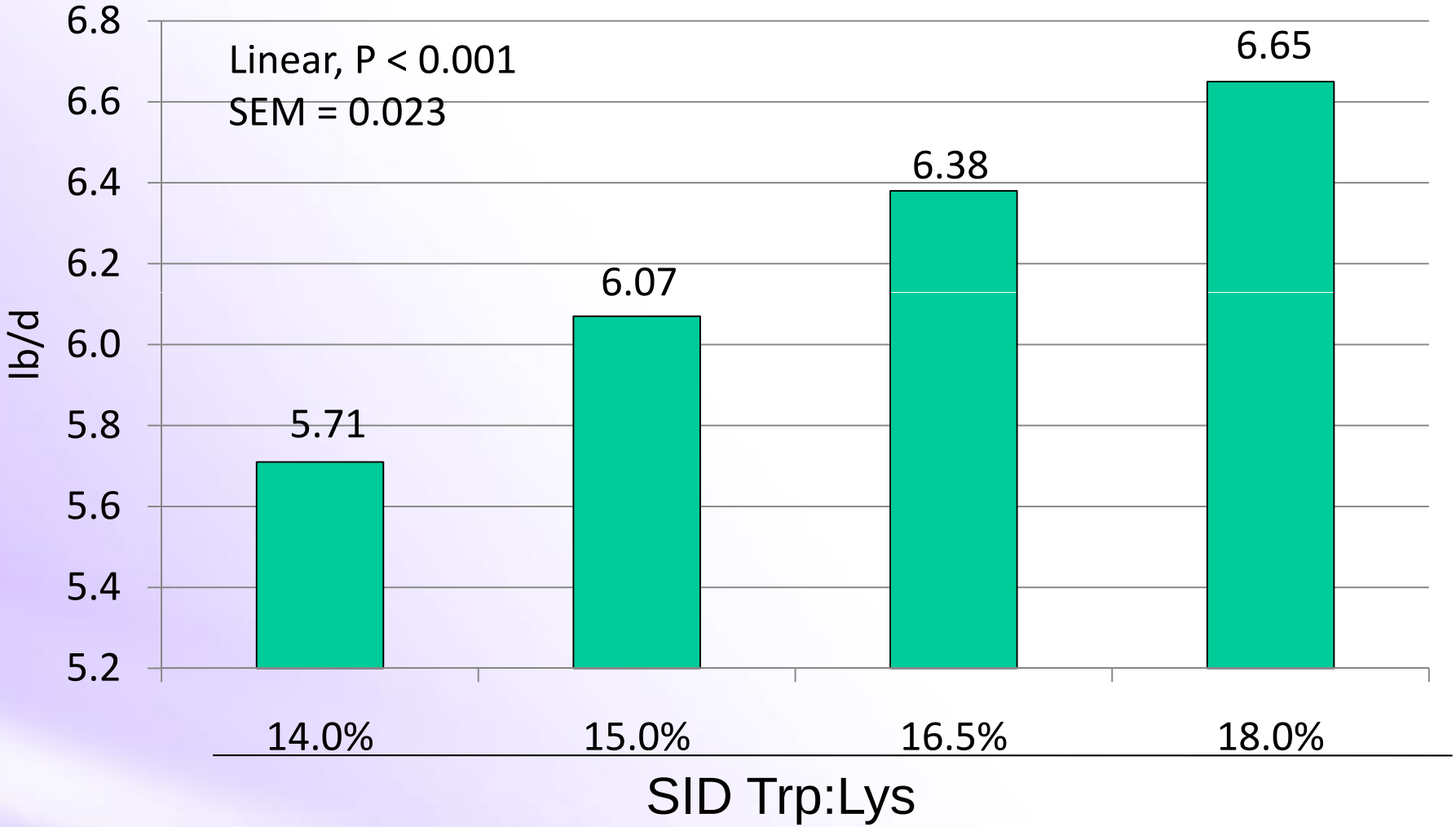
Barnes et al., 2010

Effect of TID Try:Lys in 30% DDGS diets on finishing ADG (d 42 to 105; BW 160 to 290 lb)



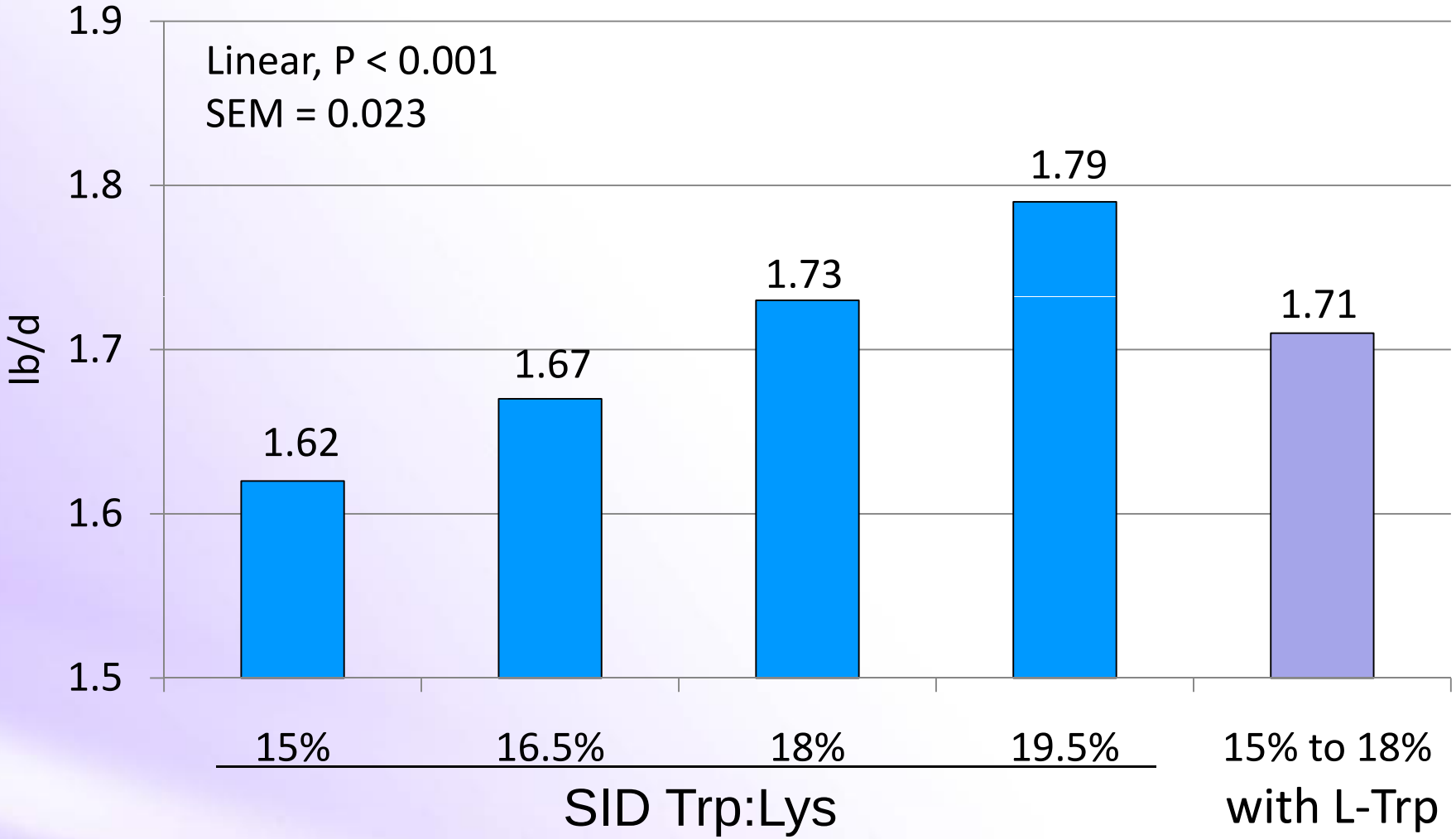
Barnes et al., 2010

Effect of TID Try:Lys in 30% DDGS diets on finishing ADFI (d 42 to 105; BW 160 to 290 lb)



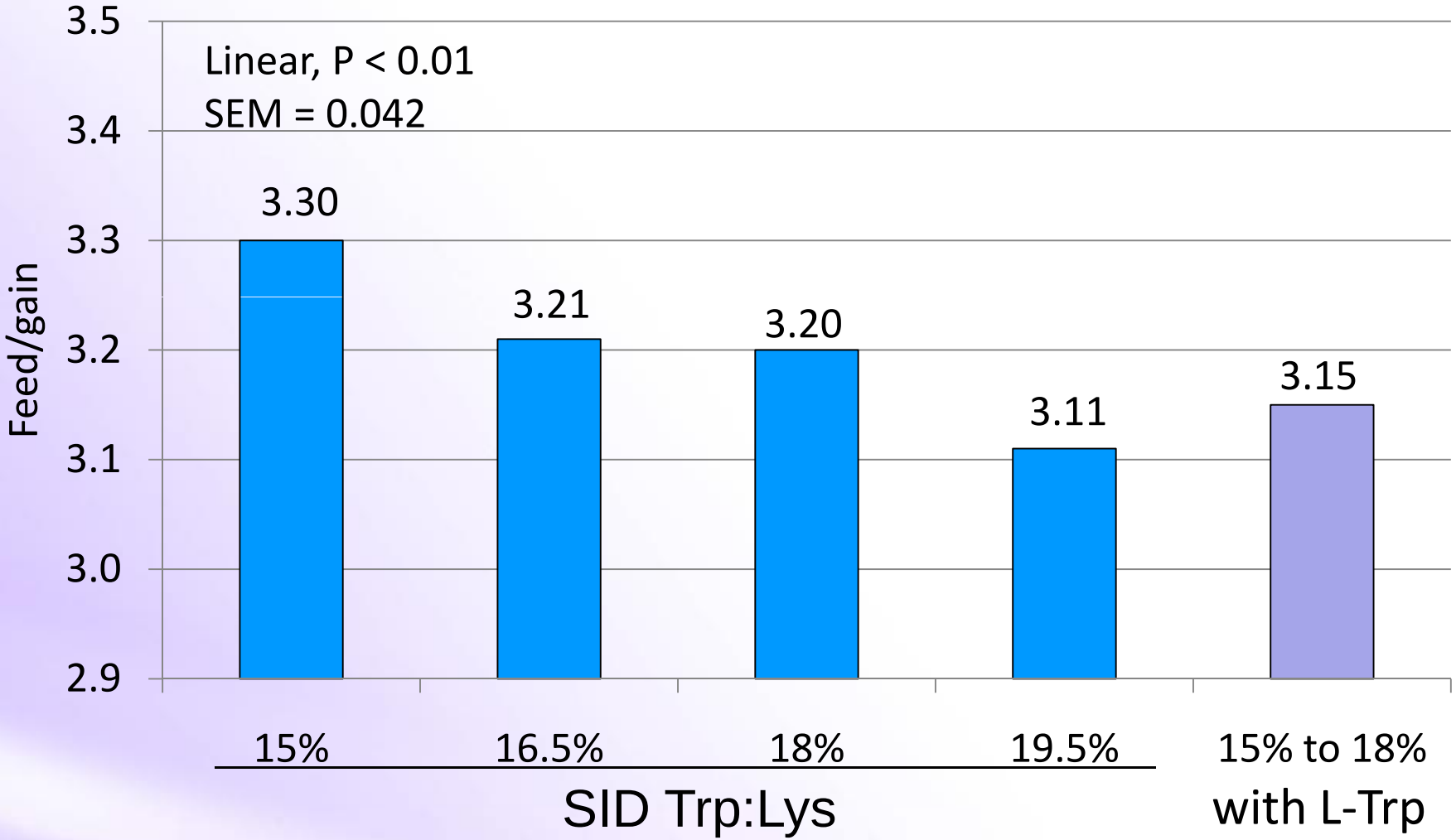
Barnes et al., 2010

Effect of TID Try:Lys in 30% DDGS diets on finishing ADG (Exp. 2; d 0 to 73; BW 150 to 275 lb)



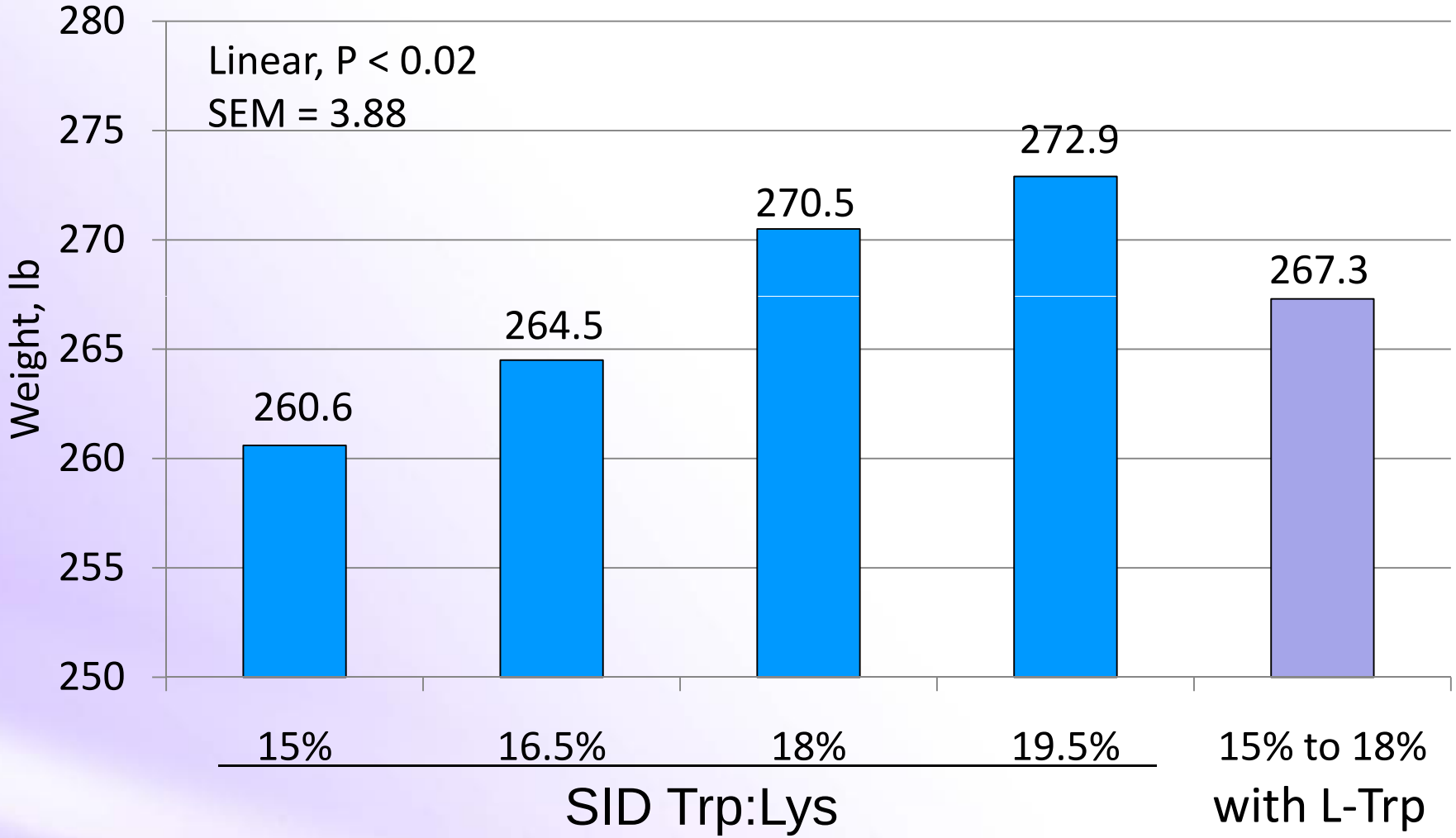
Barnes et al., 2010

Effect of TID Try:Lys in 30% DDGS diets on finishing F/G (Exp. 2; d 0 to 73; BW 150 to 275 lb)



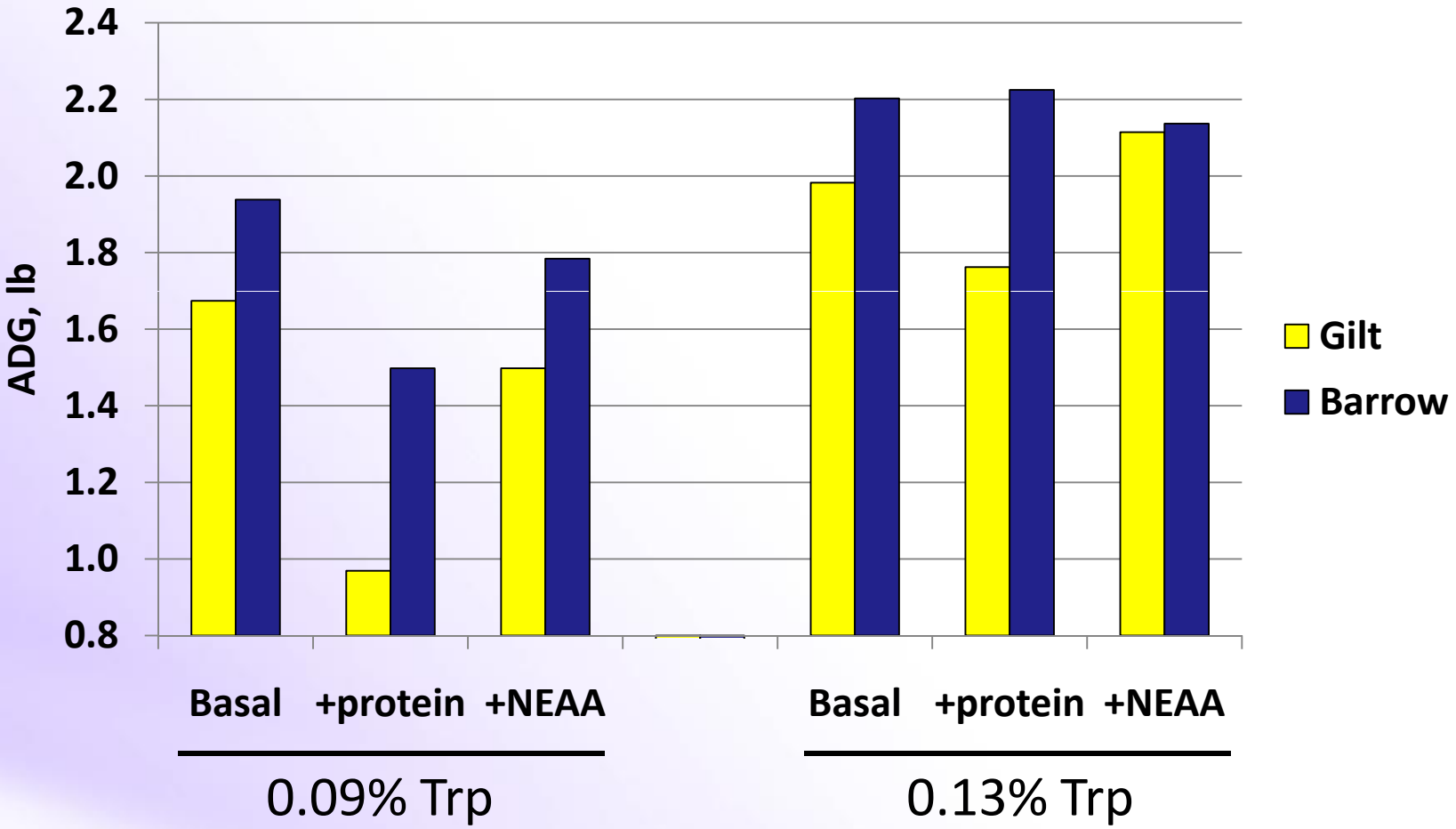
Barnes et al., 2010

Effect of TID Try:Lys in 30% DDGS diets on market weight (Exp. 2; d 0 to 73; BW 150 to 275 lb)



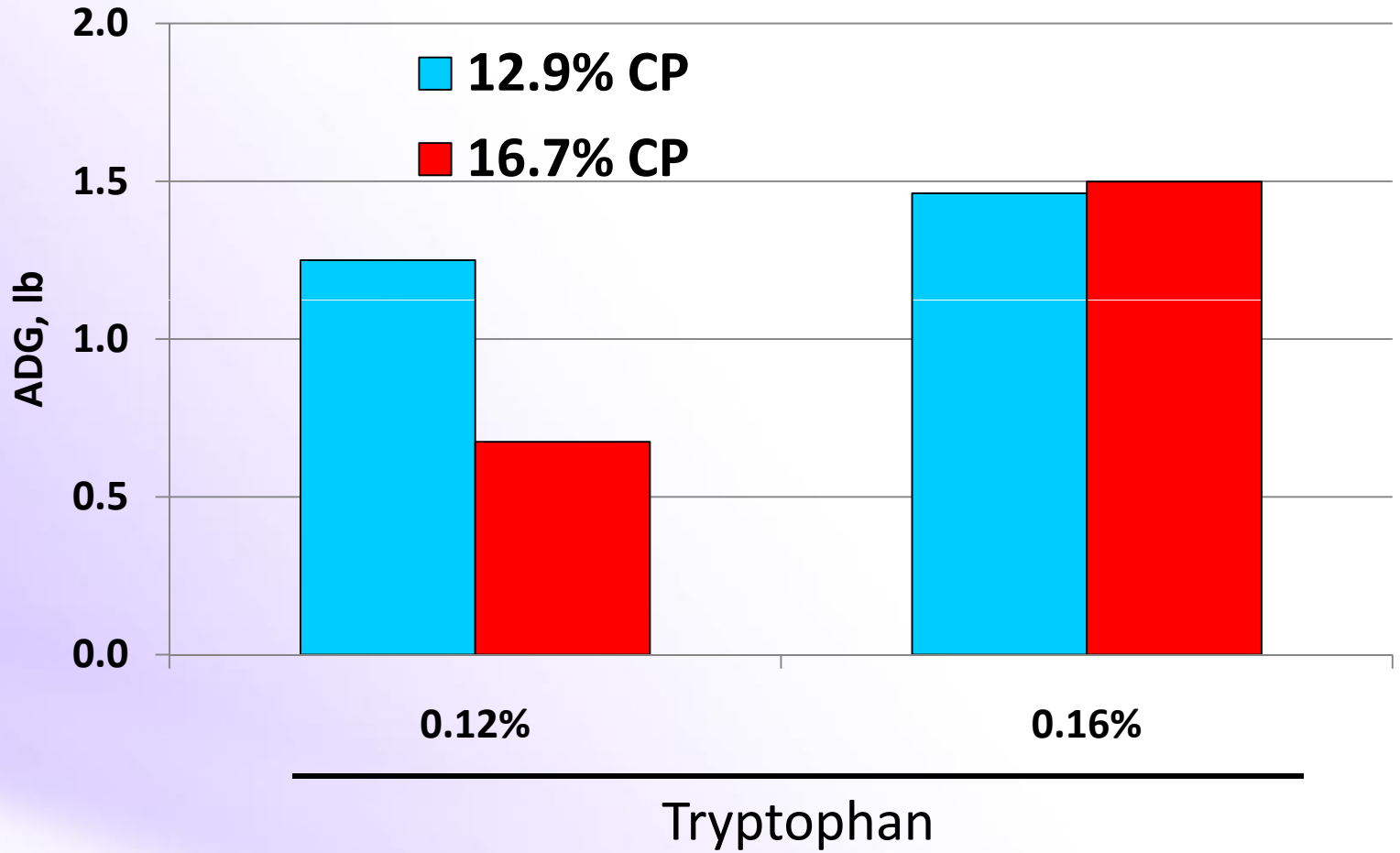
Barnes et al., 2010

Trp and Excess Dietary Protein



Henry et al., 1992

Trp and Excess Dietary Protein



Trp:LNAA, %	**3.5**	**2.9**	**4.7**	**3.9**

Henry et al., 1996

170 to 210 lb diet	Corn-soy	30% DDGS
Corn	1672	1184
Soybean meal	284	176
DDGS	- - -	600
Monocalcium P	8.5	- - -
Limestone	18	23
Salt	7	7
Premix	4	4
Lysine HCl	5.2	6.5
L-threonine	1.5	- - -
	2000	2000
SID amino acids, %		
Lysine	.76	.76
Isoleucine:lysine	63	**71**
Leucine:lysine	161	**213**
Met & cys:lysine	58	75
Threonine:lysine	66	67
Tryptophan:lysine	16.5	16.5
Valine:lysine	75	**89**
Phe:lysine	78	**95**
Tyr:lysine	55	**69**
Trp:LNAA. %	3.8	**3.1**

High DDGS levels greatly alter the tryptophan:LNAA ratio in late finisher diets

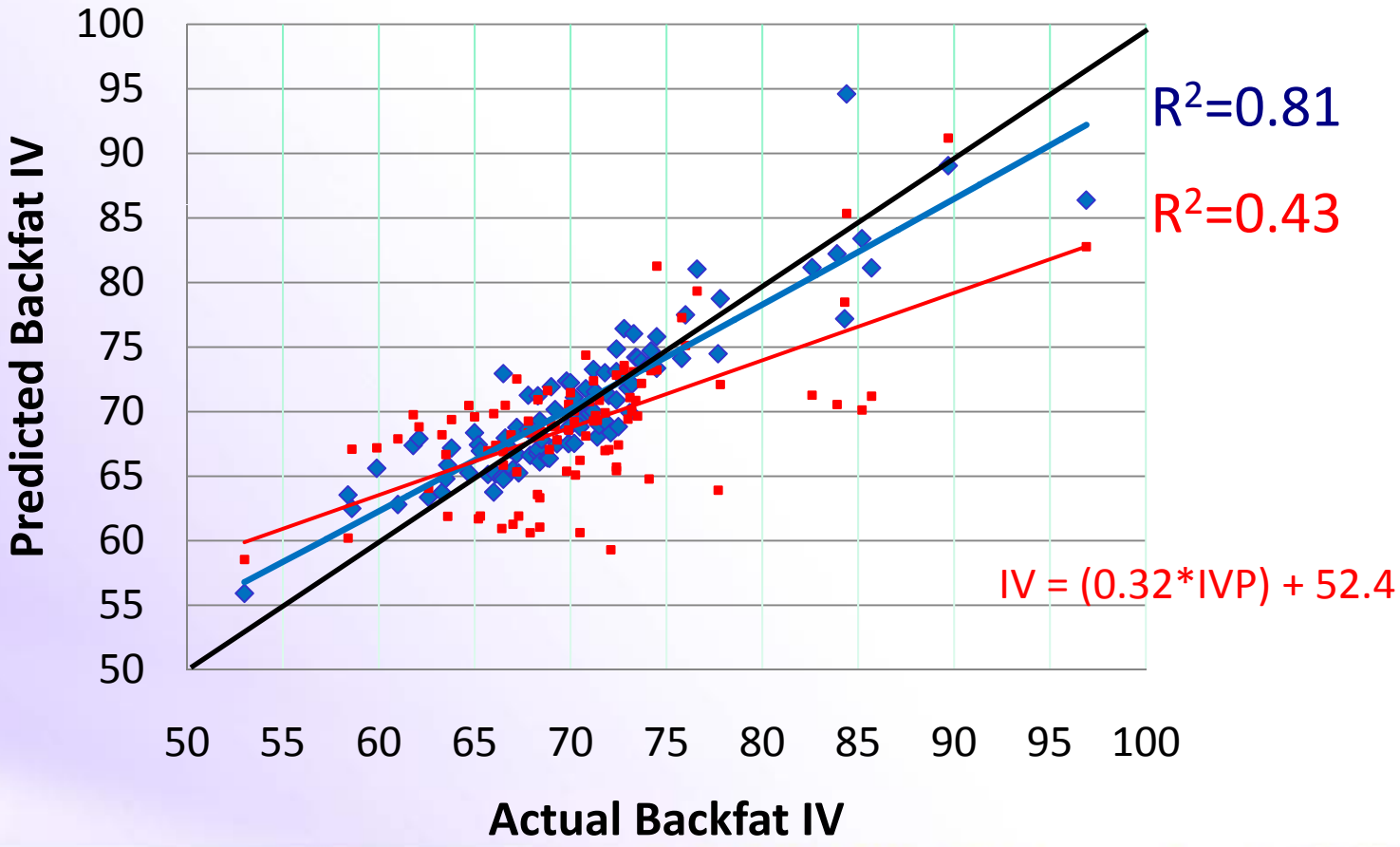
Weight, lb		
Start	End	Trp:LNAA
50	75	3.5%
75	100	3.5%
100	125	3.4%
125	150	3.3%
150	175	3.2%
175	200	3.1%
200	225	3.0%
225	250	2.8%

Meta-analyses describing the variables that influence the backfat, belly fat, and jowl fat iodine values of pork carcasses

- Constant IVP throughout
  - 21 experiments
    - Backfat IV - 16 experiments with 95 observations (IVP of 5 to 187)
    - Belly fat IV - 10 experiments with 49 observations (IVP of 5 to 187)
    - Jowl fat IV - 12 experiments with 58 observations (IVP of 37 to 110)
- IVP reduction strategies
  - 6 experiments
    - Backfat IV - 4 experiments with 33 observations
    - Belly fat IV - 3 experiments with 21 observations
    - Jowl fat IV - 3 experiments with 23 observations

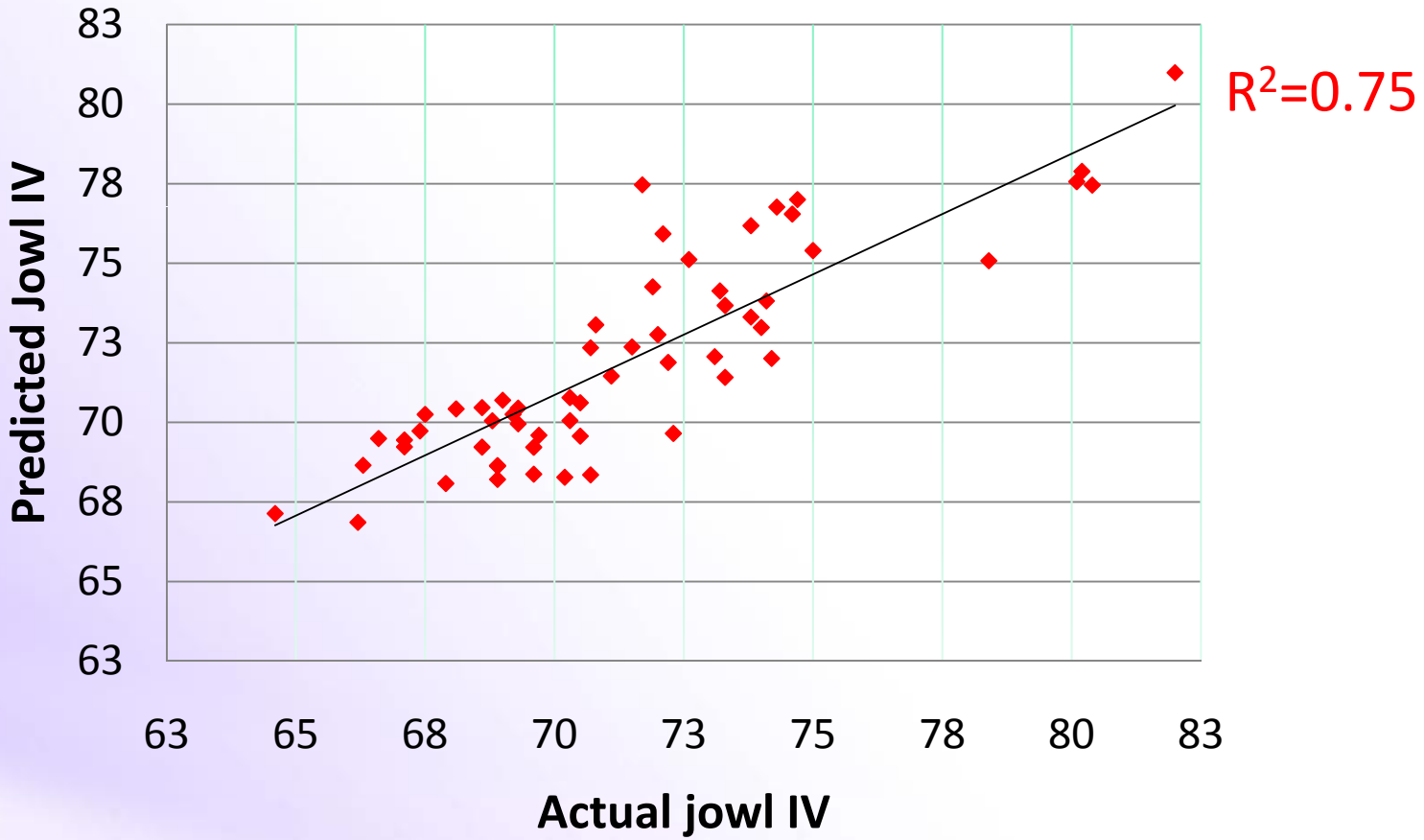
Results from meta-analyses of constant IVP – regression model to predict backfat IV

Backfat IV = 76.58 + 0.08*diet IVP + 1.82*diet 18:2 (%) + 2.00*[diet 18:2 (%) + diet 18:3(%)] + 0.10*initial BW (kg) – 29.30*ADG (kg)



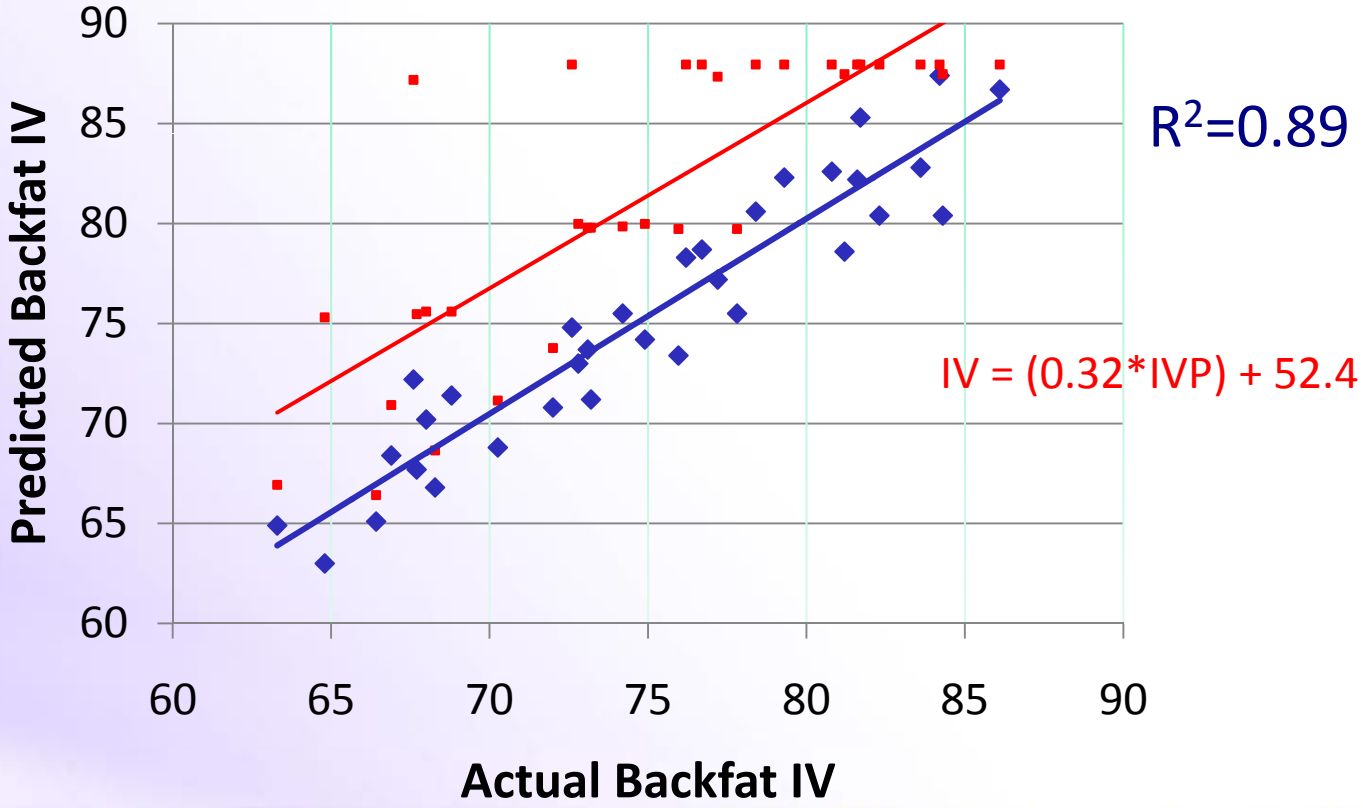
Results from meta-analyses of constant IVP – <u>regression model to predict jowl fat IV</u>

Jowl fat IV = 2.70 + 0.18*diet IVP + 2.15*diet 18:2 (%) – 0.33*diet ME from fat (%) + 1.10*estimated FFLI



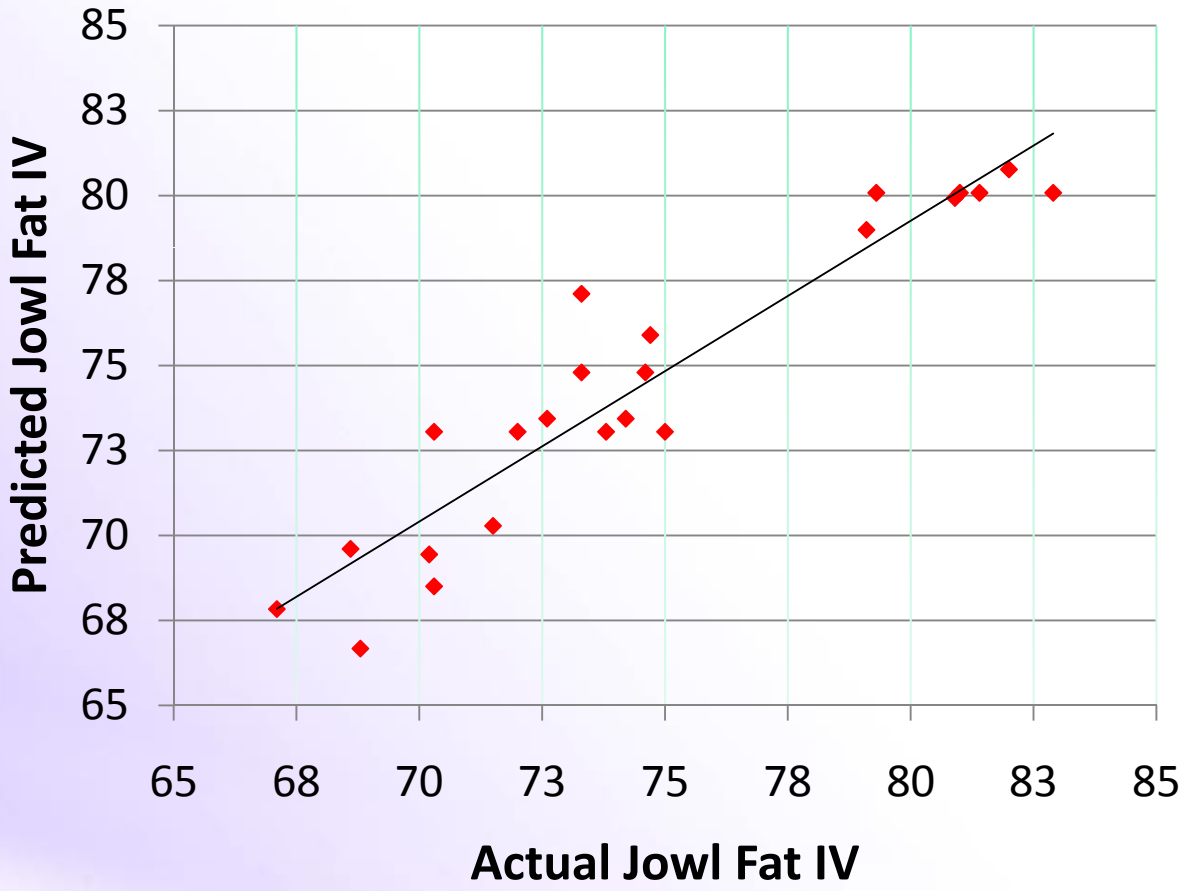
Results from meta-analyses of IVP reduction strategies – regression model to predict backfat IV

Backfat IV = 63.57 + 0.25*initial diet IVP + 0.28*BW at initiation of withdrawal (kg) + 0.003*(withdrawal diet IVP*withdrawal days) – 0.36*final BW (kg)



Results from meta-analyses of IVP reduction strategies – regression model to predict jowl fat IV

Jowl fat IV = 52.43 + 4.99*initial diet 18:2 (%) + 0.06*days fed the initial diet

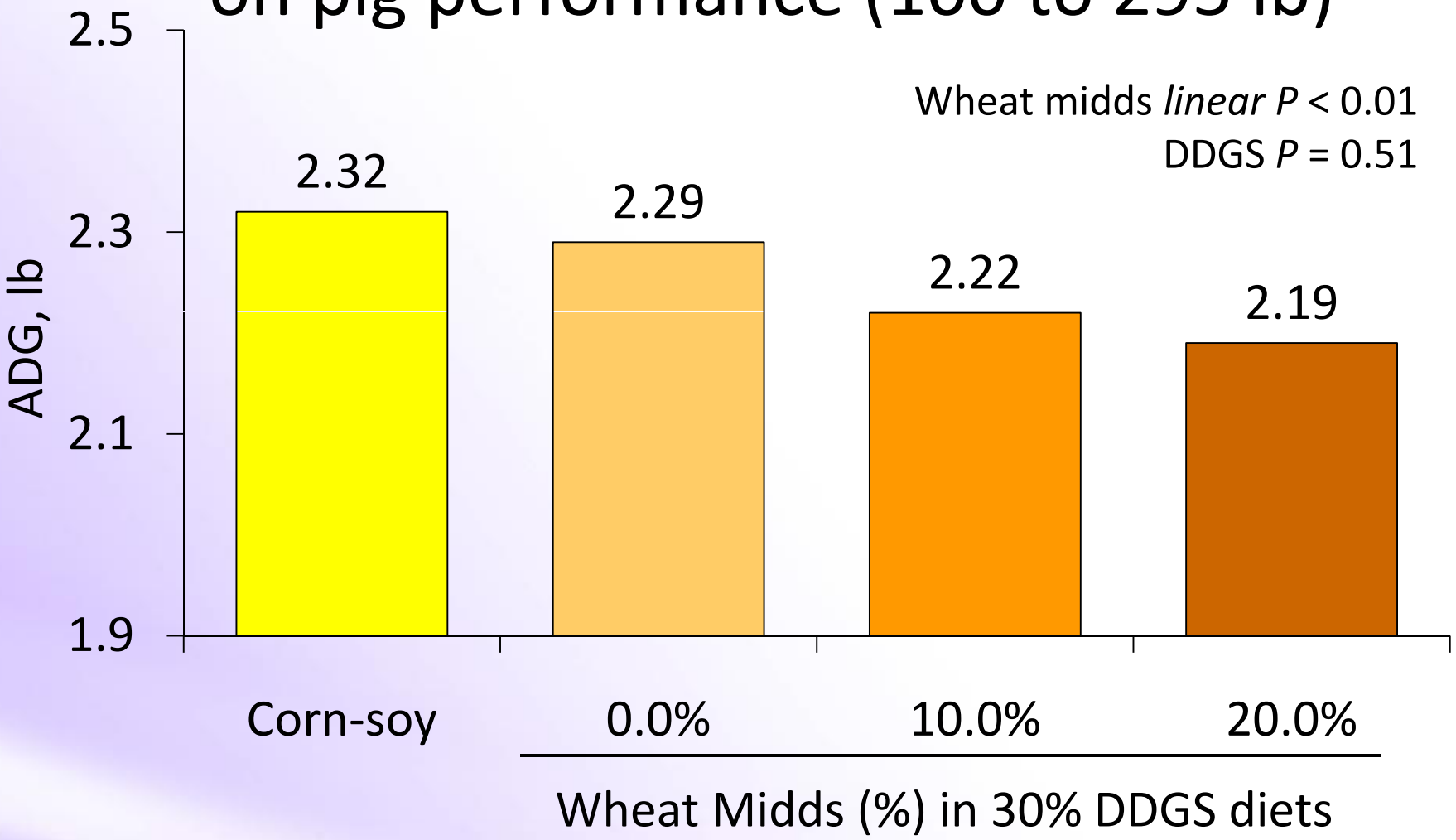


R^2=0.89

IV Meta-analysis conclusions

- The diet characteristics, particularly the concentrations of fatty acids, have the greatest influence on the fatty acid profile of carcass fat in growing-finishing pigs.
  - In this regard, the PUFA (especially C18:2 and C18:3), are the most important dietary FA.
- Other important contributing factors include the growth rate, BW, amount of subcutaneous fat (backfat), carcass leanness (FFLI), and the duration or BW range.
  - These characteristics account for differences in genetics, genders, feeding constraints, and environmental differences.

Effect of DDGS and wheat midds on pig performance (100 to 295 lb)



Barnes et al., 2010

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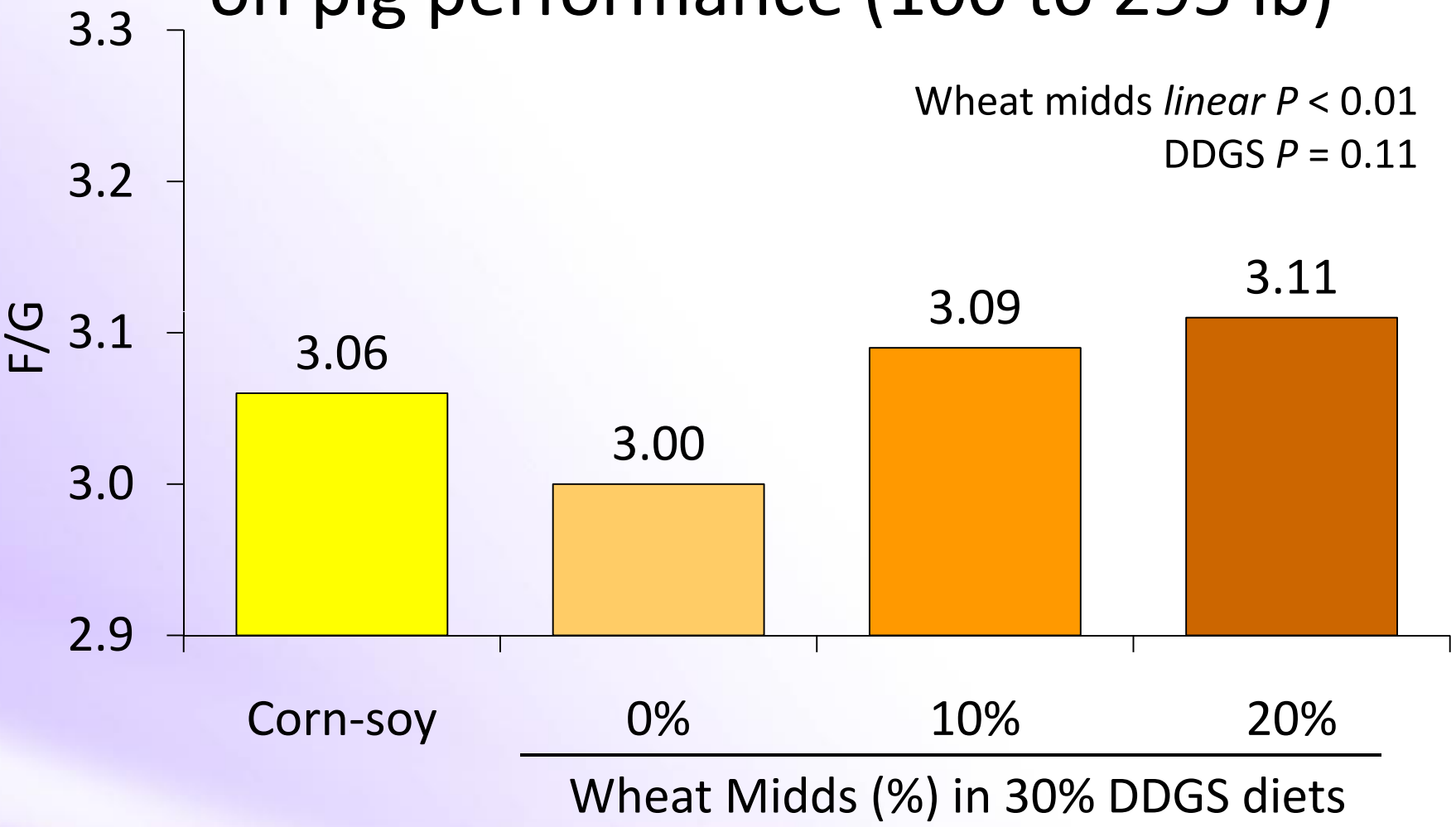
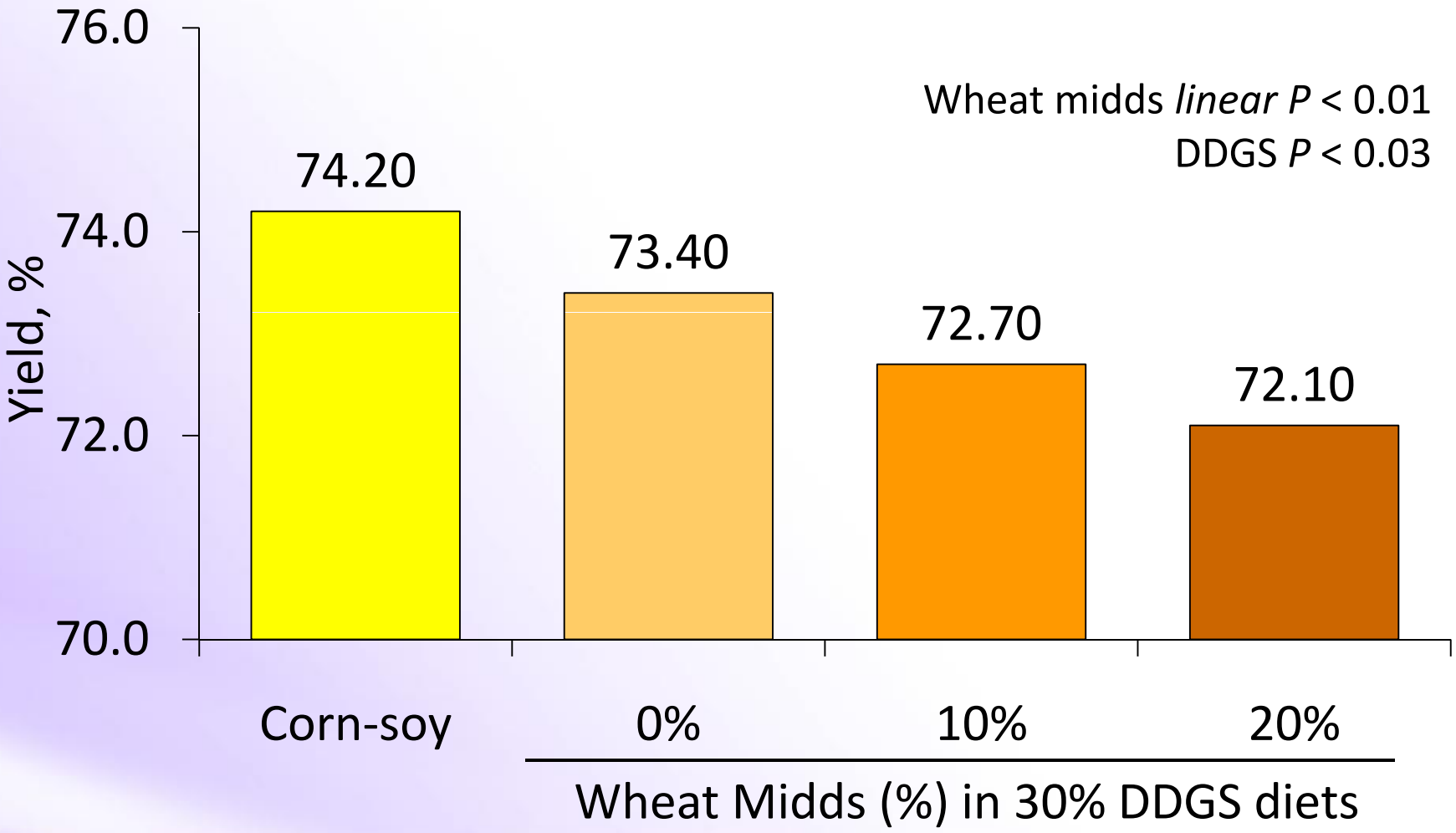
Effect of DDGS and wheat midds on pig performance (100 to 295 lb)



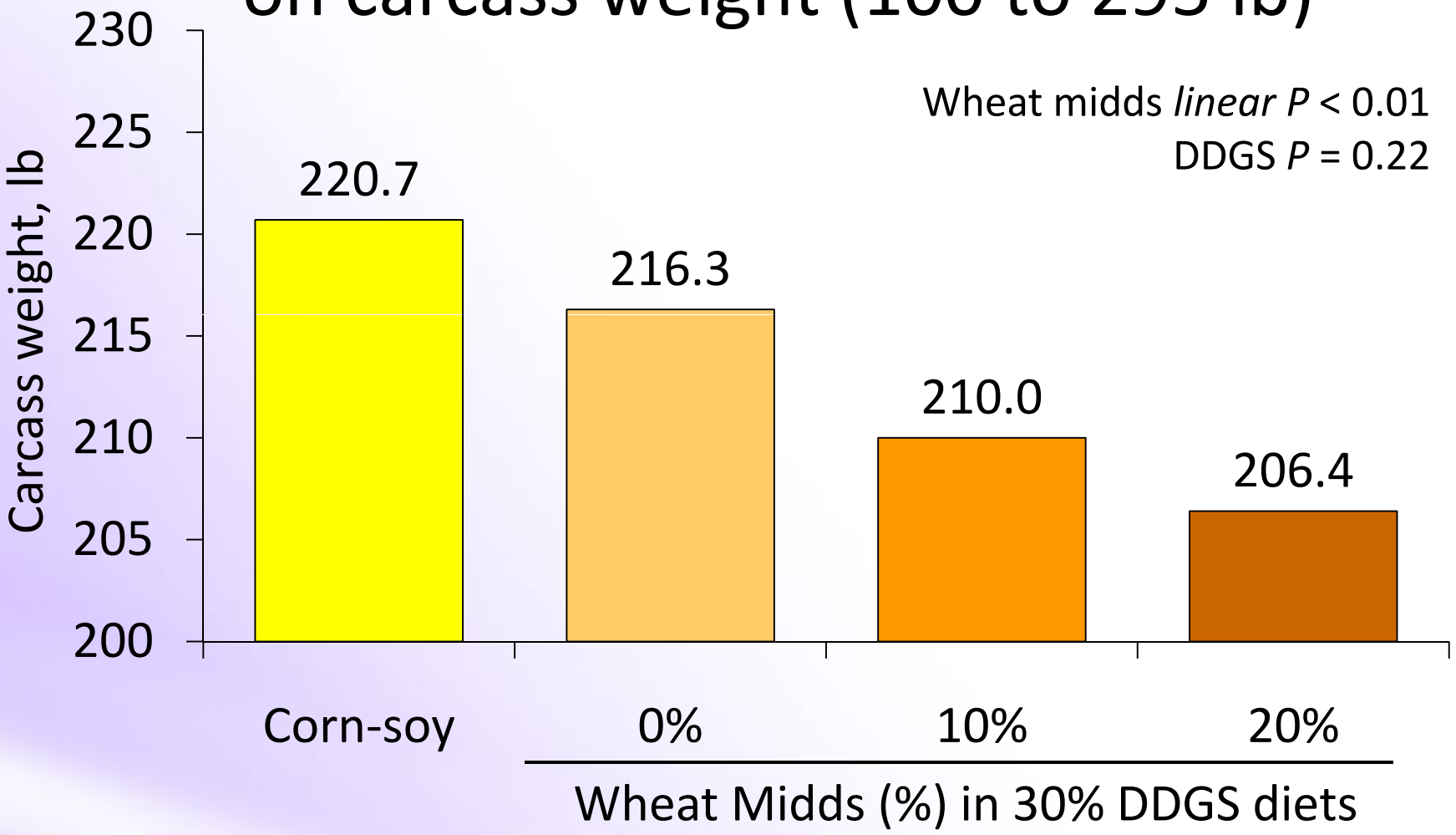
Barnes et al., 2010

Effect of DDGS and wheat midds on yield (plant wt/farm wt) (100 to 295 lb)



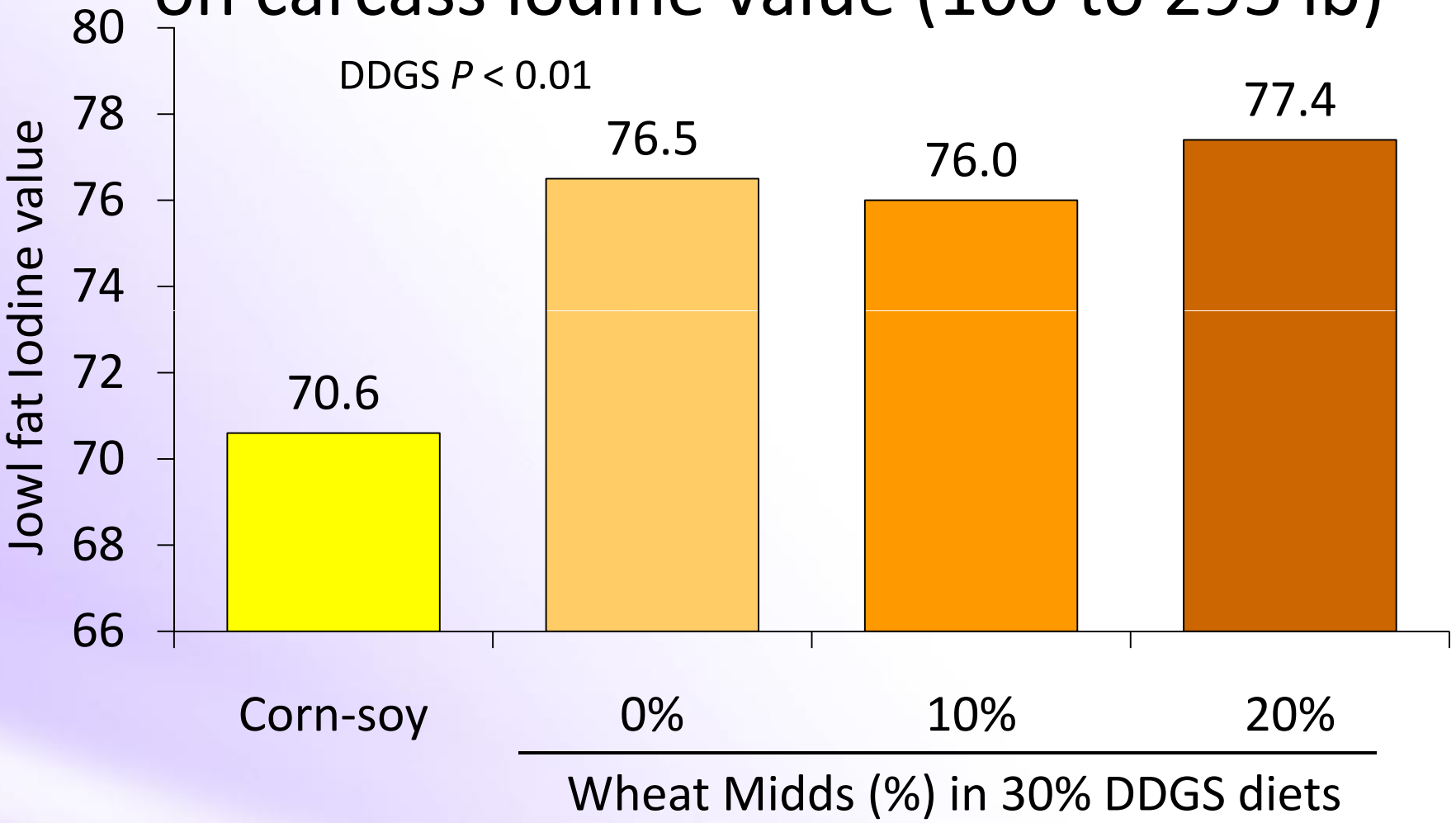
Barnes et al., 2010

Effect of DDGS and wheat midds on carcass weight (100 to 295 lb)



Barnes et al., 2010

Effect of DDGS and wheat midds on carcass iodine value (100 to 295 lb)



Barnes et al., 2010

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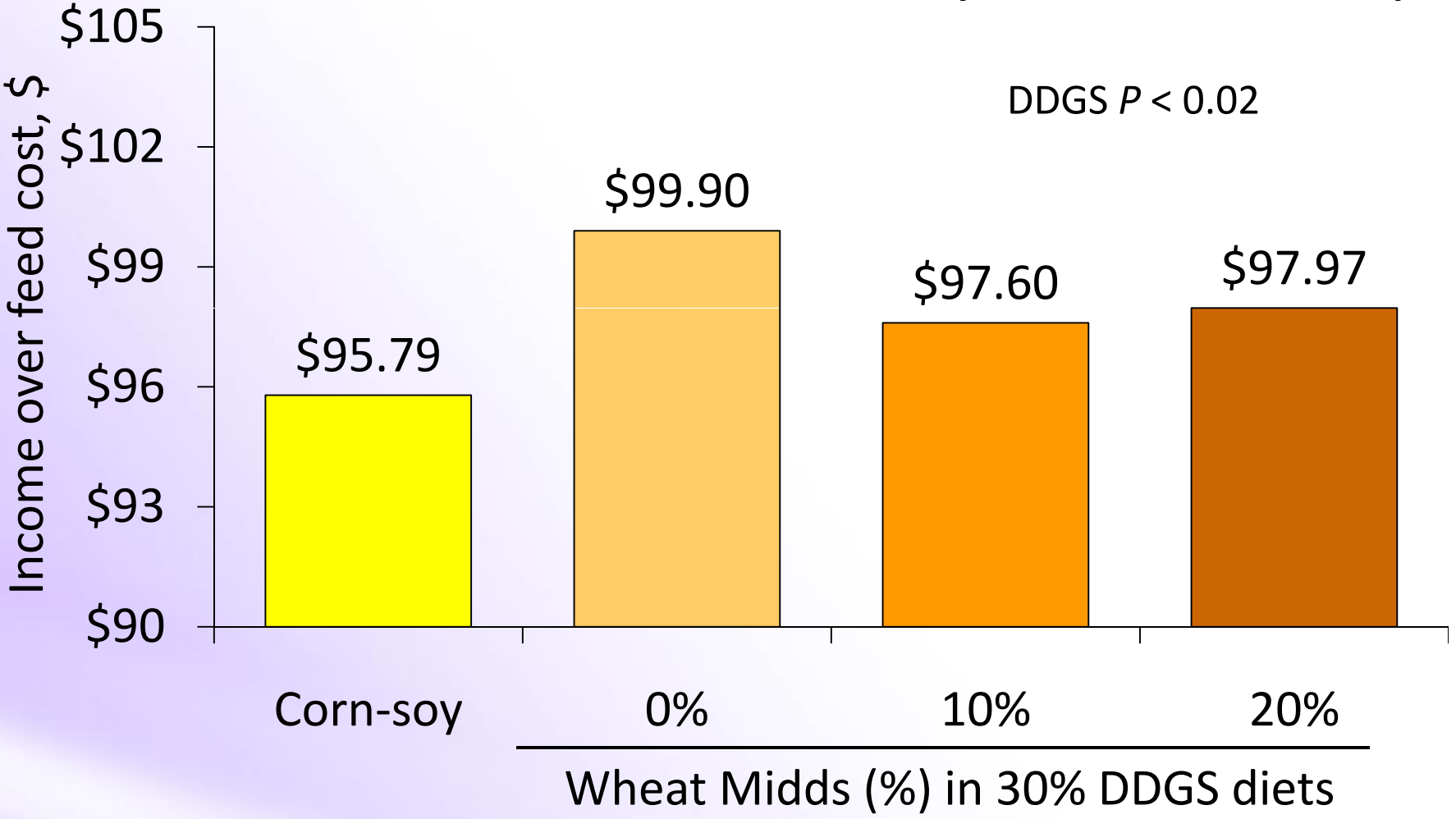
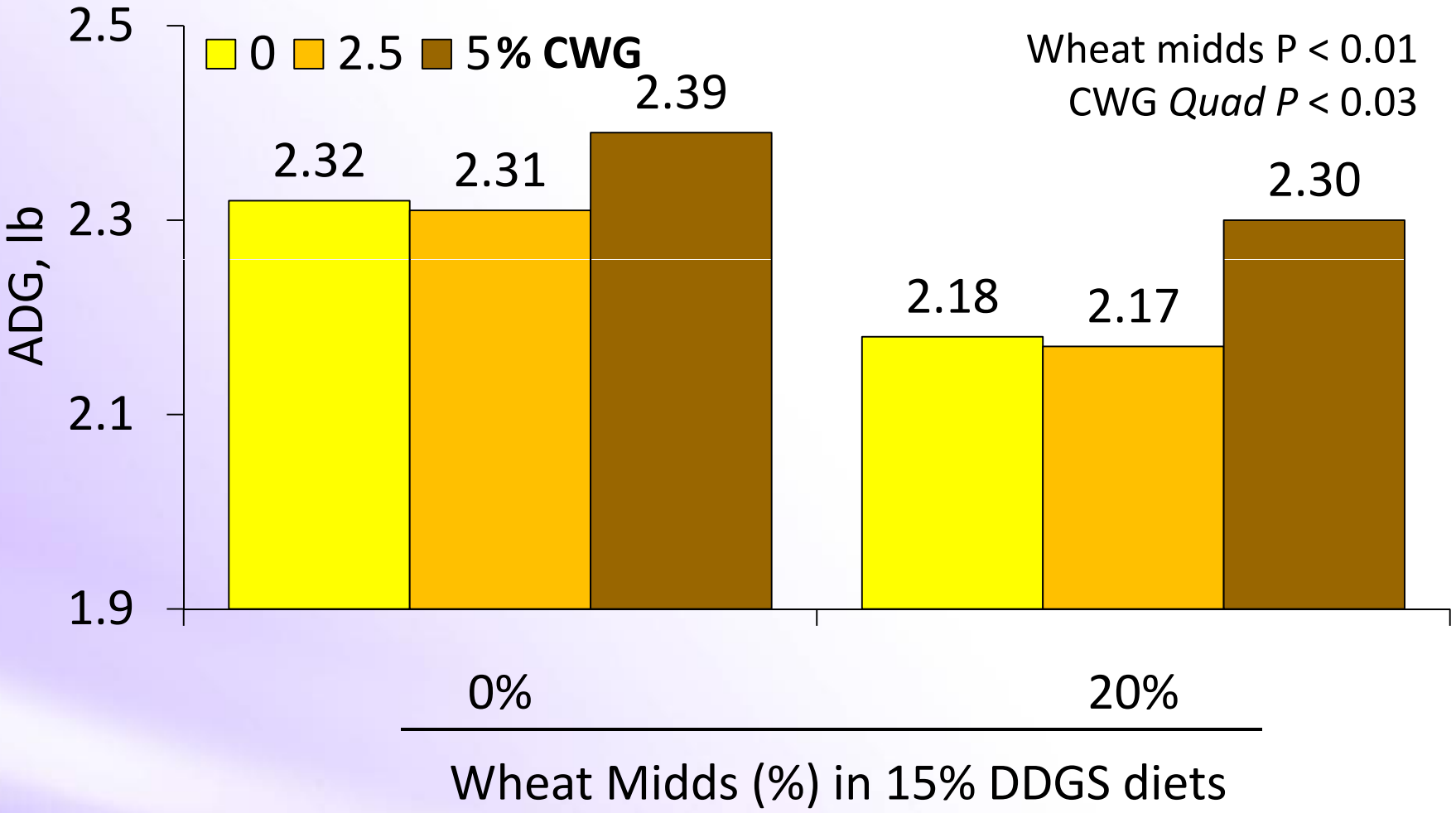
Effect of DDGS and wheat midds on Income over feed cost (100 to 295 lb)



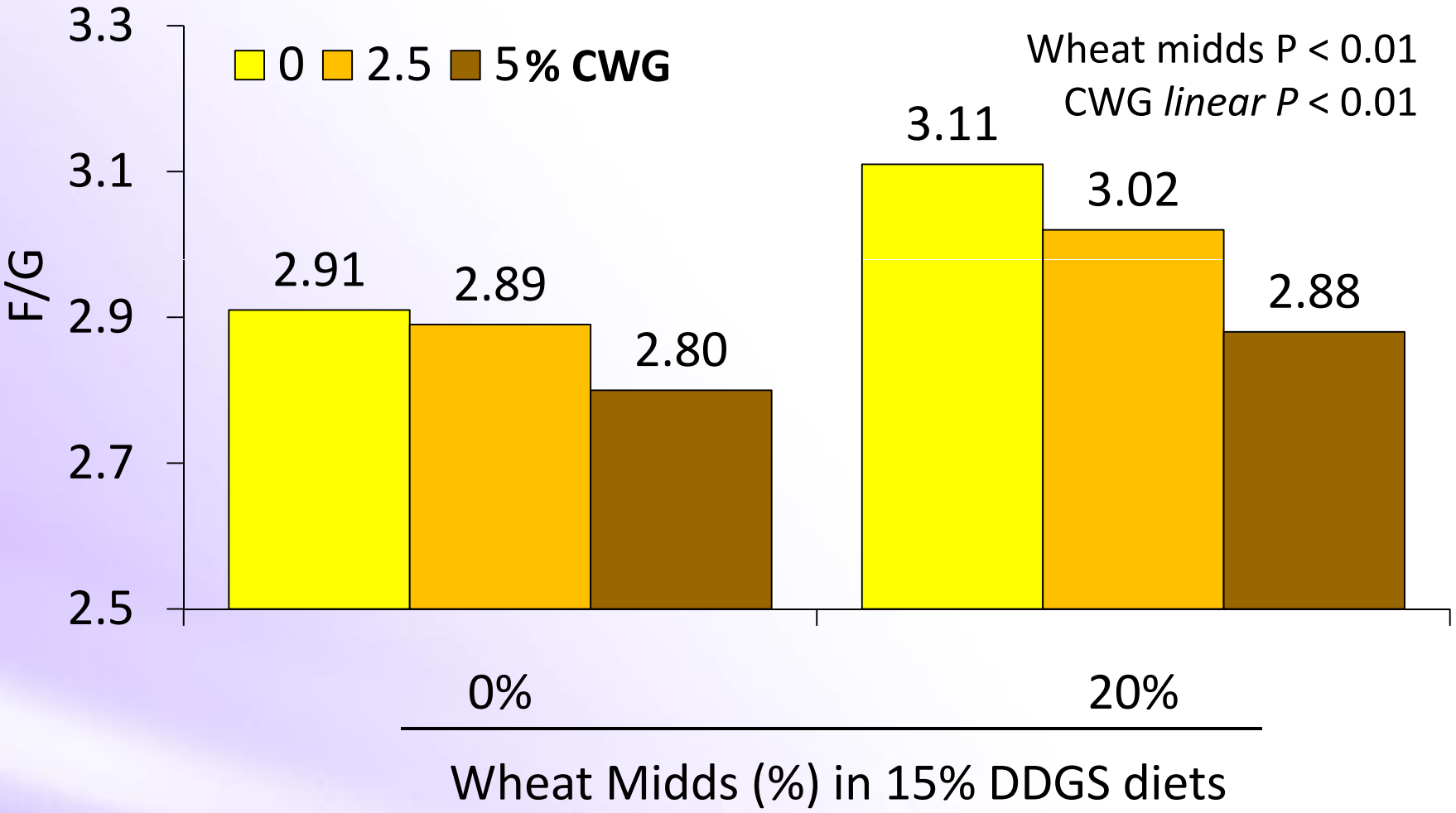
Barnes et al., 2010

Effect of wheat midds and choice white grease on pig performance (93 to 295 lb)



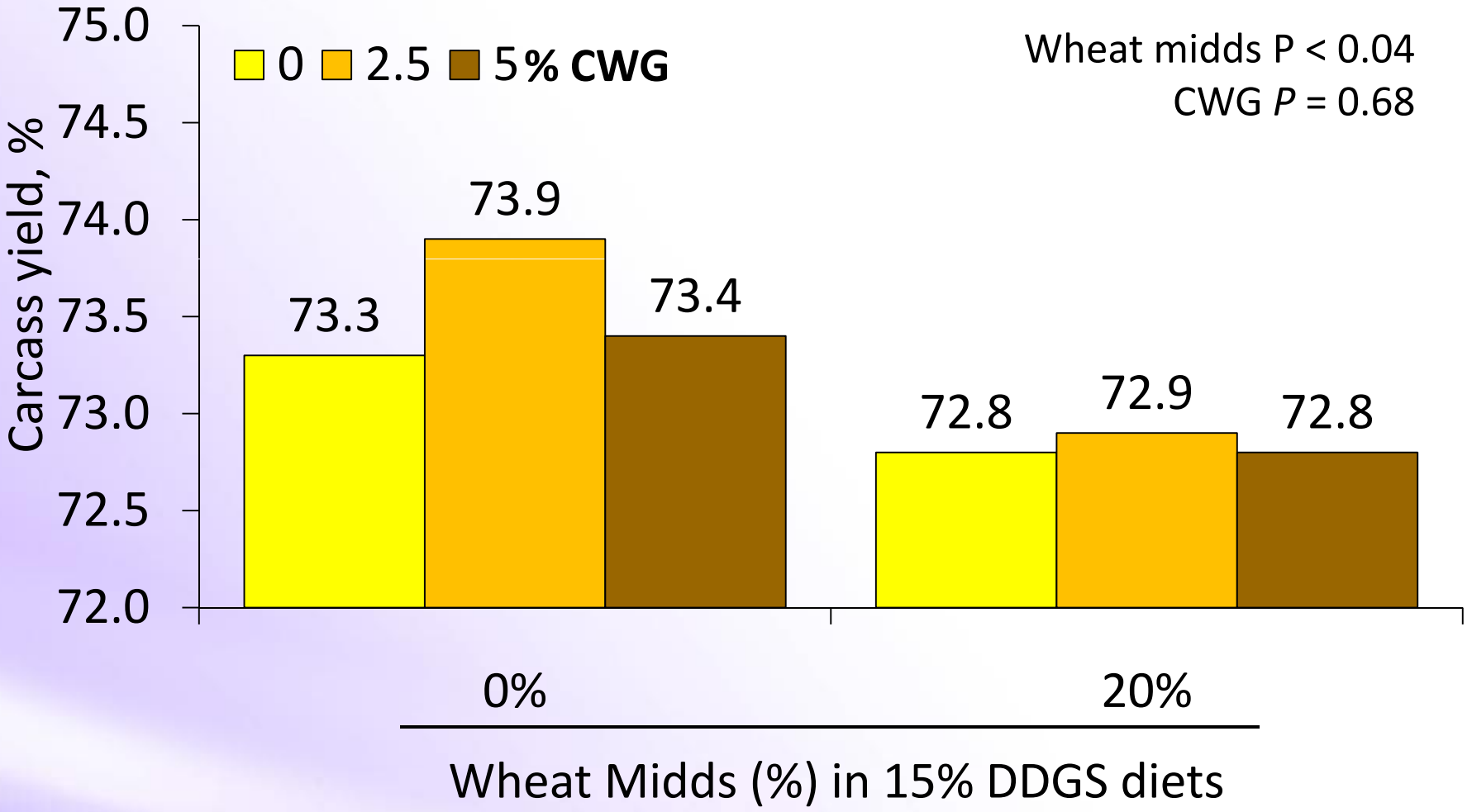
Barnes et al., 2010

Effect of wheat midds and choice white grease on pig performance (93 to 295 lb)



Barnes et al., 2010

Effect of wheat midds and choice white grease on carcass yield (plant/farm wt)



Barnes et al., 2010

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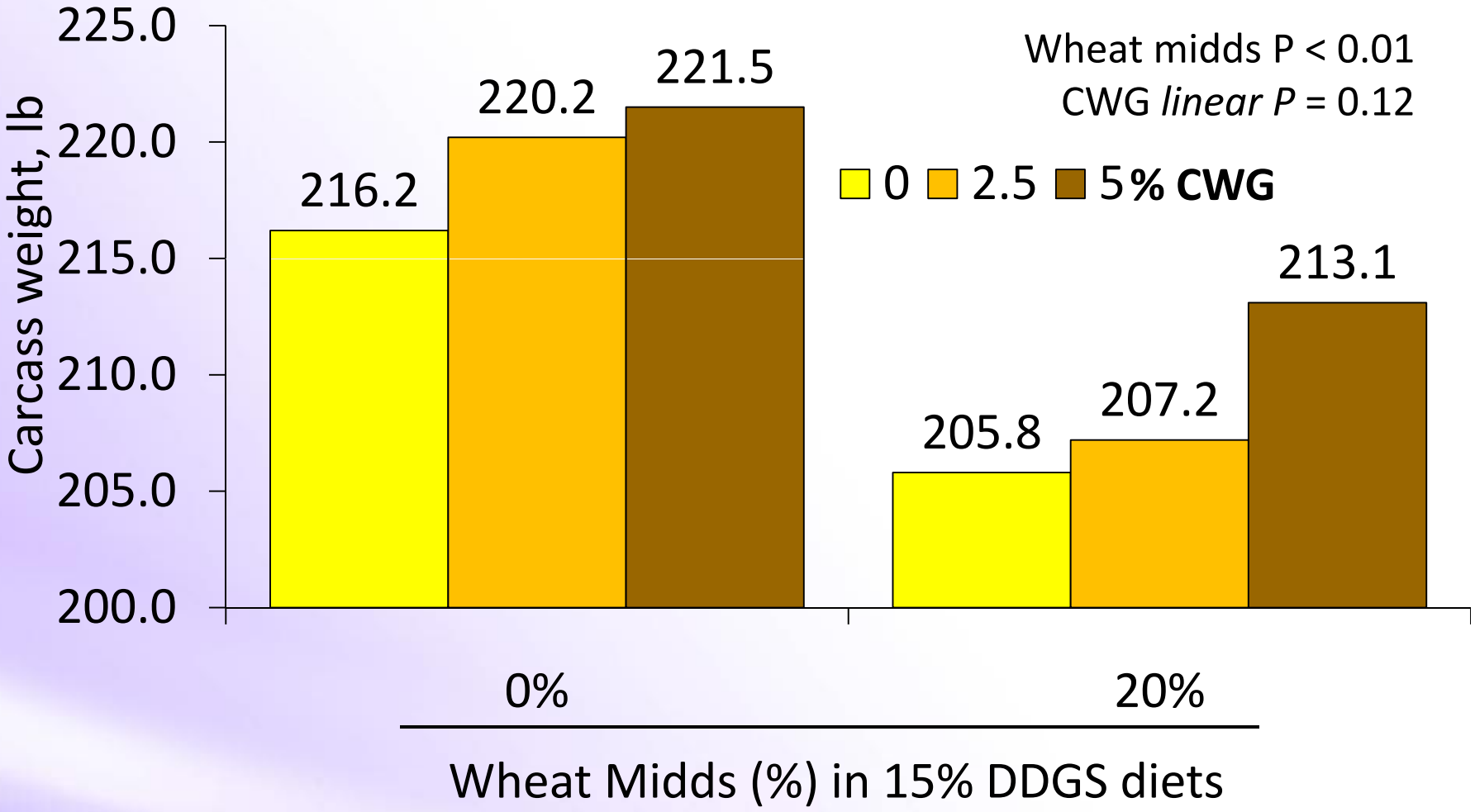
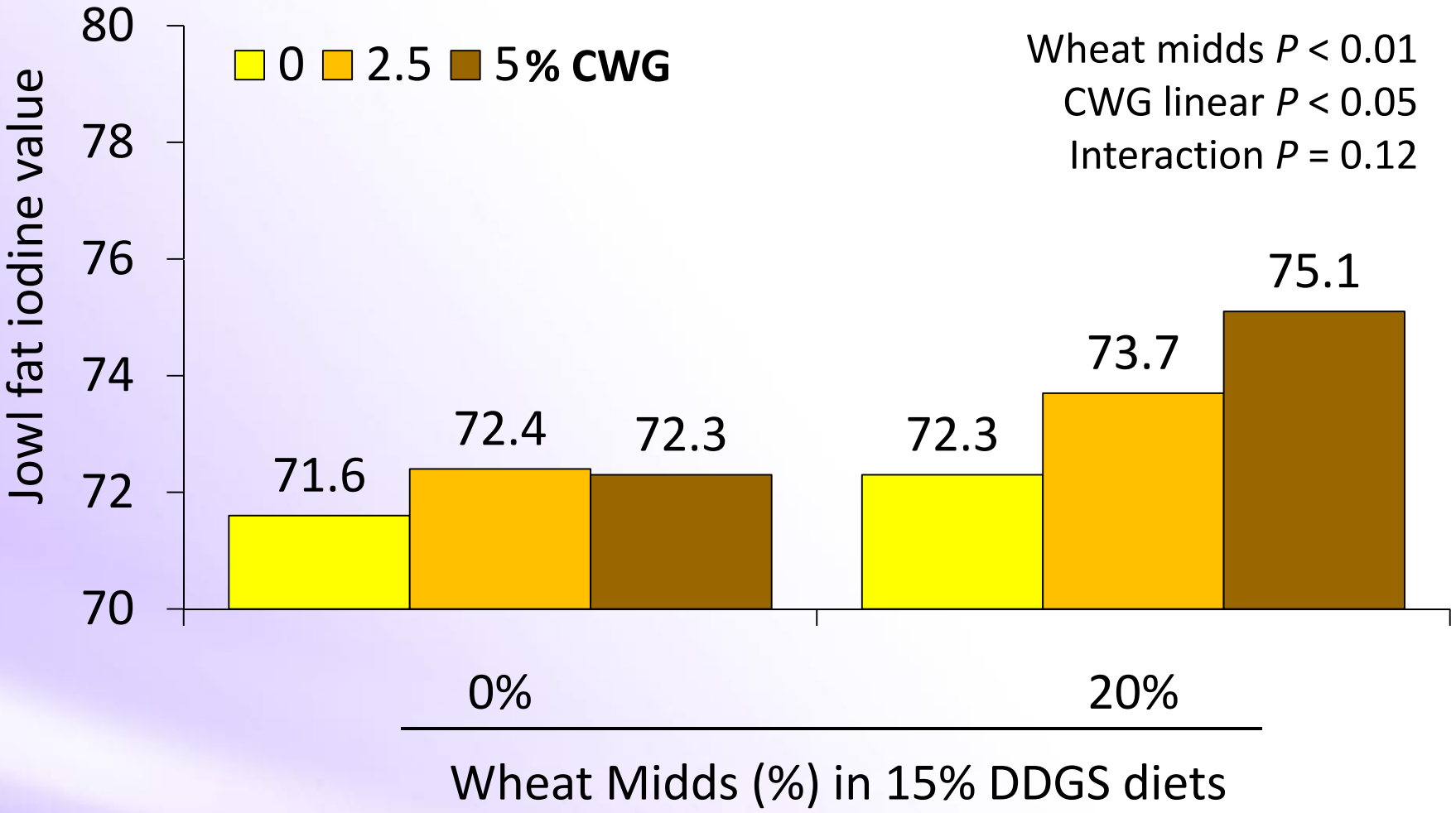


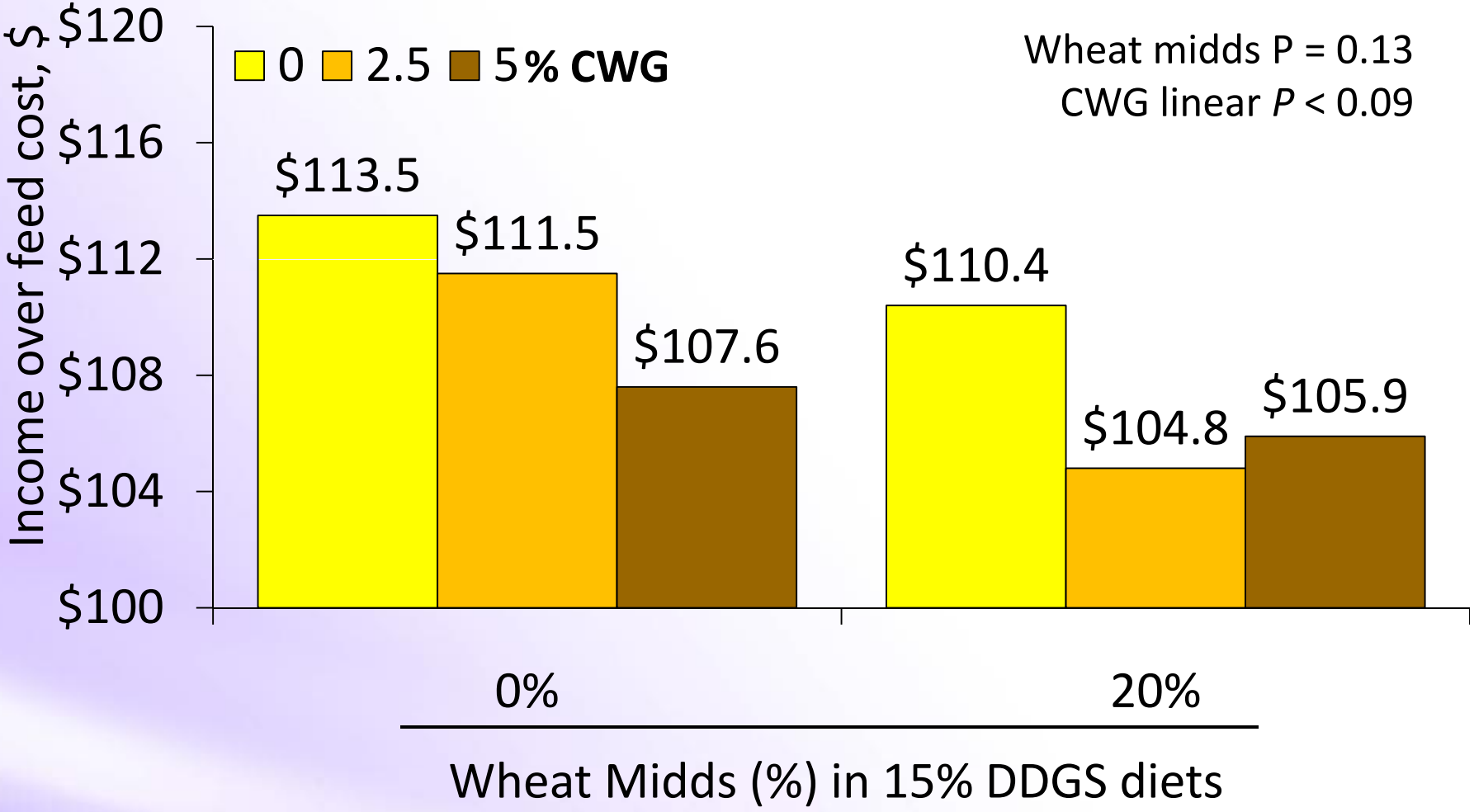
Barnes et al., 2010

Effect of wheat midds and choice white grease on jowl fat iodine value



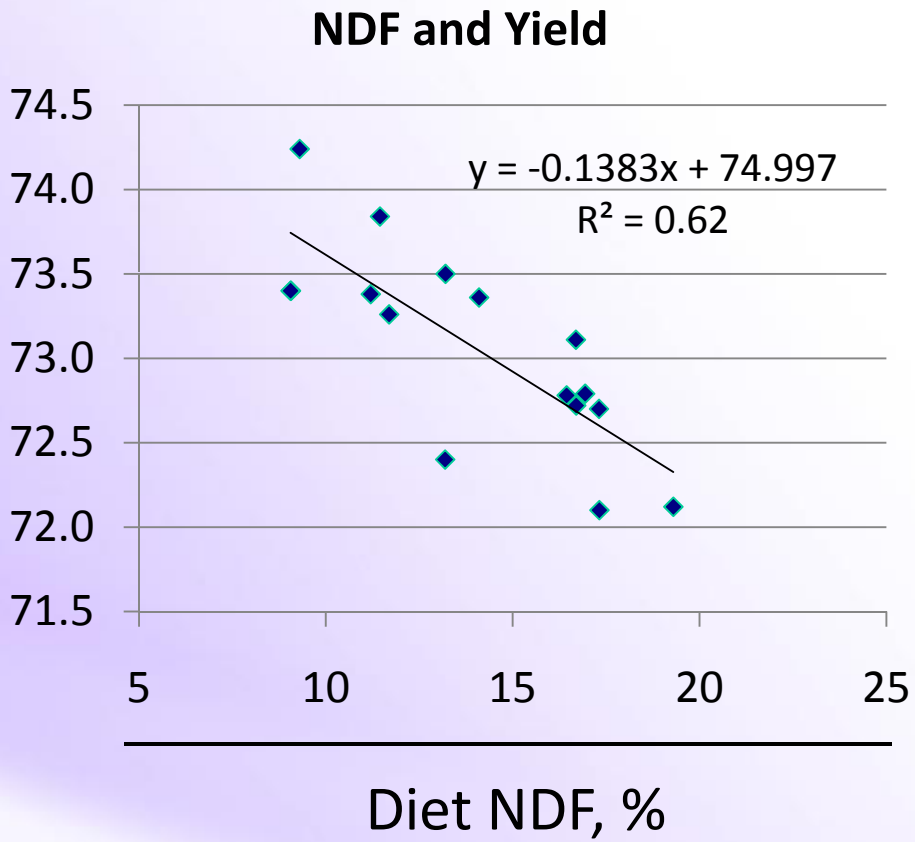
Barnes et al., 2010

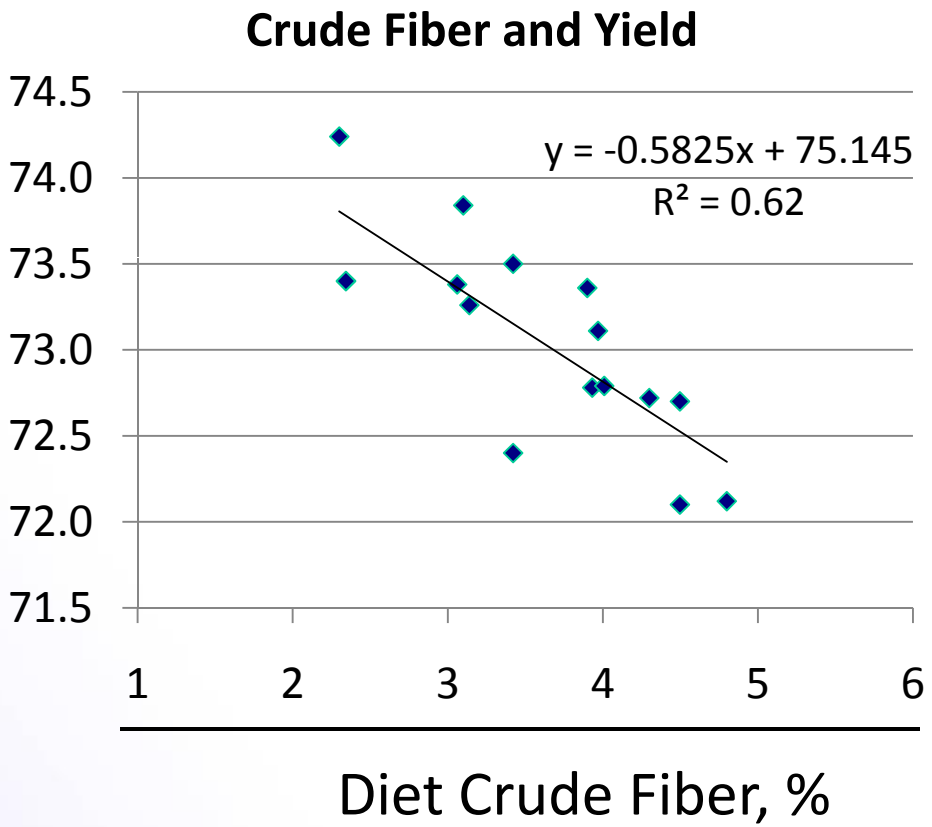
Effect of wheat midds and choice white grease on income over feed cost



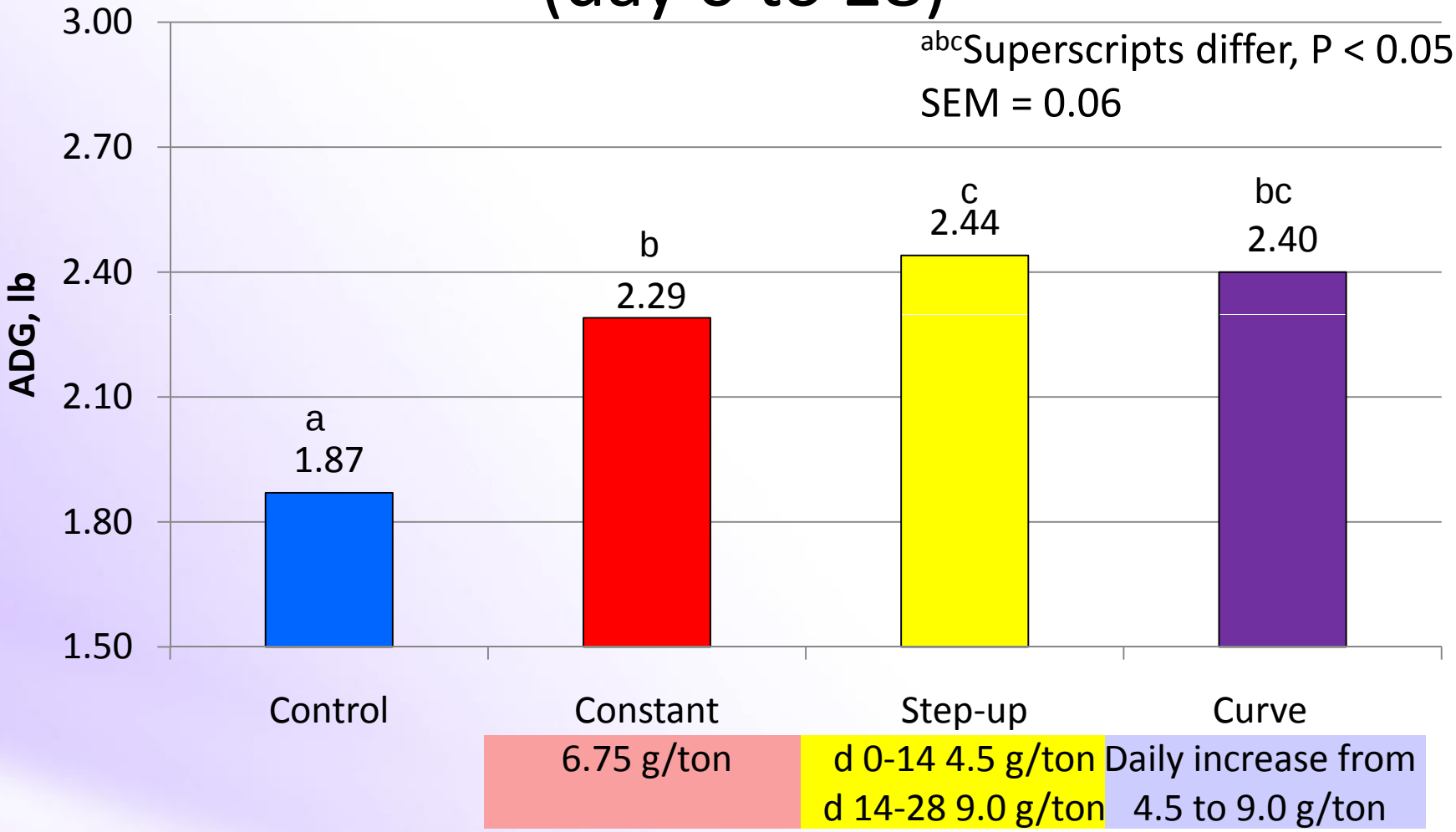
Barnes et al., 2010

Dietary fiber fraction and carcass yield correlations (3 Exp. with DDGS & Midds)





Effect of Paylean Feeding Program on ADG (day 0 to 28)



Ying et al., 2011

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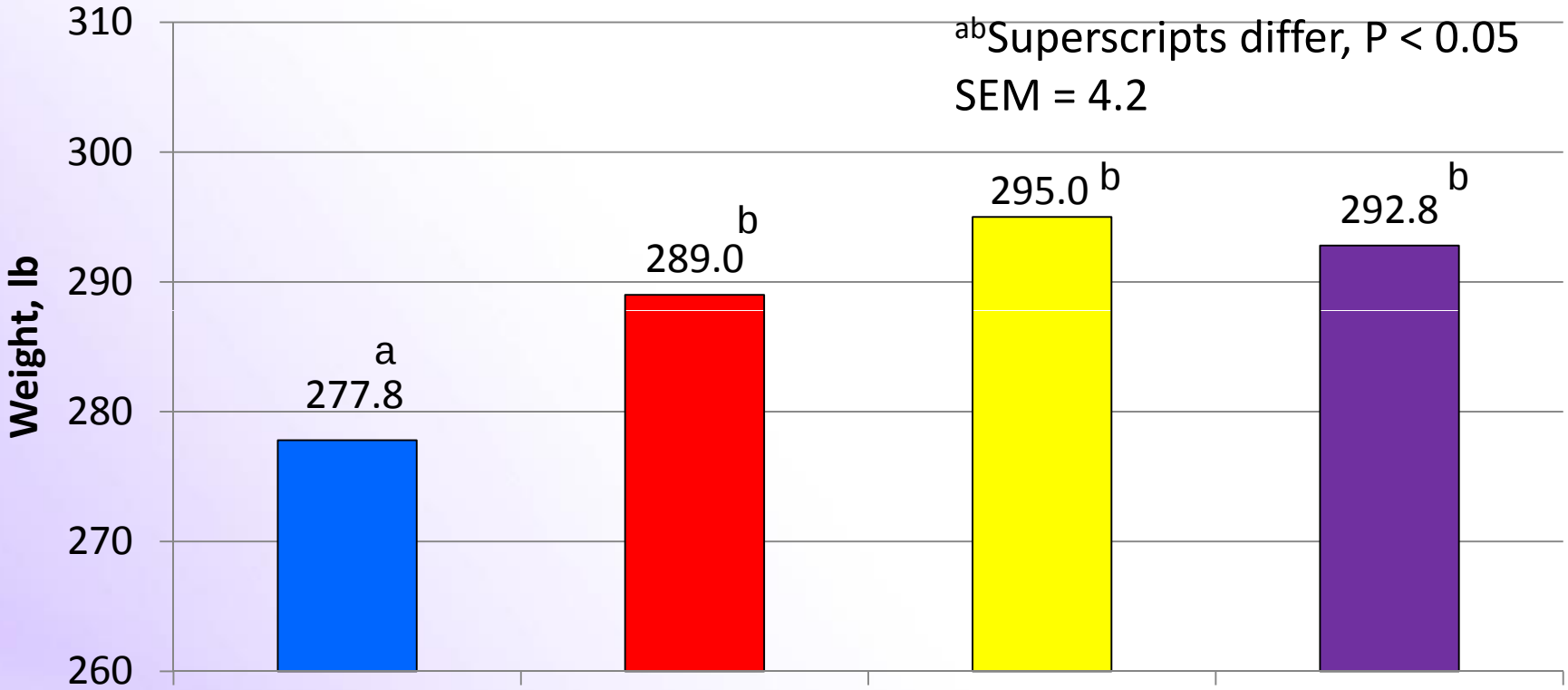
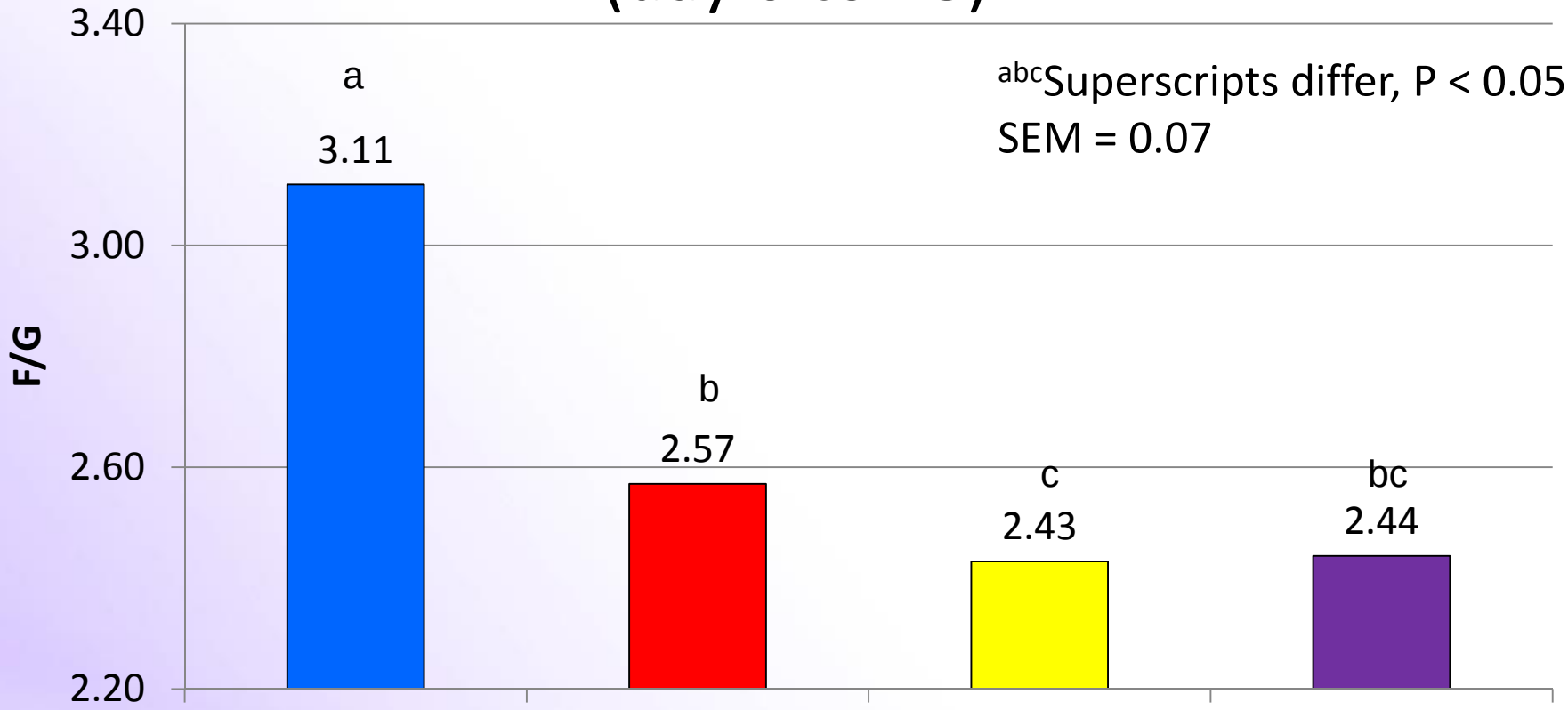
Effect of Paylean Feeding Program on Final BW (day 28)



Ying et al., 2011

Effect of Paylean Feeding Program on F/G (day 0 to 28)



Ying et al., 2011

Mixing Pigs Prior Market

Objective – What is the economic cost of mixing the light weight pigs on multi barn sites to reduce number of empty days?

J - SIX ENTERPRISES LIVESTOCK DIVISION

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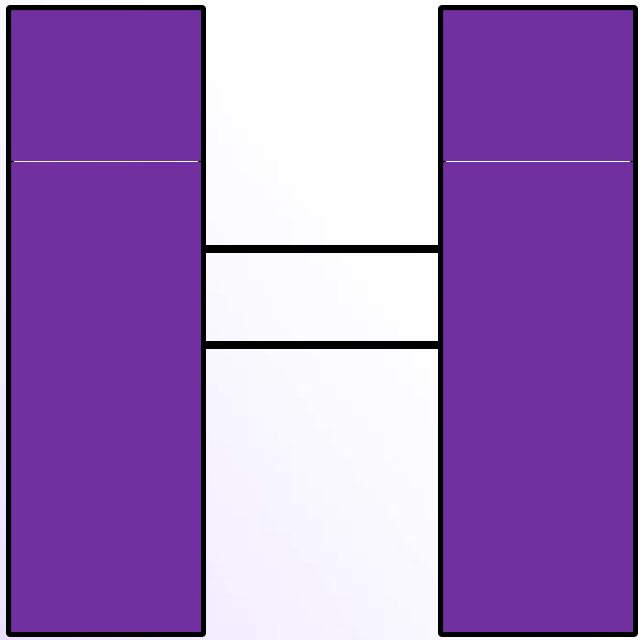
Barn Unloading Strategies

Barn 1 Barn 2



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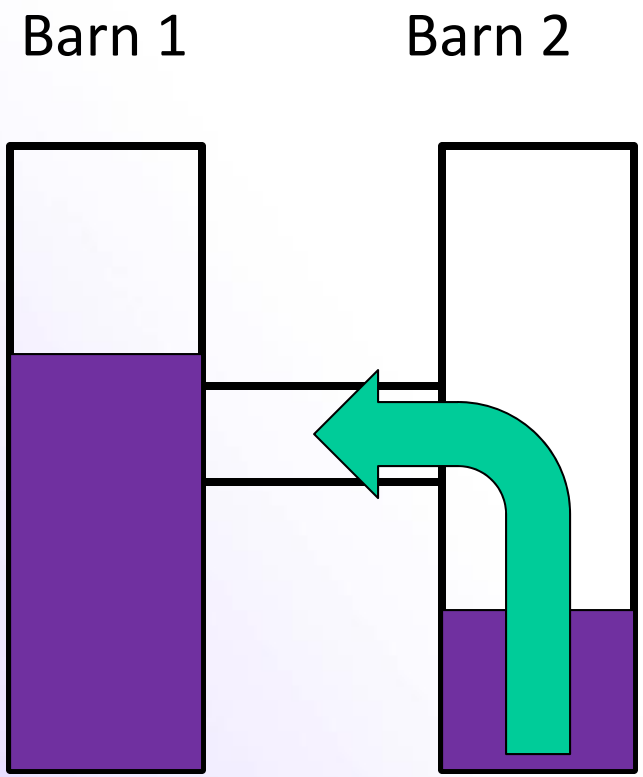
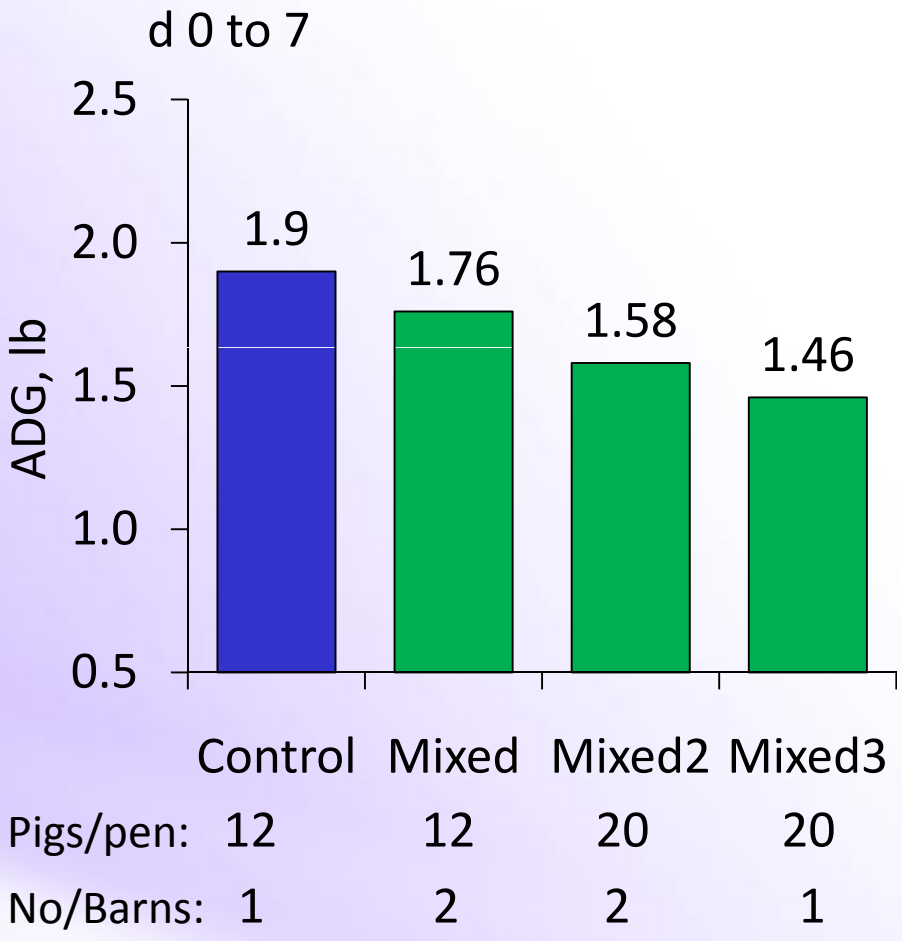
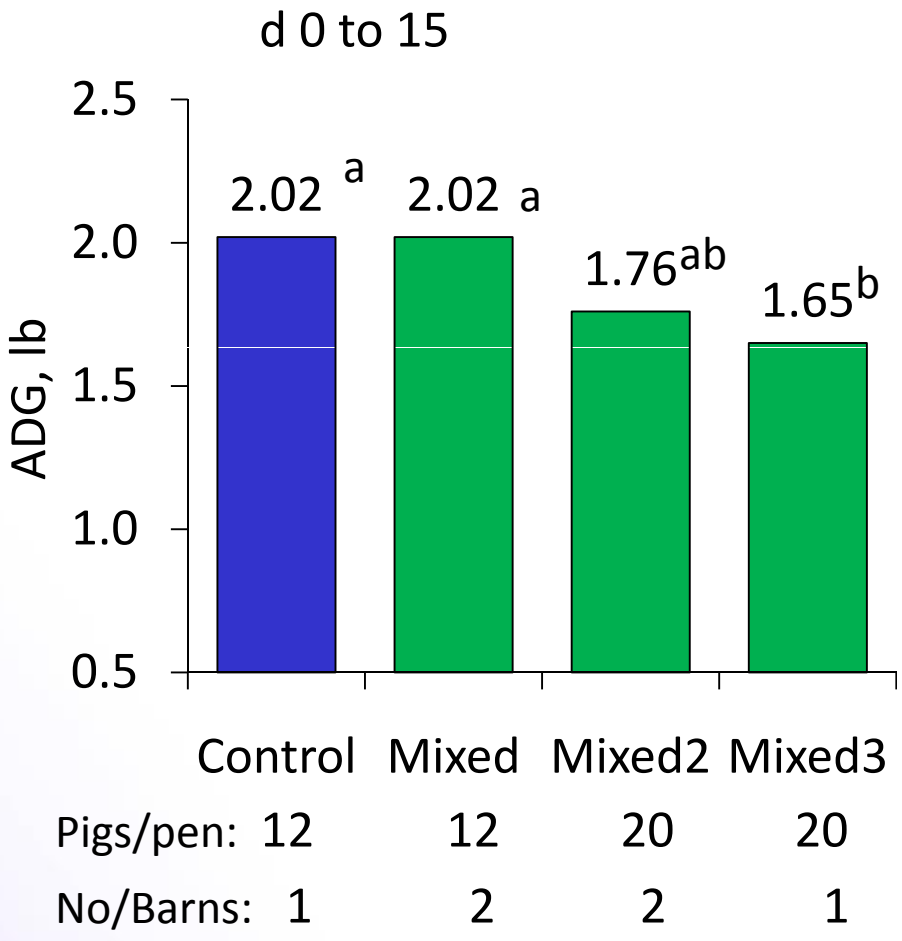
Barn Unloading Strategies



Effect of Mixing Pigs at 260 lb on ADG Exp 1

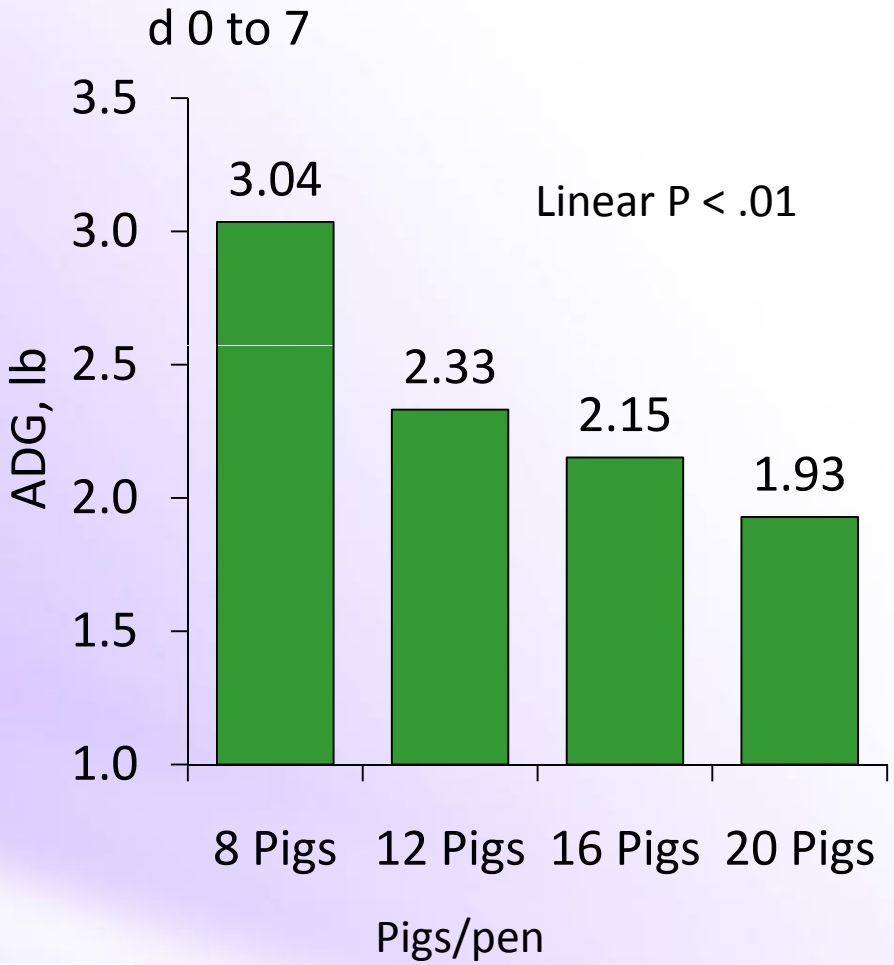


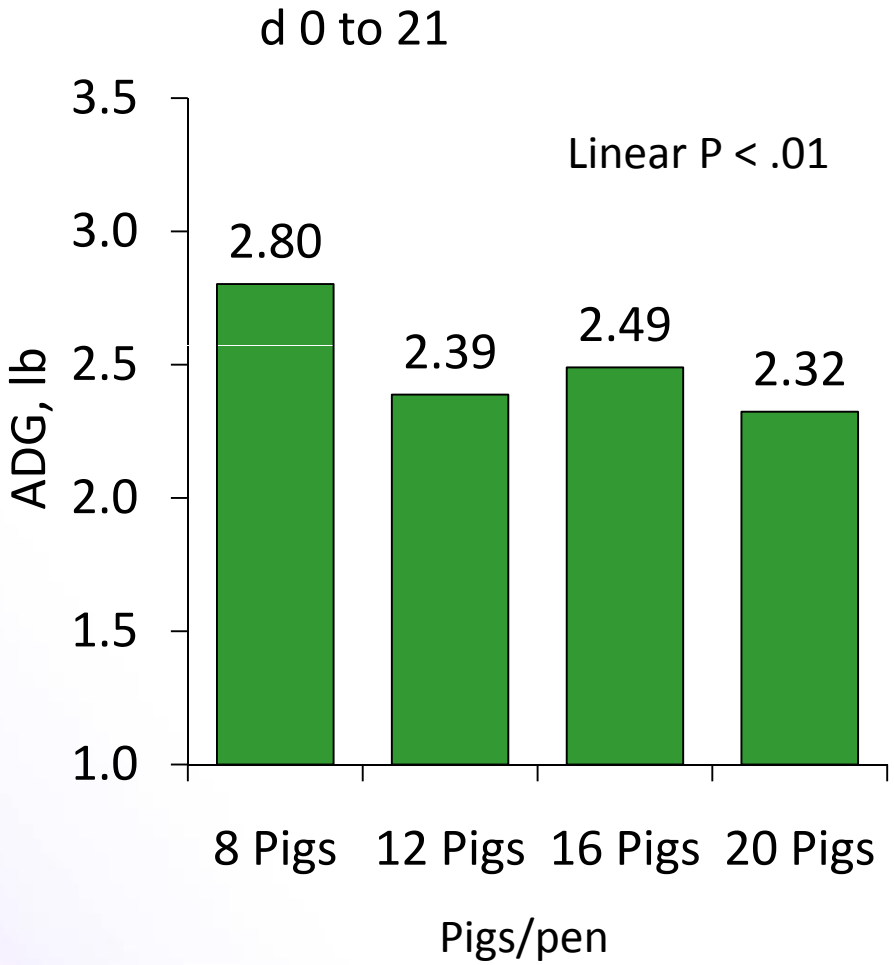


Potter et al., 2010

Effect of Number of Pigs per Pen when Mixing Gilts and Feeding Paylean

Effect of Number of Pigs per Pen when Mixing Gilts and Feeding Paylean at 258 lb on ADG





Potter et al., 2011

J-SIX ENTERPRISES LIVESTOCK DIVISION

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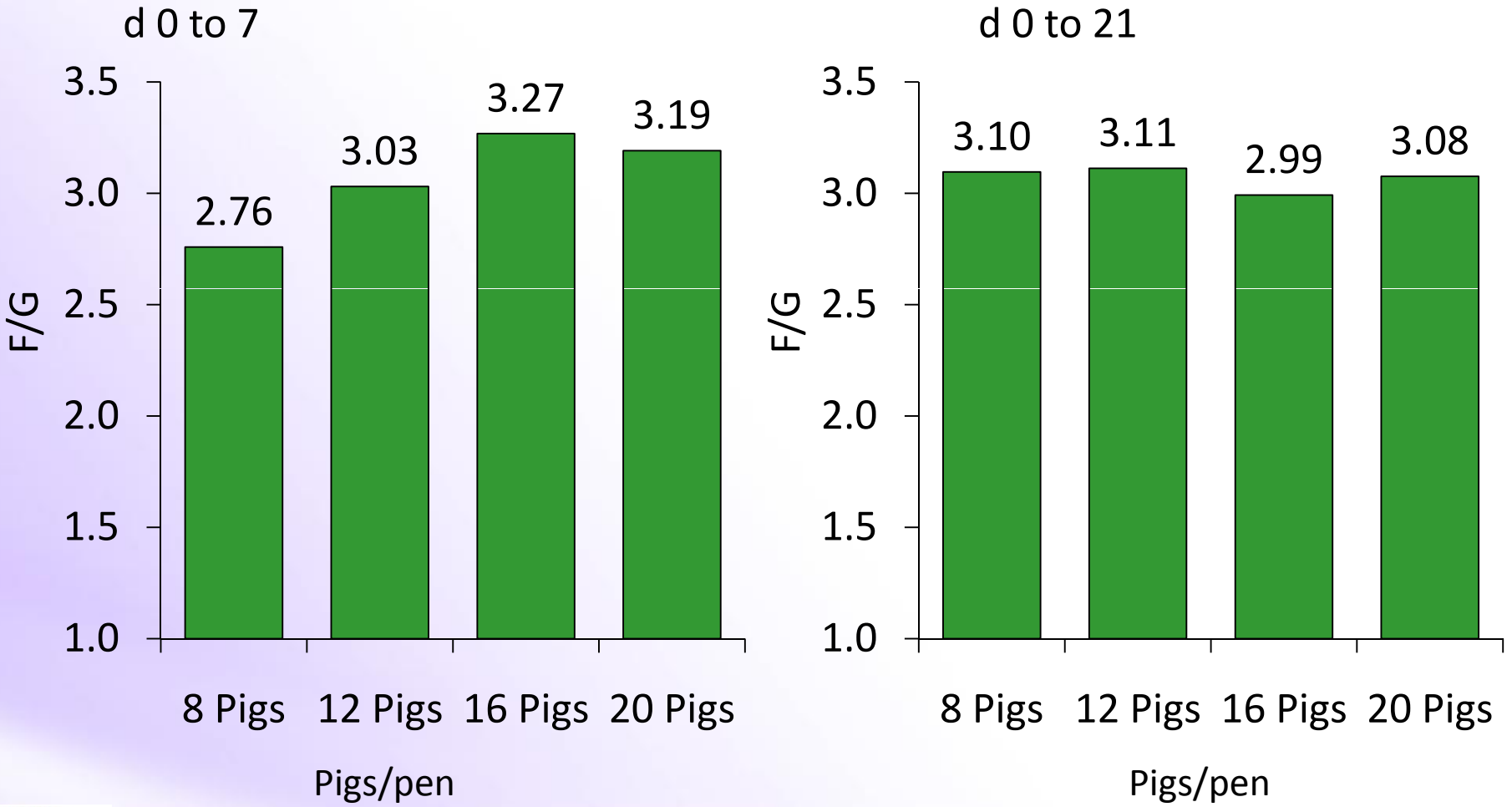
Effect of Number of Pigs per Pen when Mixing Gilts and Feeding Paylean at 258 lb on F/G



Potter et al., 2011

Increased Income Over Feed ($/pig) Compared to Selling the Gilts at 258 lb to Triumph $60/cwt Base price – Feed $240/ton

	Stocking density, pigs per pen			
Day	8 Pigs	12 Pigs	16 Pigs	20 Pigs
d 7	5.16	3.85	3.27	2.87
d 14	8.56	7.48	7.32	7.11
d 21	8.51	7.62	8.67	8.13

Increased Income Over Feed Compared ($/pig) to Selling the Gilts at 258 lb to Triumph $80/cwt Base price – Feed $170/ton

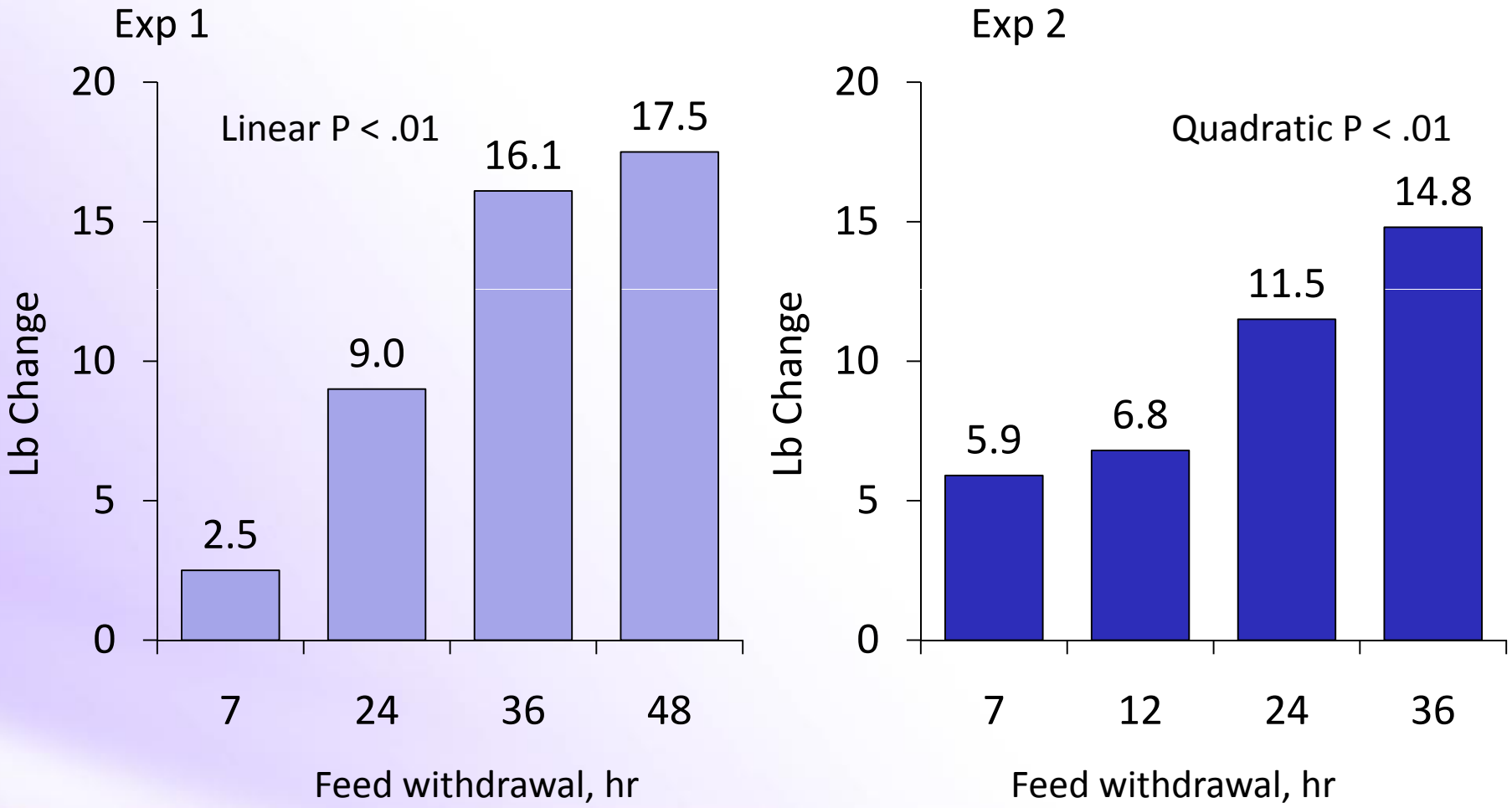
	Stocking density, pigs per pen			
Day	8 Pigs	12 Pigs	16 Pigs	20 Pigs
d 7	10.38	7.93	7.12	6.35
d 14	19.13	16.45	16.08	15.51
d 21	23.70	20.60	21.95	20.77

Caution: These results do not apply to continuous flow “marketing barns”

- Production data from a continuous flow “marketing barn”:
  - Avg days = 14.11,
  - ADFI = 7.2 lb/day,
  - ADG = 0.06 lb/day,
  - FG = 128.7,
  - Feed cost / head over 14 days = **$8.65**
- Only production data collected from a continuous flow site that we have seen

Feed Withdrawal Prior to Slaughter

Effect of Feed Withdrawal on Live Weight Reduction 48 hr prior to Slaughter



Frobose et al., 2010

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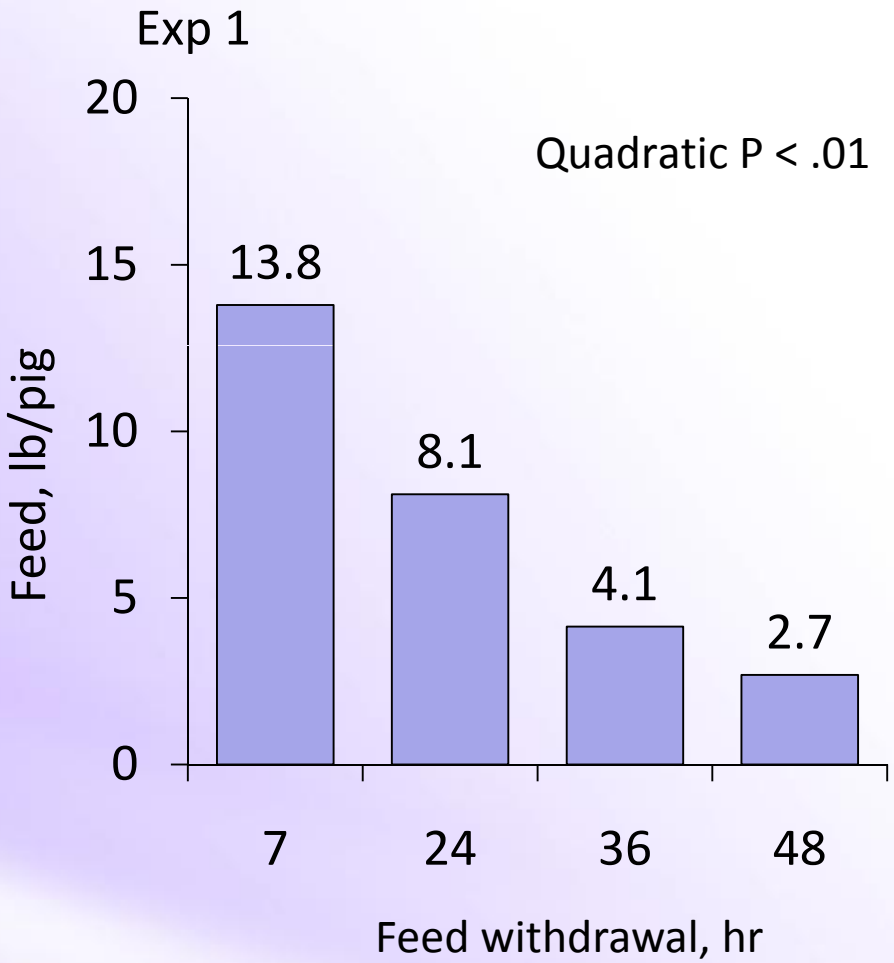
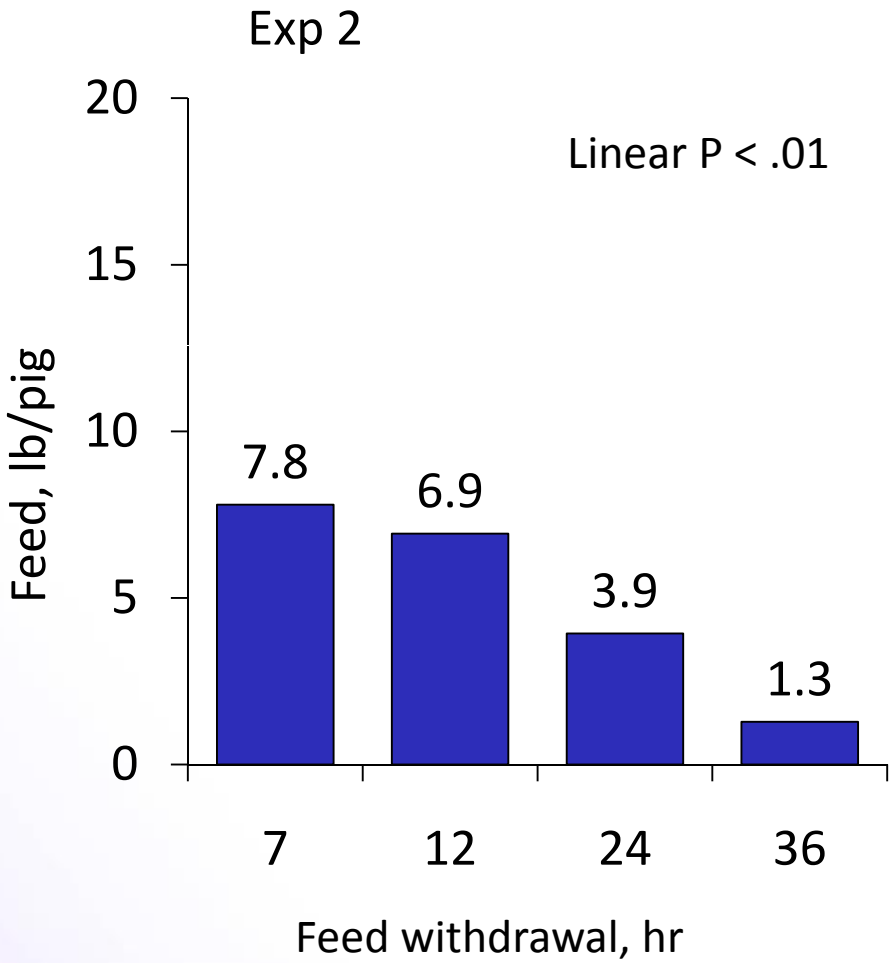
Effect of Feed Withdrawal on Feed Intake per Pig





Frobose et al., 2010

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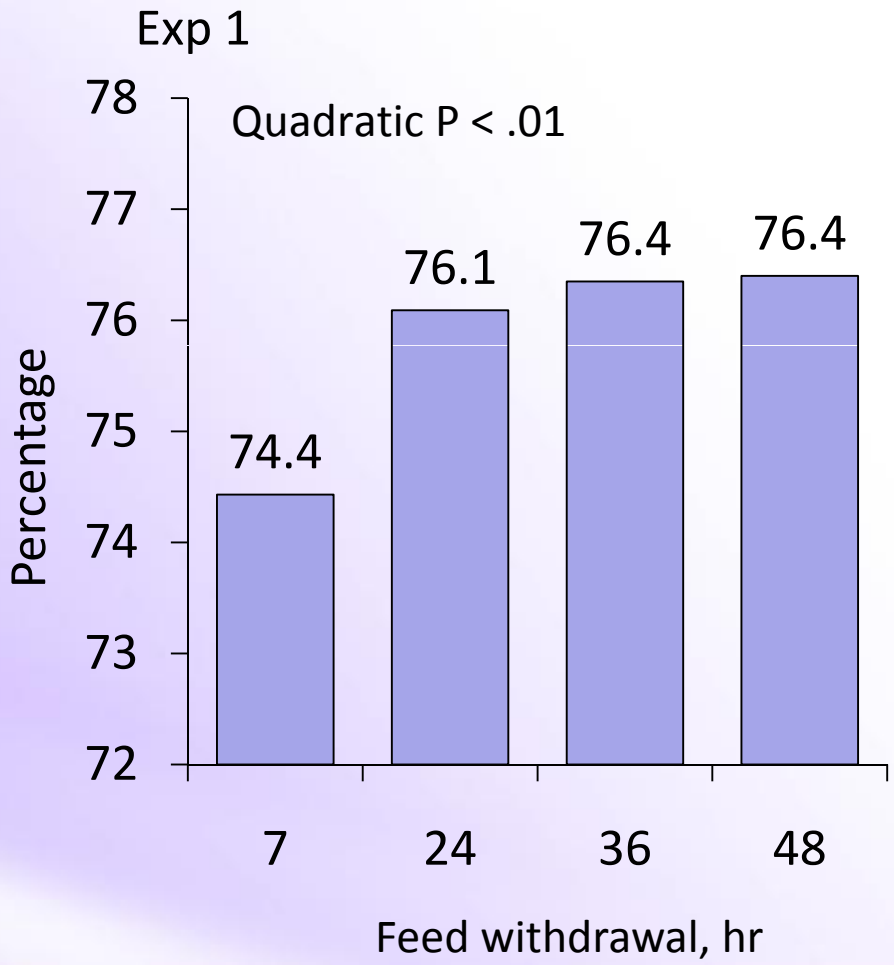
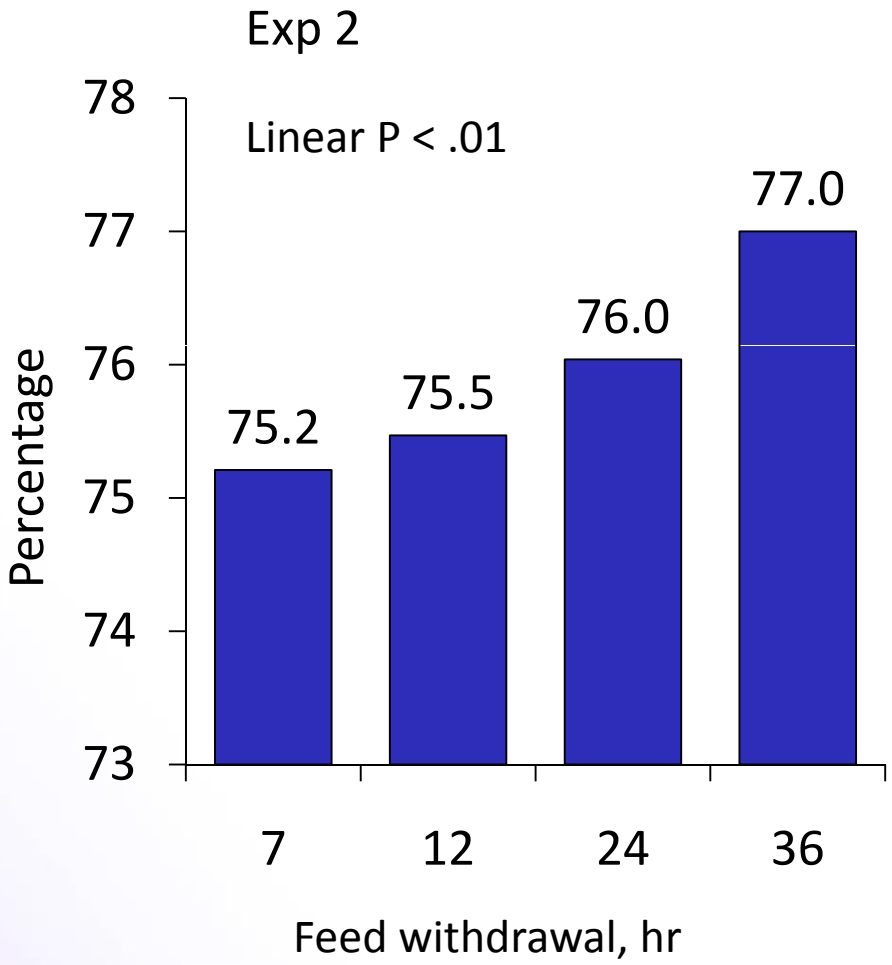
Effect of Feed Withdrawal on Yield





Frobose et al., 2010

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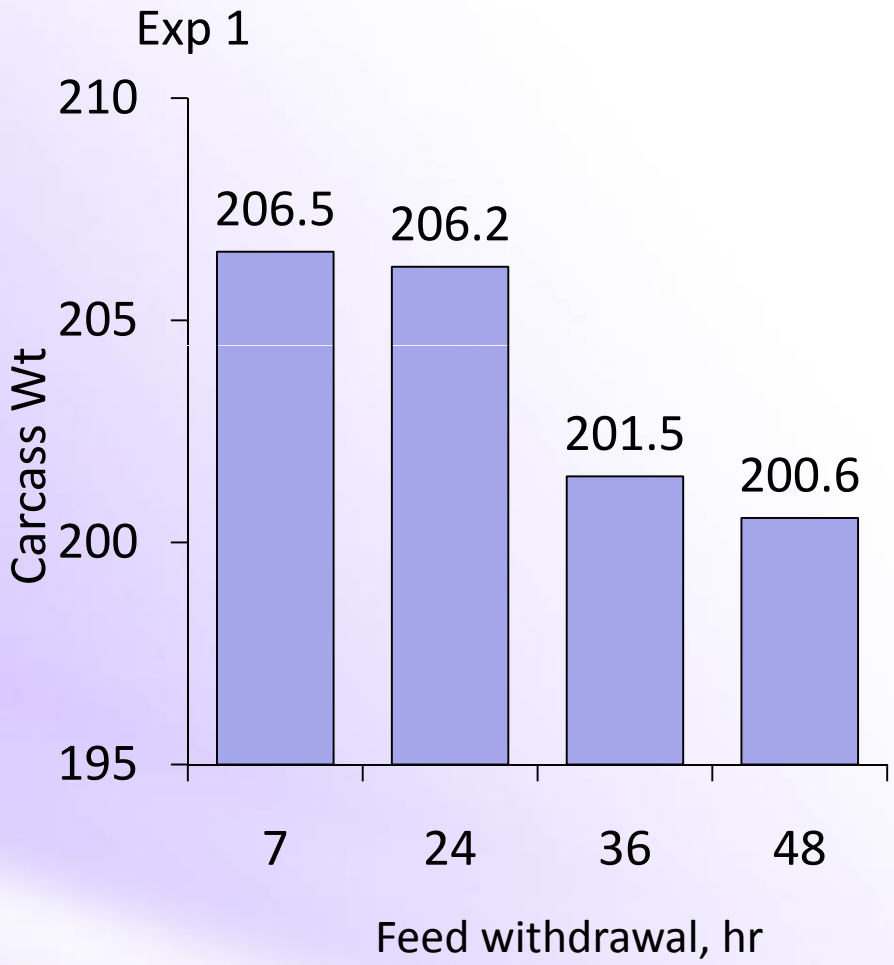
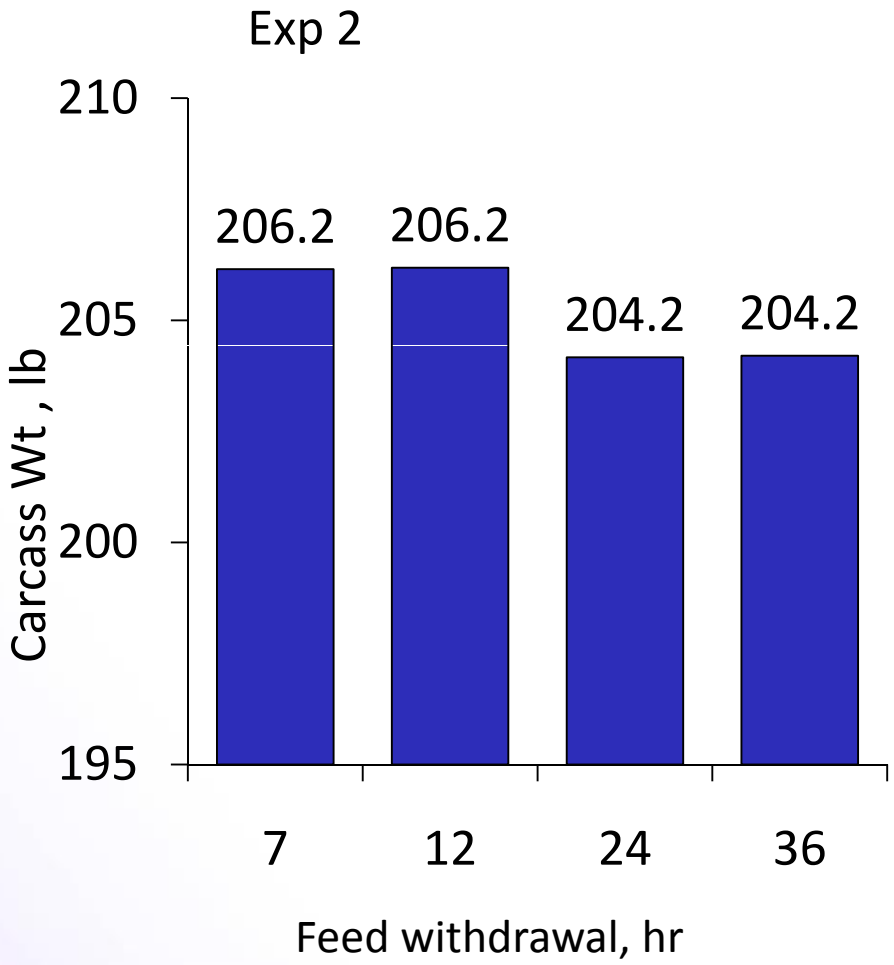
Effect of Feed Withdrawal on Carcass Weight

Based on 280 lb live weight at 48 hr prior to slaughter





Frobose et al., 2010

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Marketing Strategy – **Barn messages**

- Marketing starts when pigs are placed
  - Don’t sort by weight when filling barns / consider mixed sex pens
- Get the heavy pigs on the first load!
  - Pigs over 340 lb “fall off the cliff” in terms of penalty.
  - Pull pigs from ALL pens when topping
    - Increases growth of other pigs in pen
    - Avoids problems of only pulling pigs near the door
- Hold lightest pigs for last cleanout load
  - A surprising number of lighter pigs make it onto the initial load from a barn

Marketing Strategy – **Management messages**

- Review opportunity cost curves – www.ksuswine.org
  - Have changed dramatically since summer
  - Are different among packers
- Review strategies for managing sites and rooms
  - Consider moving and mixing pigs to reduce empty days
    - Impact on growth rate will be greatest in the first 7 days
  - Avoid continuous flow “marketing barns”
  - Extend duration of marketing rather than leave sites empty

Feeder Research

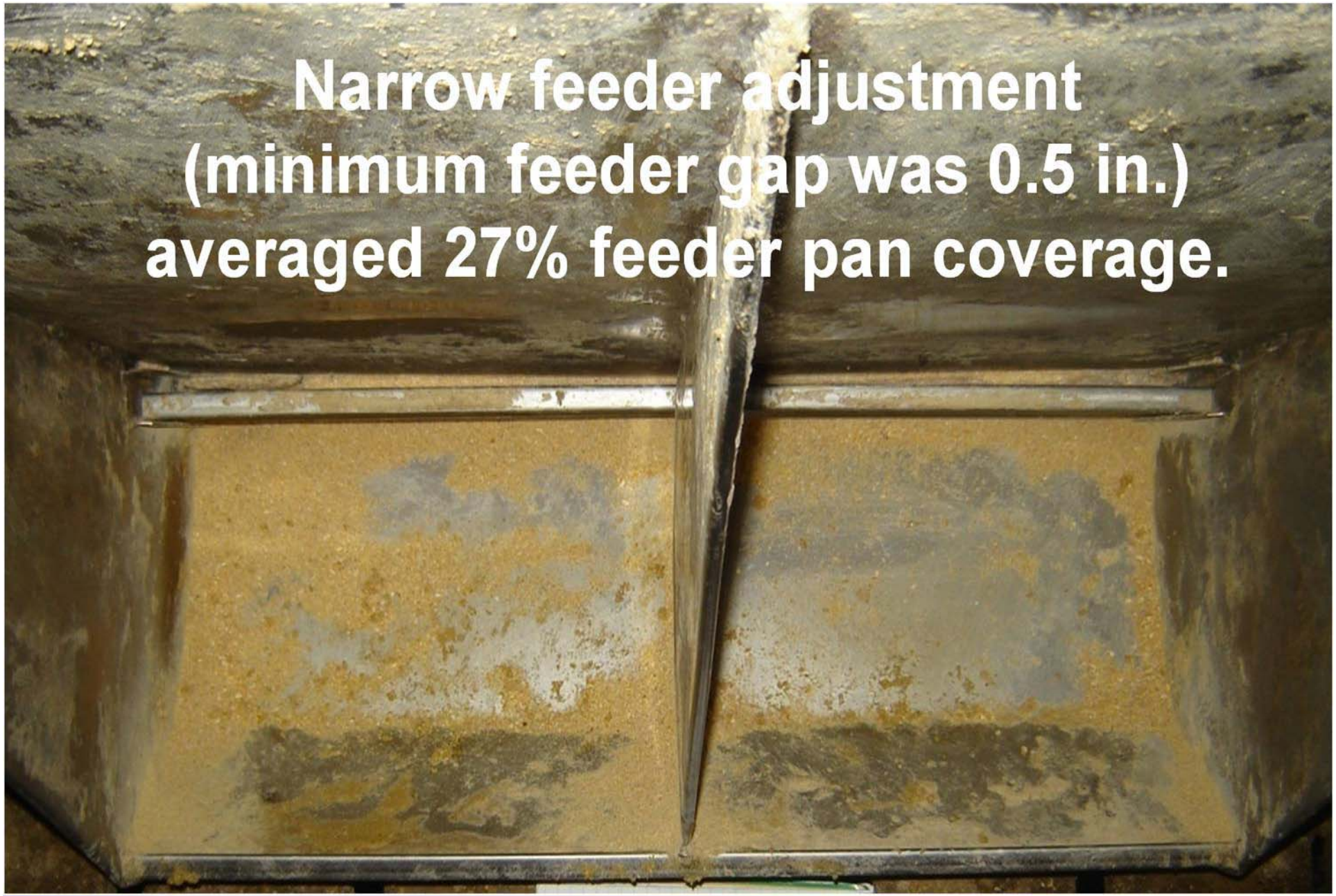
Wet Dry vs Dry Feeders

Trial	ADG	FG	Lean	IOFC*
1	Pos	No Diff	--	--
2	Pos	Neg	Neg	Neg
3	Pos	Neg	Neg	Neg
4	Pos	Pos	--	Pos (Live Wt Basis)
5	Pos	No Diff	Neg	Neg
6	Pos	No Diff	Neg	Pos
7	Pos	No Diff	No Diff	No Diff
8	Pos	Neg	Neg	Neg

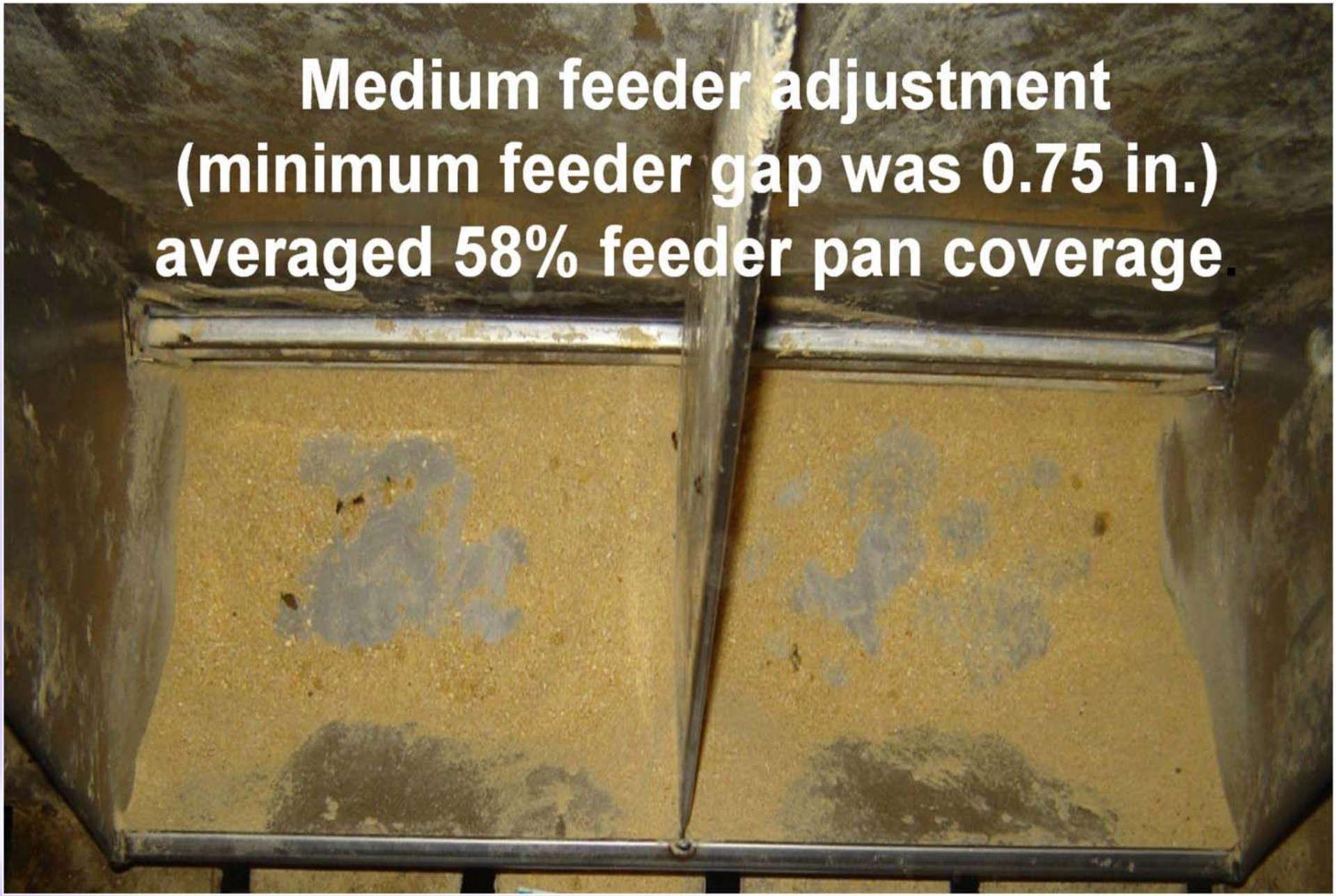
Feeder Type Influence on Feeding Behavior in Late Finishing

Item	Wet-dry	Dry	SEM	*P* <
No. visits to feeder	4.2[a]	11.2[b]	3.1	0.06
Mean length of visit, min.	5.0	4.4	0.9	---
Total time at feeder, min.	15.8[a]	34.1[b]	4.3	0.01

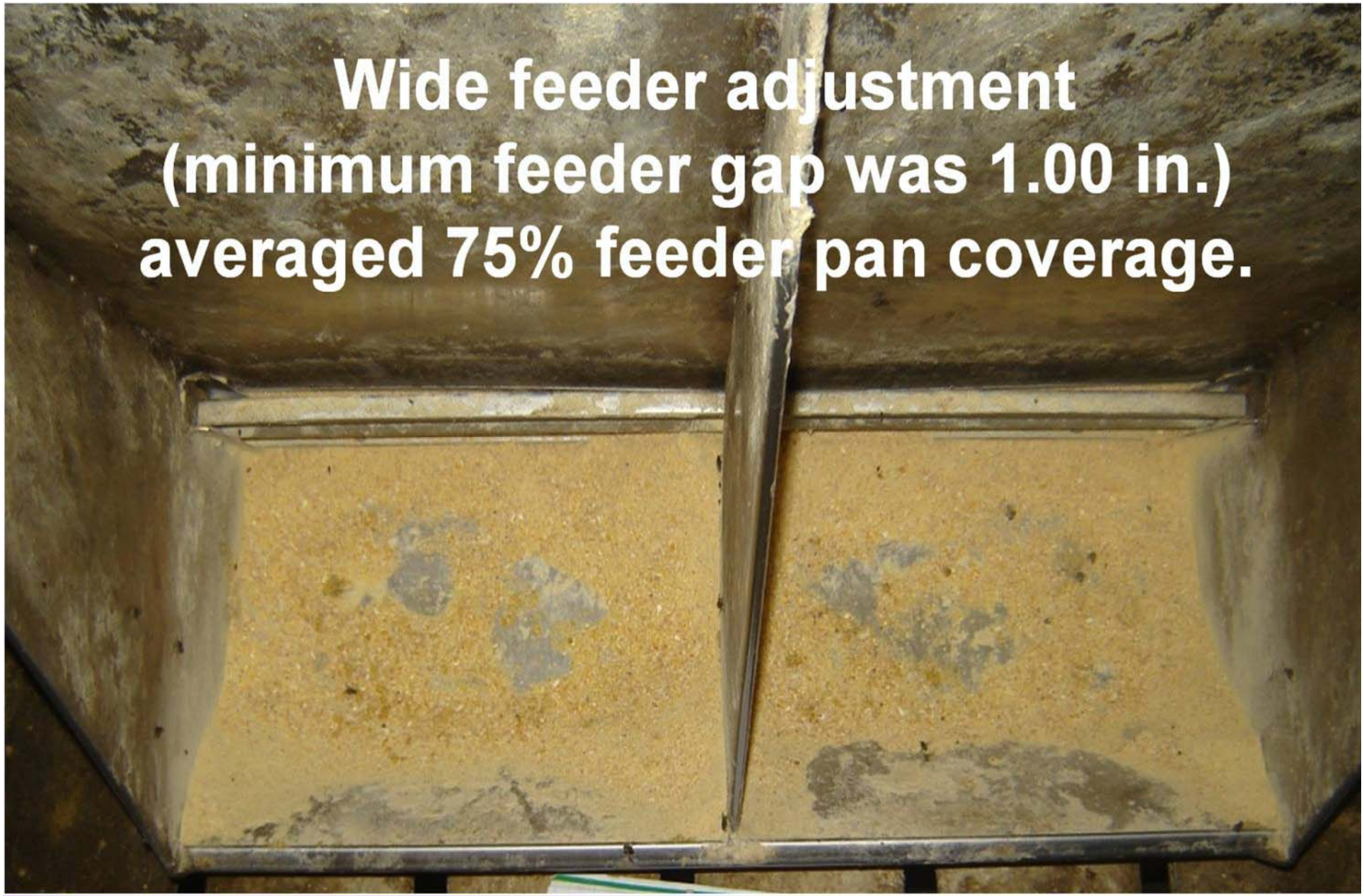
Bergstrom et al., 2011



Myers et al., 2010



Myers et al., 2010



Myers et al., 2010

Item	Feeder adjustment (min gap opening) 0.50”	0.75”	1.00”	SED
d 0 to 28 (90 to 150 lb)				
ADG, lb	1.93[a]	2.15[b]	2.11[b]	0.08
ADFI, lb	4.89[a]	5.51[b]	5.59[b]	0.24
F/G	2.54	2.58	2.64	0.08
d 28 to 58 (150 to 220 lb)				
ADG, lb	2.37	2.40	2.42	0.08
ADFI, lb	6.90[a]	7.44[b]	7.37[b]	0.24
F/G	2.92[a]	3.10[b]	3.05[ab]	0.08
d 58 to 89 (220 to 265 lb)				
ADG, lb	1.51	1.46	1.50	0.08
ADFI, lb	5.22	5.33	5.45	0.24
F/G	3.47[a]	3.65[b]	3.64[b]	0.08
Pan Coverage score, %	28[a]	58[b]	75[c]	7.6

[a,b] Means without a common superscript differ ($P < 0.05$).

No influence on carcass characteristics

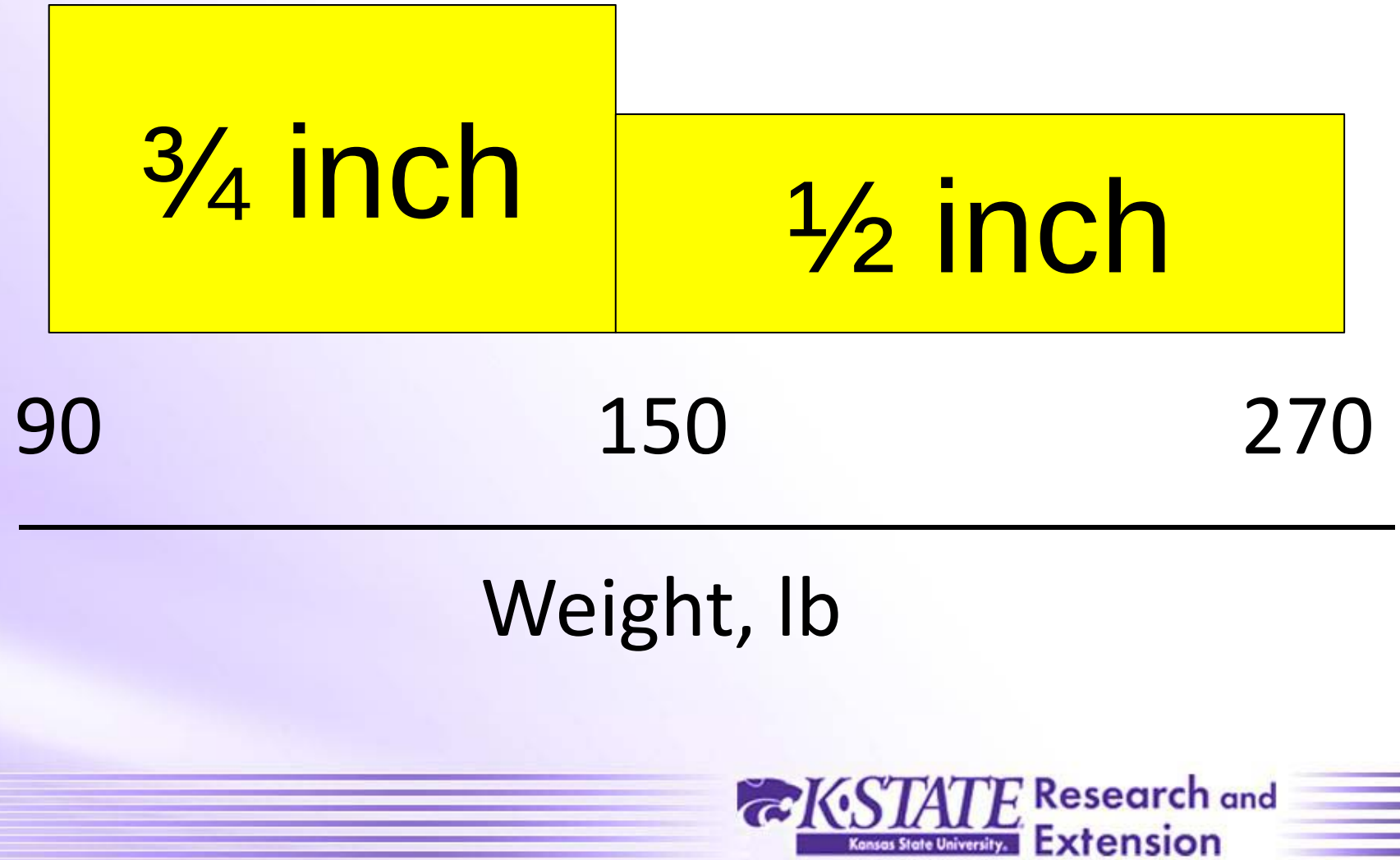
Myers et al., 2010

Influence of feeder adjustment on income over feed cost

	Feeder adjustment (min gap opening)		
IOFC	0.50”	0.75”	1.00”
d 0 to 28 (90 to 150 lb)	14.70	16.21	15.45
d 28 to 58 (150 to 220 lb)	17.96	17.03	17.51
d 58 to 89 (220 to 265 lb)	10.46	9.41	9.73
d 0 to 89	43.11	42.65	42.69
IOFC Max	**44.63**		

IOFC calculated as $0.50/lb of gain minus feed cost per pig. Diet cost used were $.09/lb (d0 to 28), $.085 (d28 to 58), and $0.08 (d 58 to 89).

Feeder Adjustment Settings



Finisher summary

- Maximize DDGS use at current economics
  - Watch L-lysine HCl usage and tryptophan level
  - Be careful with using too high of fiber (ex. Midds w DDGS)
- Paylean feeding method is less important than use
  - Adjust dose or duration
- Mixing pigs on site to extend feeding period is quite profitable if facilities allow it
- Feed withdrawal decreases feed cost and increases yield, but lowers carcass weight and profit if over 24 h
- Adjust feeders

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Thank you!

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