KSU Swine Day 2012

K-STATE
Research and Extension

K-STATE
Research and Extension

Knowledge for Life

KSU Swine Day 2012

Morning – Sows (Vitamin E, carnitine, chromium)

Vitamin D

Feed additives

Afternoon – Nursery (soy hulls, wheat middlings)

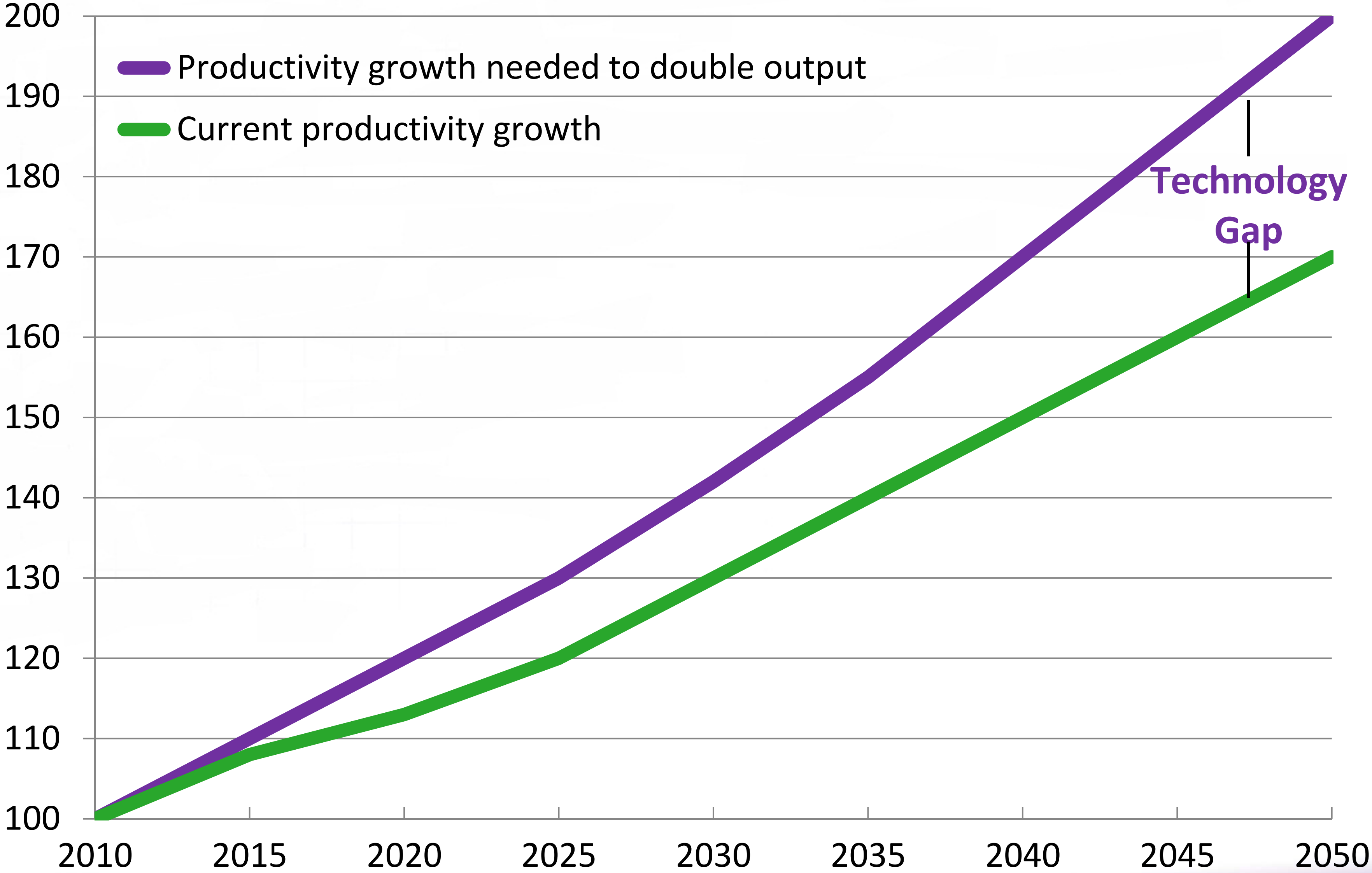
Grow-finish

- Wheat
- DDGS (low vs high oil)
- Feed processing
- Improvest
- Marketing

K·STATE Research and Extension

Knowledge for Life

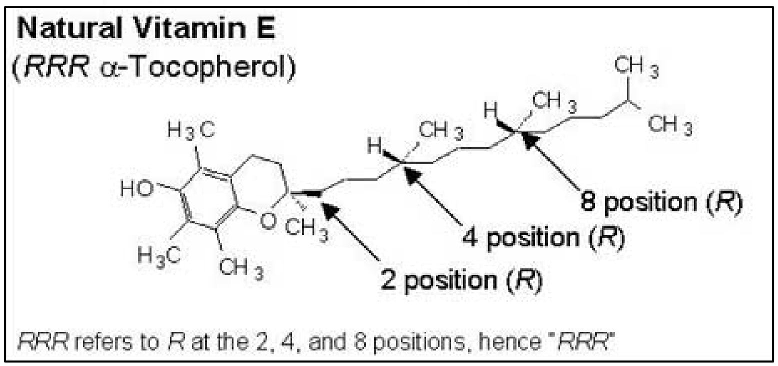
Agricultural Output 2010 = 100

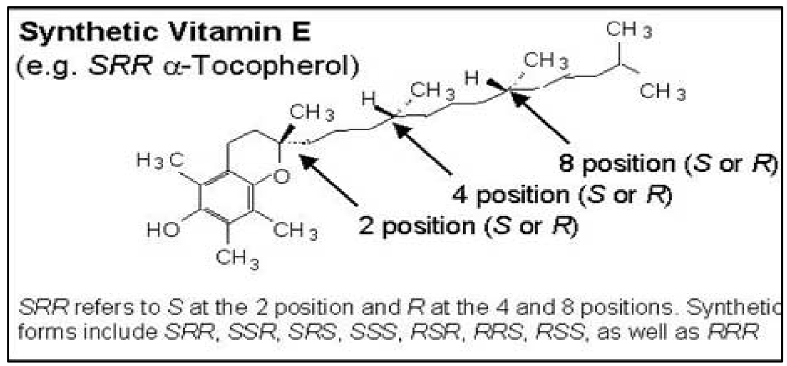


Effects of dietary vitamin E level and source on sow, milk, and piglet levels of α-tocopherol

Introduction

- Vitamin E is a generic term for 4 tocopherols and 4 tocotrienols that serve as antioxidants in the lipid components of animal and plant tissues.
- The α-tocopherol form is the most bioactive form for animals and has eight stereoisomers.
- The biological activities of these 8 stereoisomers range from 25 to 100% (Blatt et al., 2004), with the RRR- α-tocopherol form being the most bioactive.





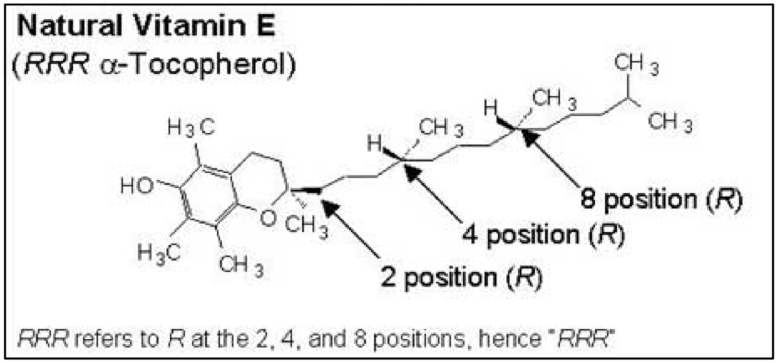
http://lpi.oregonstate.edu/ss01/attp.html

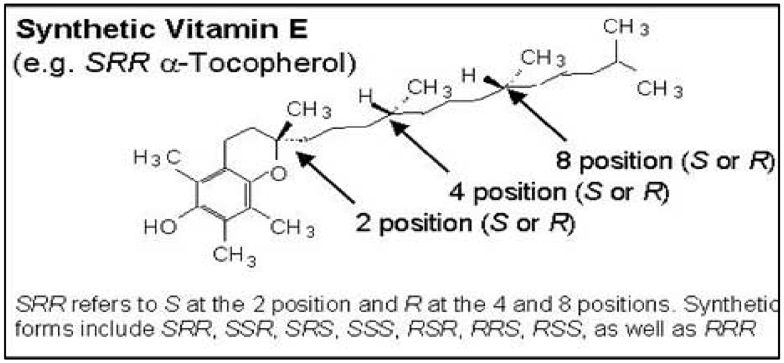
K·STATE Research and Extension

Knowledge for Life

Introduction

- Common to utilize the esterified forms of a-tocopherol to prolong stability
- Two common sources of vitamin E:
  - Natural vitamin E (RRR- α-tocopherol acetate or d-α-tocopherol acetate) is compromised only of the RRR stereoisomer.
  - Synthetic vitamin E (all rac-α-tocopherol acetate or dl-α-tocopherol acetate) is a combination of the 8 stereoisomers



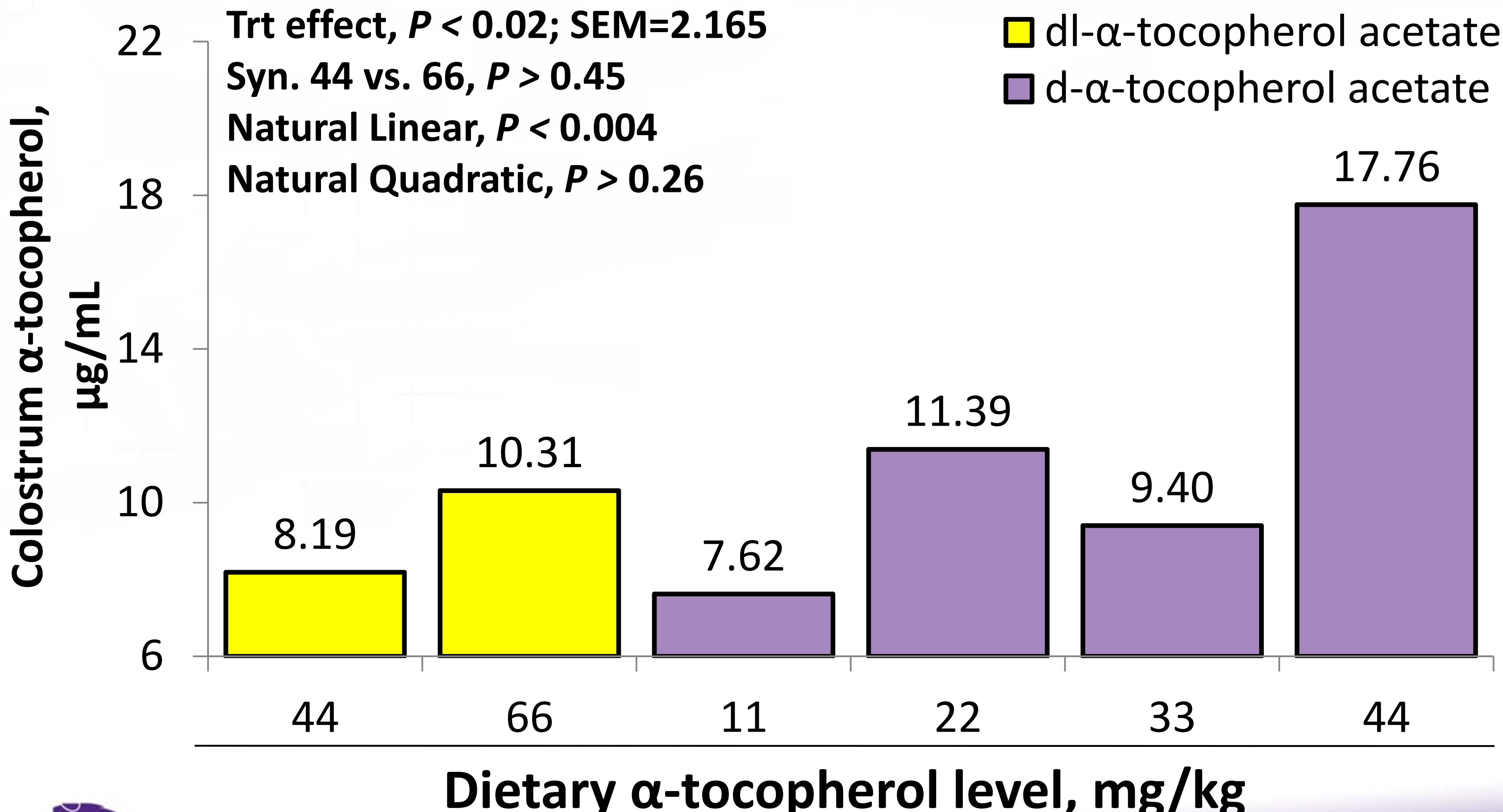


http://lpi.oregonstate.edu/ss01/attp.html

Objective

- The objectives of this study are to:
  1) determine the level of α-tocopherol in plasma, milk, and piglet body tissues when supplied from synthetic or natural vitamin E.
  2) estimate the bioavailability of natural vitamin E relative to synthetic vitamin E when included in diets containing a large proportion of DDGS.

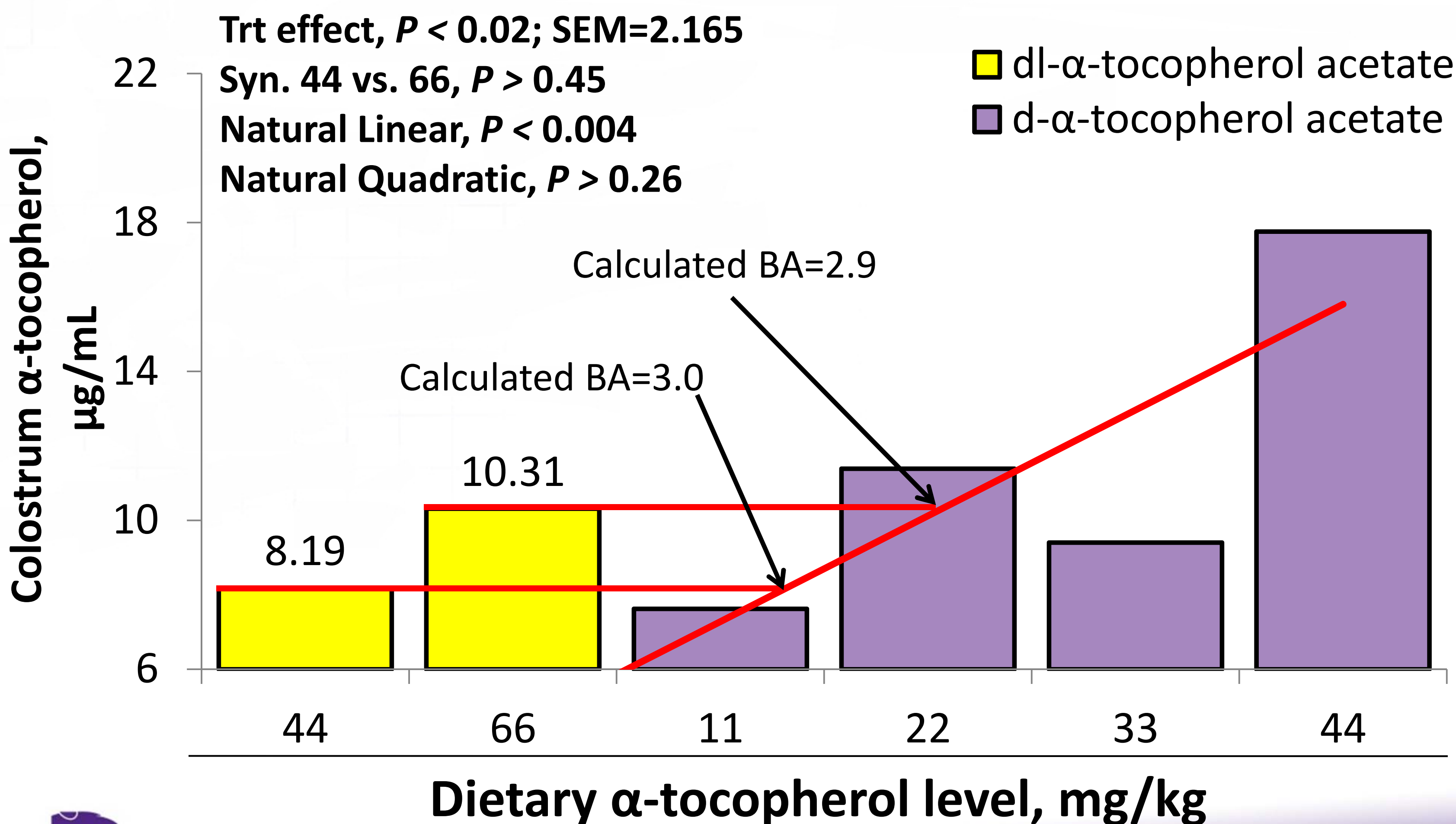
Effects of dietary vitamin E level and source on sow colostrum α-tocopherol levels



K·STATE Research and Extension

Knowledge for Life

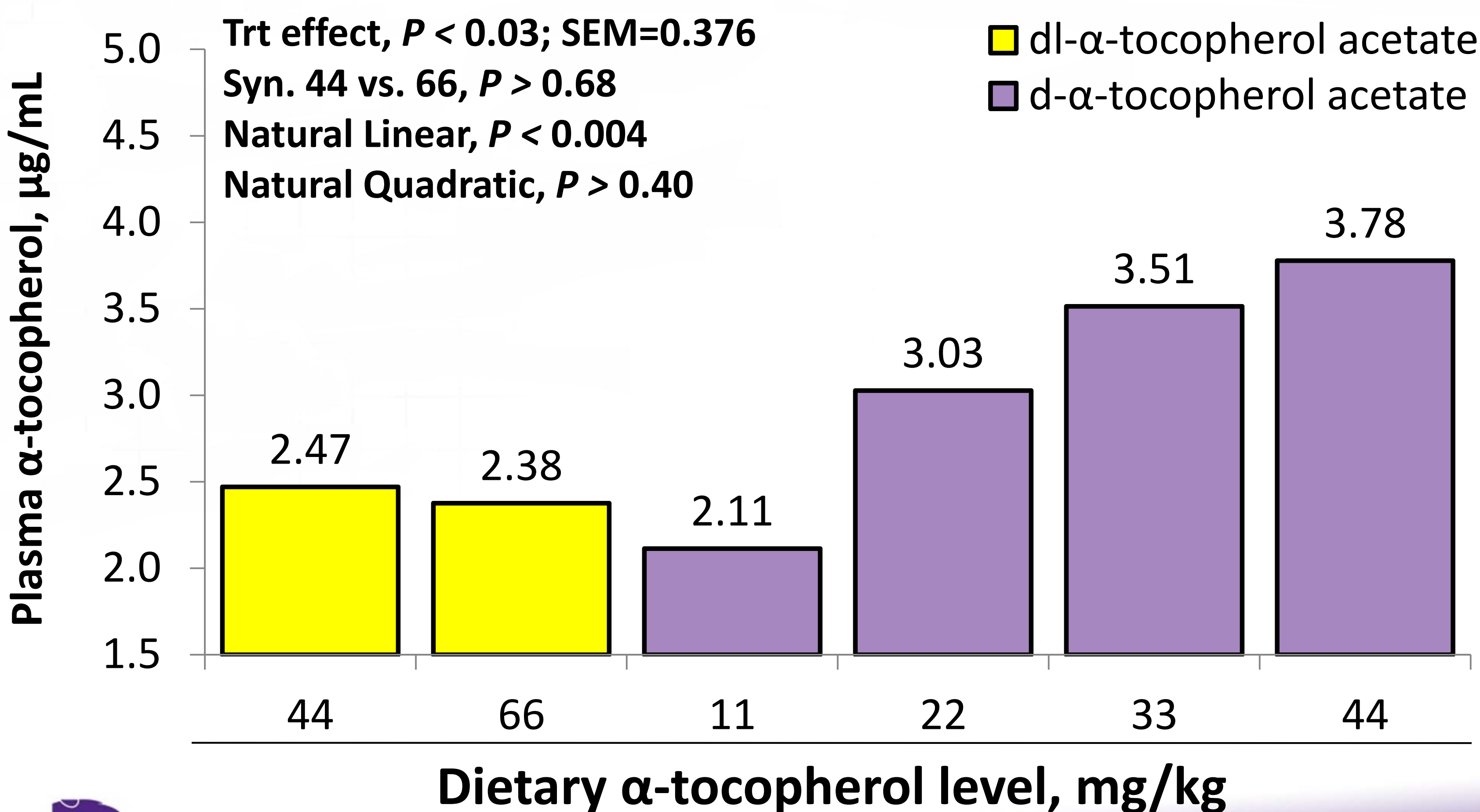
Effects of dietary vitamin E level and source on sow colostrum α-tocopherol levels



K·STATE Research and Extension

Knowledge for Life

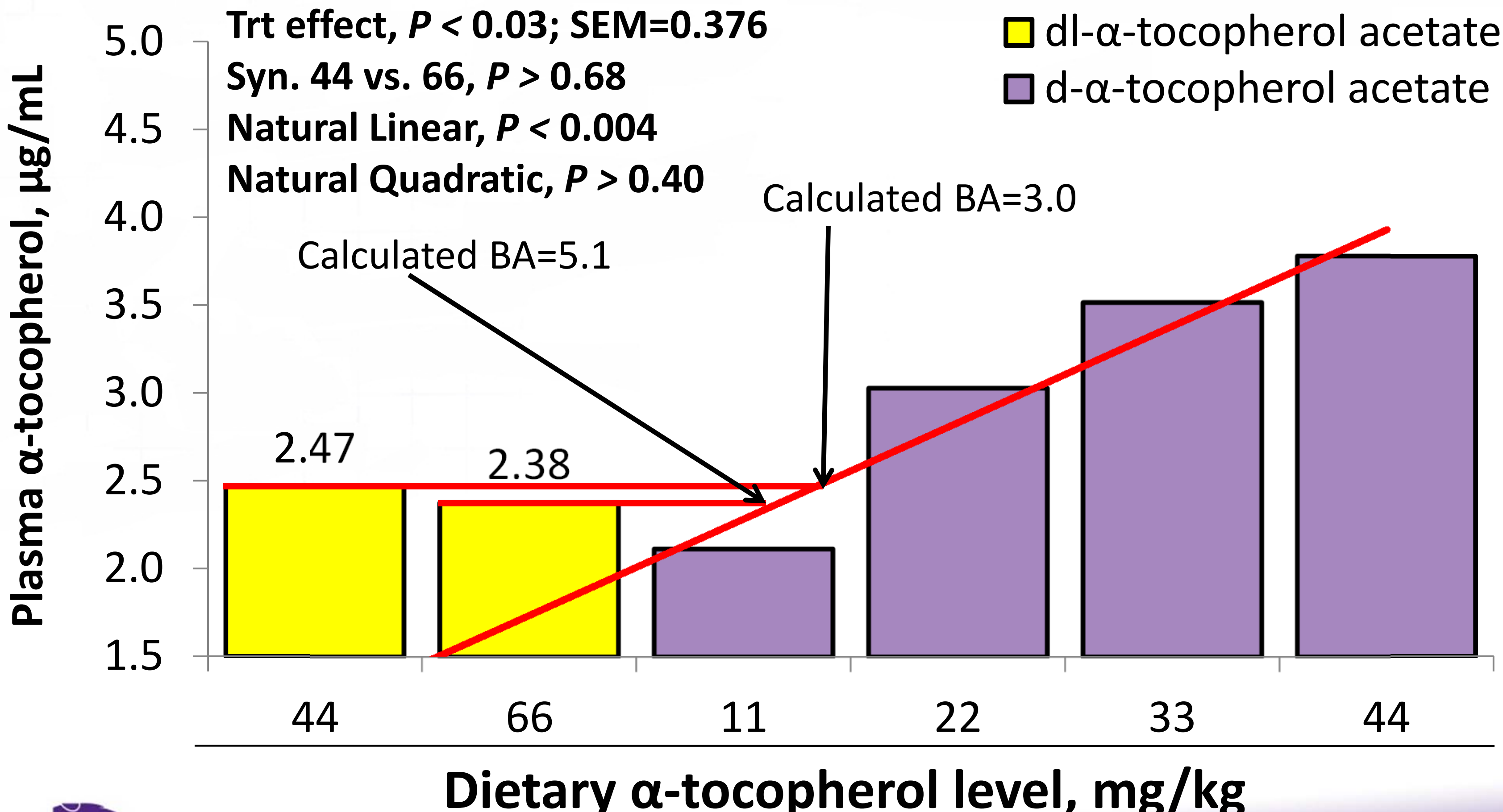
Effects of dietary vitamin E level and source on piglet plasma α-tocopherol levels at weaning



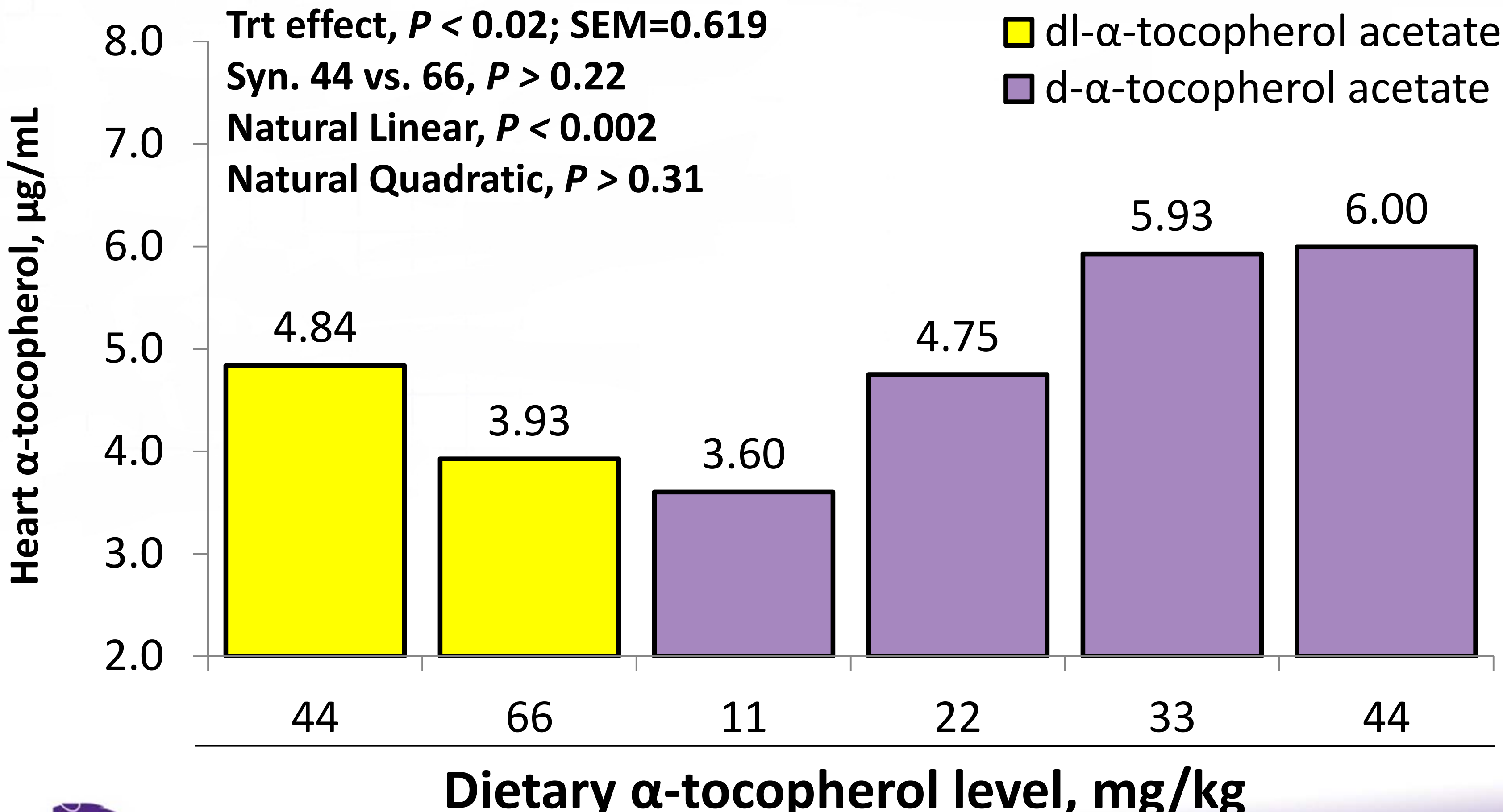
K·STATE Research and Extension

Knowledge for Life

Effects of dietary vitamin E level and source on piglet plasma α-tocopherol levels at weaning



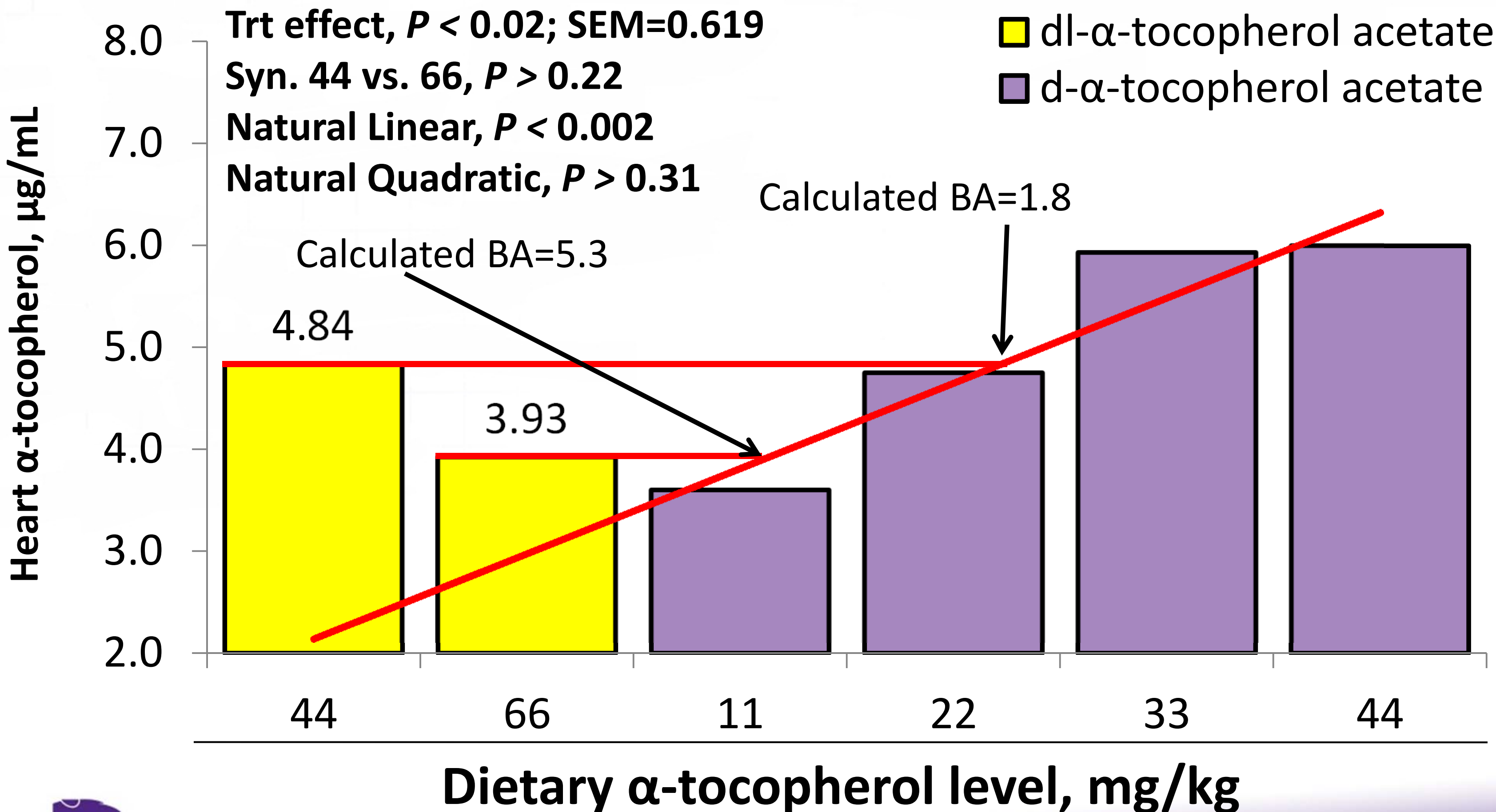
Effects of dietary vitamin E level and source on piglet heart α-tocopherol levels at weaning



K·STATE Research and Extension

Knowledge for Life

Effects of dietary vitamin E level and source on piglet heart α-tocopherol levels at weaning



K·STATE Research and Extension

Knowledge for Life

Conclusions

- Treatment effects were not observed ($P > 0.10$) for lactation feed intake, piglet BW or BW gain, or sow BW measures.
- As Natural E increased in the diet, sow plasma, colostrum, milk, piglet plasma, and piglet heart concentrations of α-tocopherol increased (linear; $P < 0.03$).
- This study shows that the relative bioavailability for Natural E:Syn E varies depending on the response criteria but is greater than the potency of 1.36.

Effects of dietary L-carnitine and chromium picolinate on sow reproductive performance

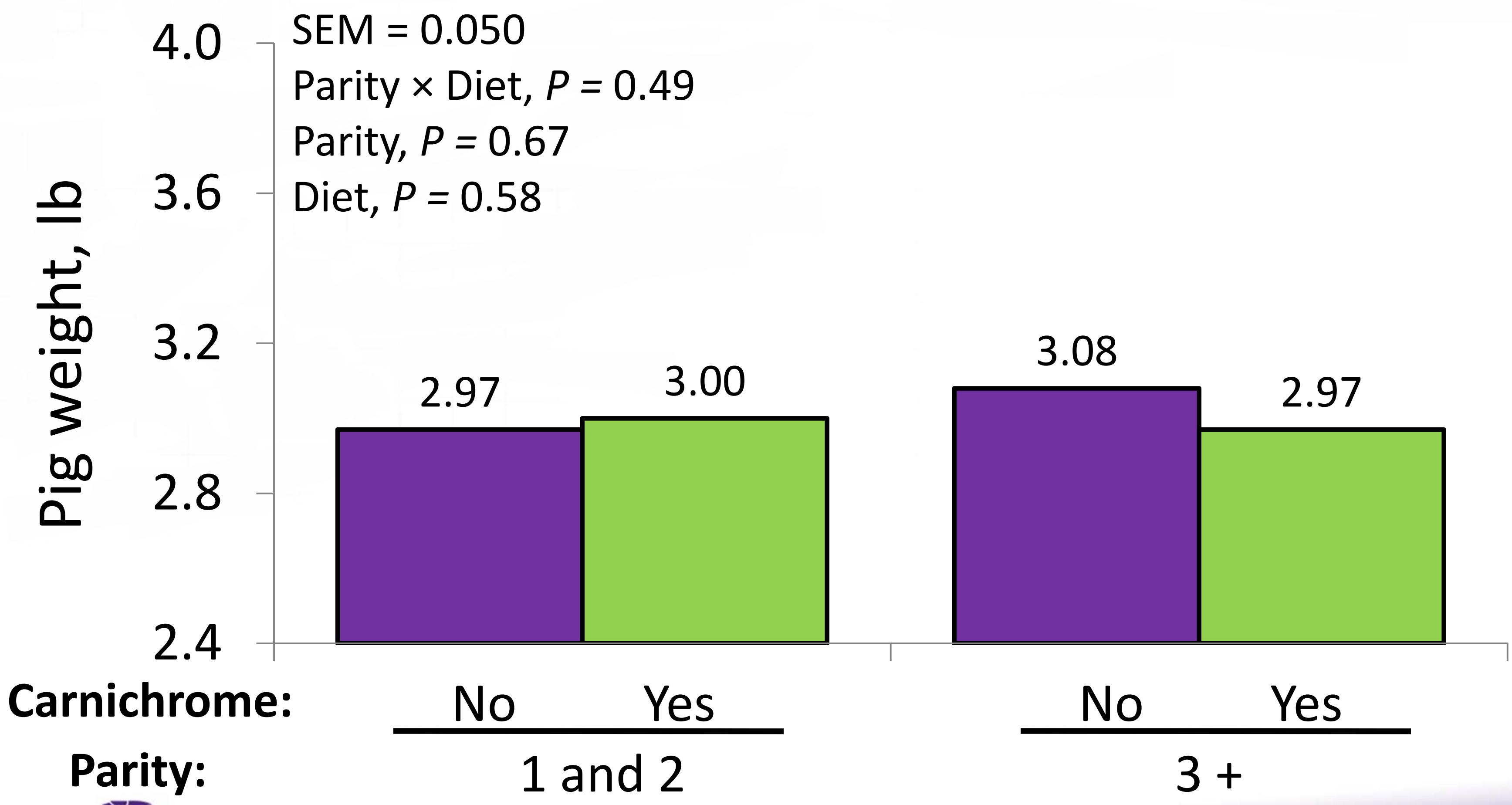
Introduction

- Adding L-carnitine to sow diets at 50 ppm been shown to:
  - Increase birth weight (Musser et al., 1999)
  - Increase litter size (Ramanau et al., 2004)
  - Increase conception rates (Real et al., 2008)
  - Improve nutrient utilization (Musser et al., 1999; Ramanau et al., 2004)
  - Increase plasma leptin concentrations (Woodworth et al., 2004)
  - Increase maternal IGF-I concentrations (Musser et al., 1999; Doberenz et al., 2006) and decrease mRNA for IGF-II in porcine embryonic muscle cells (Waylon et al., 2005)
- Adding chromium picolinate to sow diets has been shown to:
  - Increase litter size (Lindemann et al., 1995, 2004)
  - Improve efficiency of insulin (Lindemann et al., 1995)

Introduction

- The modes of actions for L-carnitine and chromium appear to be different; therefore, combining both may result in additive responses.
- Objective-To evaluate the effects of L-carnitine and chromium on sow feed utilization, as well as litter size, birth weight, and variation in birth weight on a commercial sow farm.

Effect of dietary Carnichrome on individual birth weights



K·STATE Research and Extension

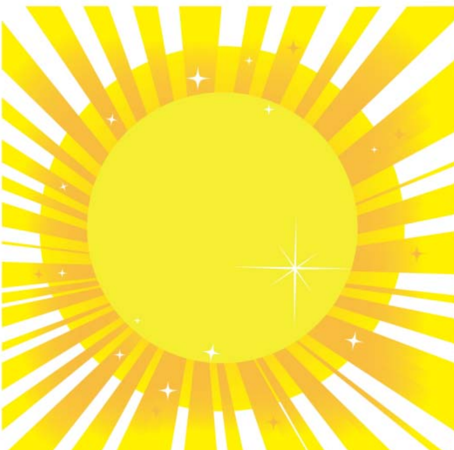
Knowledge for Life

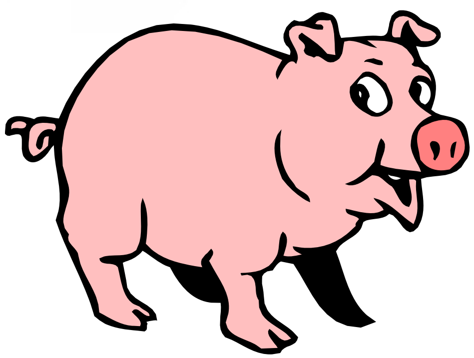
Conclusion

Feeding 25 ppm of carnitine and 200 ppb of chromium picolinate did not improve piglet birth weight or litter size.

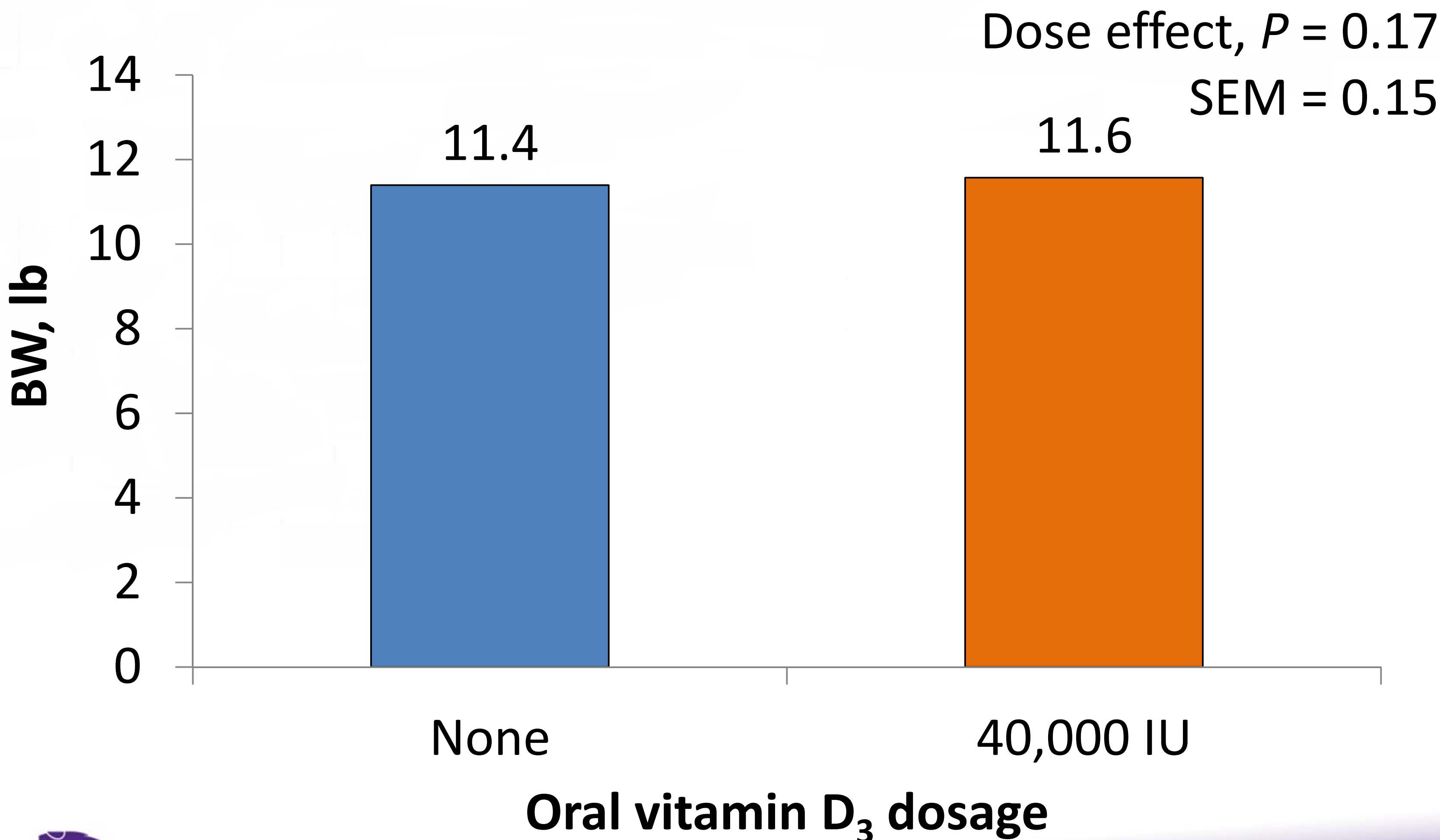
2012 Vitamin D Update

- Oral dose in farrowing
- Vitamin D_3 in nursery diet
- Vitamin D_3 in sow diet





Effect of oral vitamin D_3 dose on weaning weight

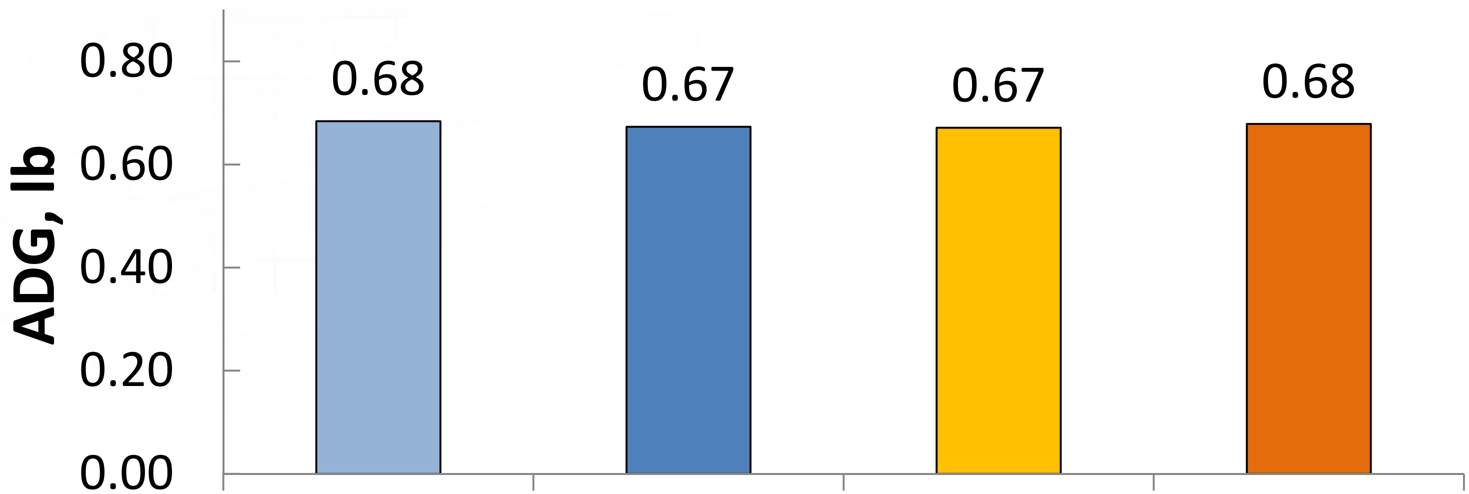


Flohr et al., 2012

Effects of supplemental vitamin D_3 by oral dose or in early nursery diets on nursery ADG (d 21 to 45)

Dose × diet interaction, *P* = 0.59
SEM = 0.018

Dose effect, *P* = 0.83
Diet effect, *P* = 0.92



Oral Dosage:	None	None	40,000 IU	40,000 IU
Dietary D_3, IU/kg:	1,378	13,780	1,378	13,780

K·STATE Research and Extension

Flohr et al., 2012

Knowledge for Life

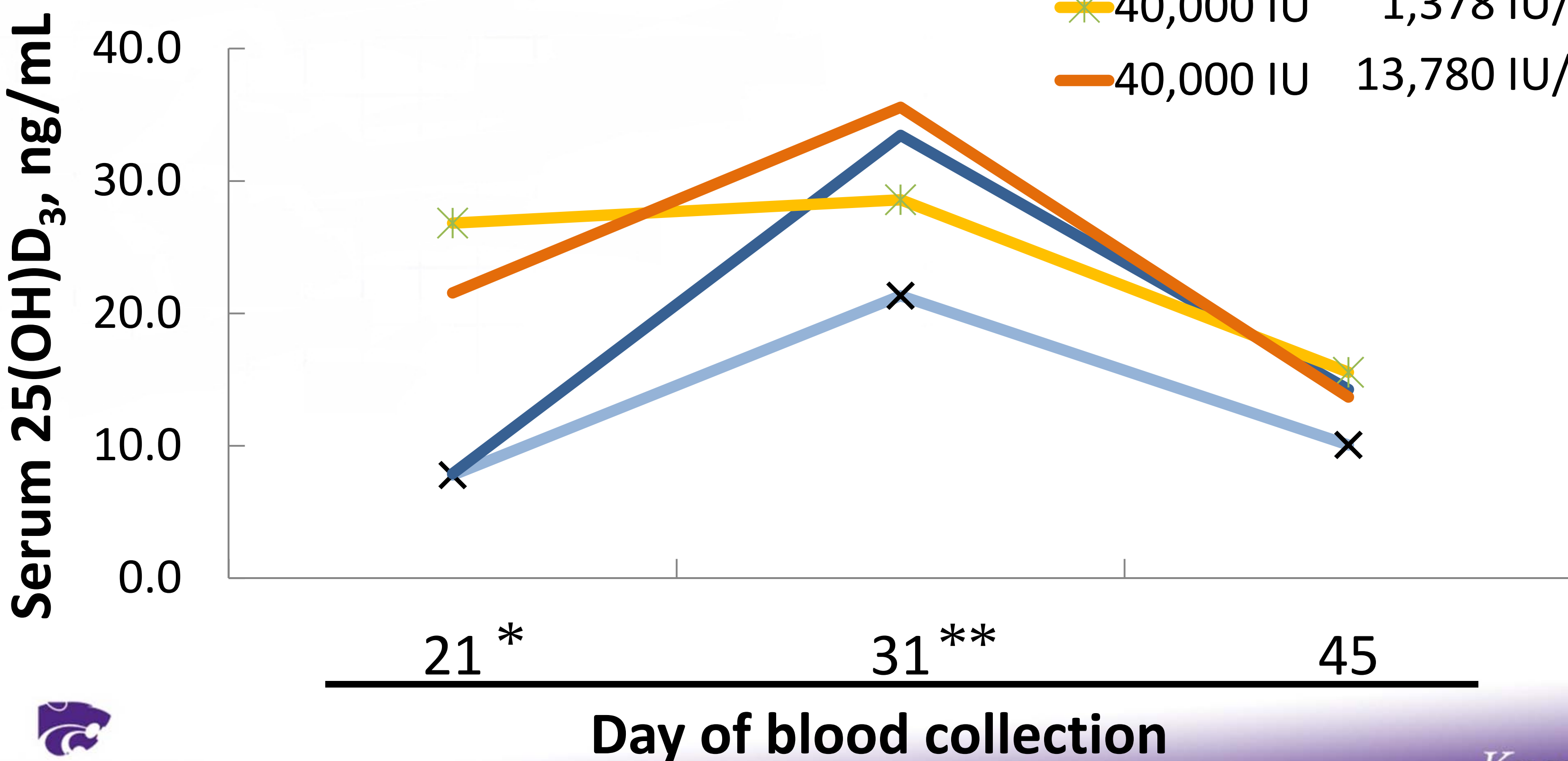
Effects of supplemental vitamin D_3 by oral dose or in early nursery diets on pig serum 25(OH)D_3 concentrations

Dose × Diet interaction, $P > 0.25$

*d 21, Oral dose, $P < 0.01$

**d 31, Oral dose, $P = 0.08$; Diet, $P < 0.01$

Oral D_3	**Dietary D_3**
None	1,378 IU/kg
None	13,780 IU/kg
40,000 IU	1,378 IU/kg
40,000 IU	13,780 IU/kg



Flohr et al., 2012

K·STATE Research and Extension

Knowledge for Life

Analyzed dietary vitamin D_3 concentrations

	Diet A	Diet B	Vitamin Premix	Vitamin D_3 premix
Formulated level, IU/kg	1,378	13,780	550,000	12,375,000
Analyzed level, IU/kg	1,267	10,346	597,886	8,948,486
Analytical error**	± 25%	± 20%	± 10%	± 5%

* Vitamin D_3 feed assays were conducted by DSM Nutritional Products Inc. (Parsippany, NJ).

** Laboratory assay variability associated with vitamin D_3 content.

73% of Expected

K·STATE Research and Extension

Flohr et al., 2012

Knowledge for Life

Effect of Oral Vitamin D Supplementation above basal Dietary Supplementation

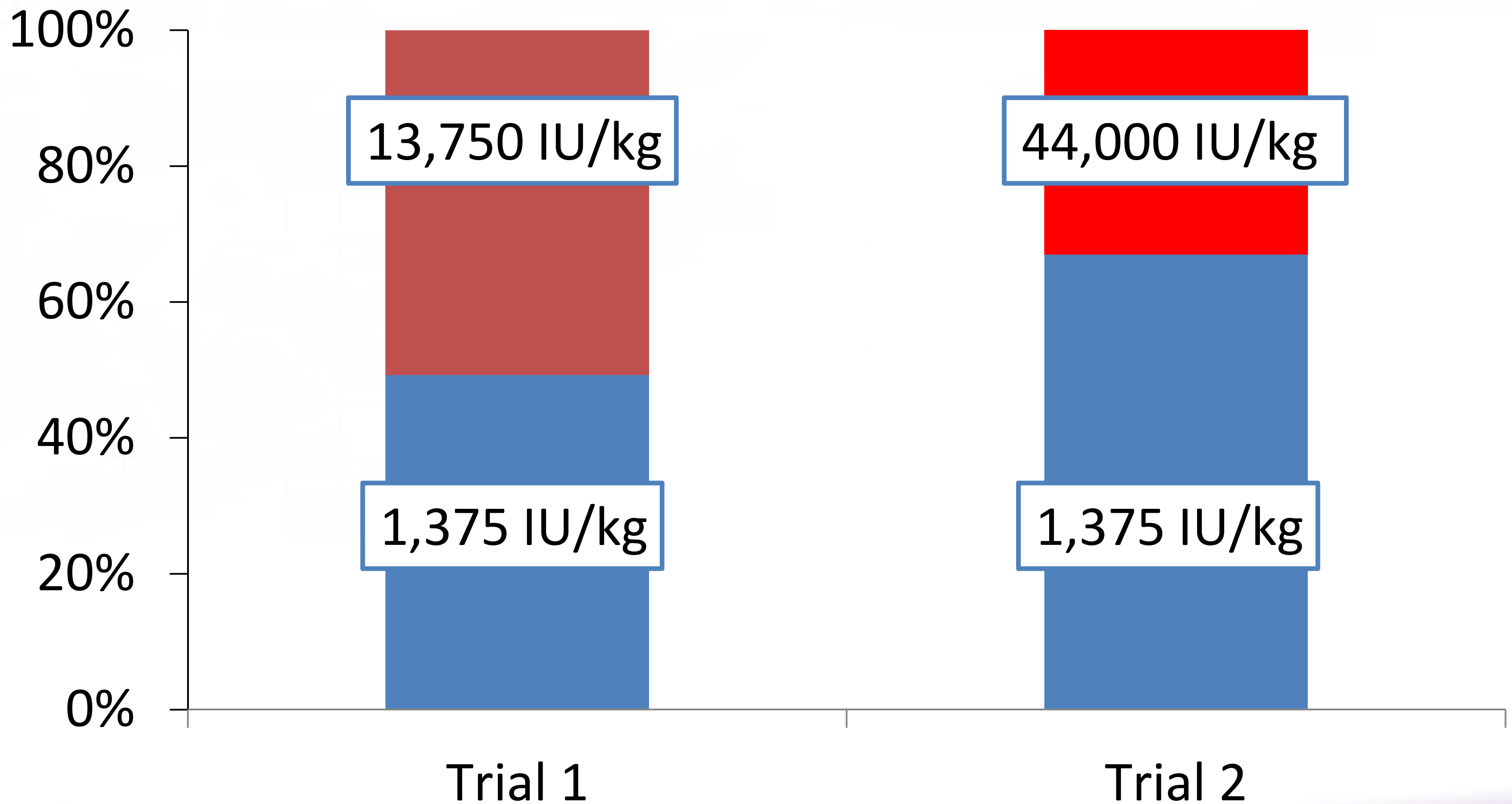
Trial	Wean Weight, lb	Wean 25(OH)D_3, ng/ml	Nursery End Weight, lb	Nursery 25(OH)D_3, ng/ml
Neonatal Oral Dosing				
Flohr (SD 2011) [1]	+.3	+20.1	+.5	+1.1
Rortvedt (MW 2012) [1,2]	NS	+20.3	-2.3	--
Flohr (SD 2012) [3]	+0.2	+16.4	0.0	+2.4
Tousignant (UMN)	+0.2	NS	NS	+17.0
Field Trial [2,4]	0.0	--	-0.4	--
Nursery H20				
Flohr (SD 2012)	--	--	-0.9	+90 (d10) +18 (d31)
Field Trial (2 wk)	--	--	+0.2	+6 (d 49)

1 NS Effect on bone ash, 2 NS effect on mortality 3 NS effect on PCV2 Antibody
4 SIV/PRRS positive NS Effect on WF ADG or Mortality NS=Not significant

K·STATE Research and Extension

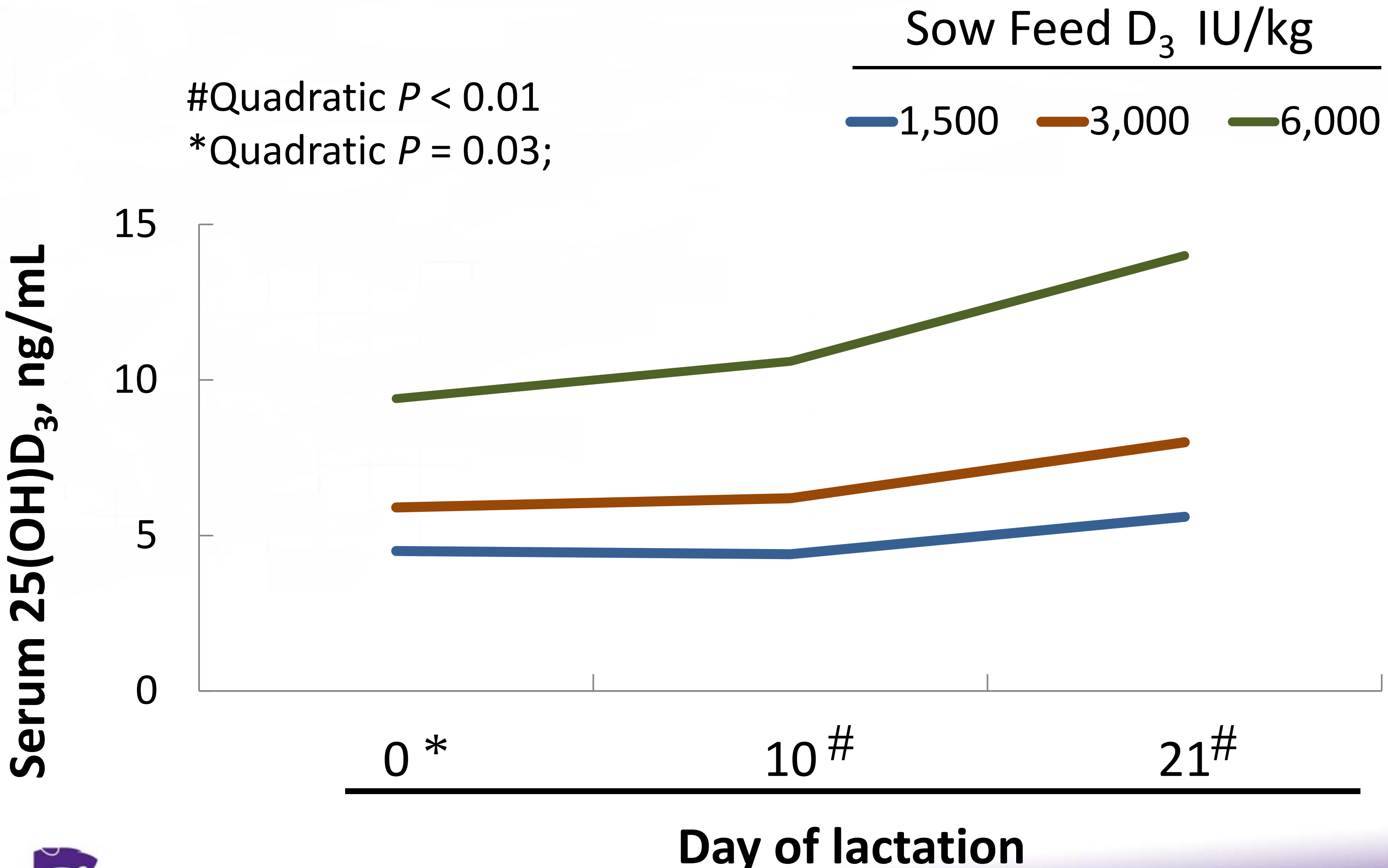
Knowledge for Life

Dietary Vitamin D Preference Trials
d 7 to 21 after weaning



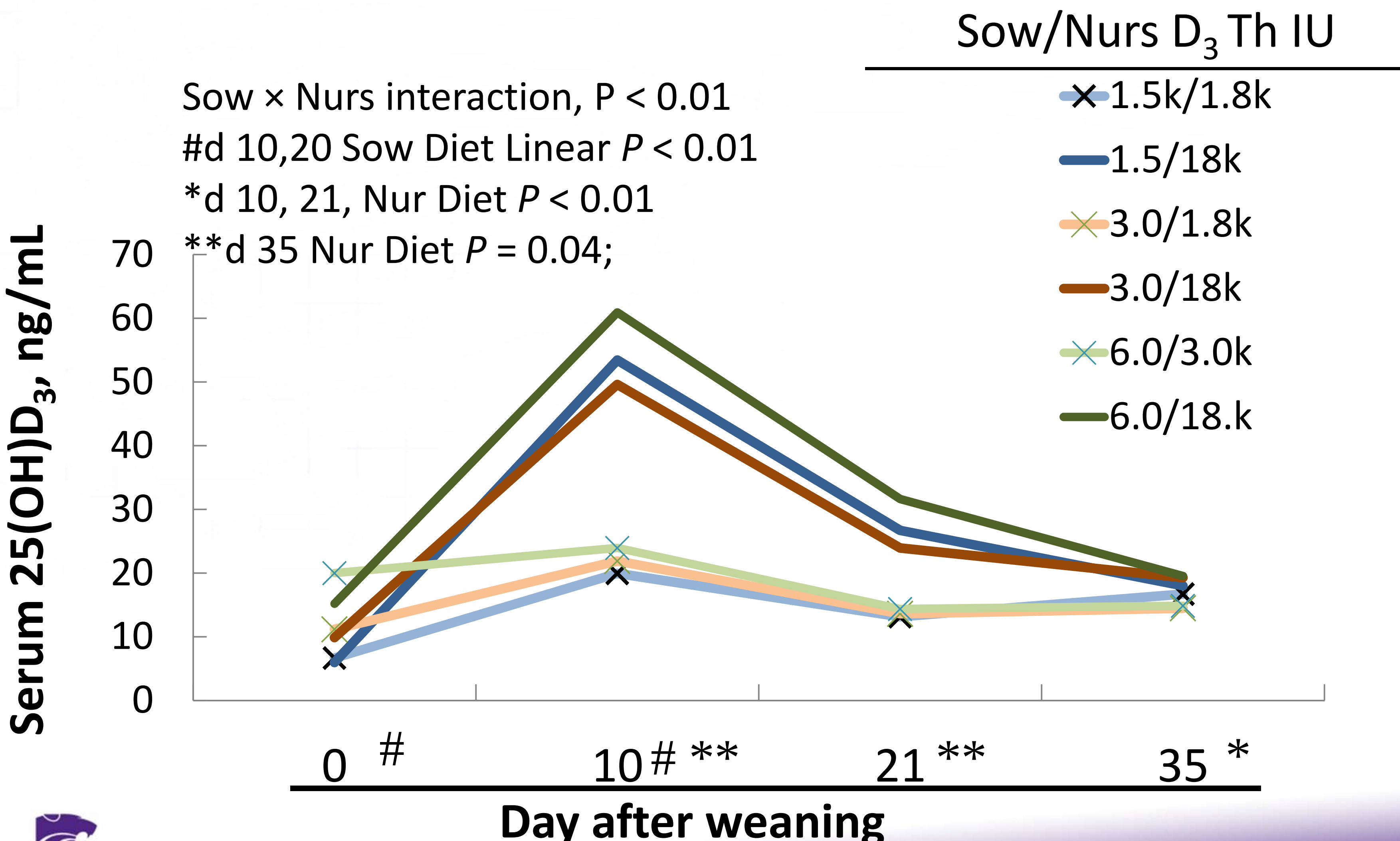
Flohr et al., 2012

Effects of supplemental vitamin D_3 in sow diets on pig serum 25(OH)D_3 concentrations



Flohr et al., 2013

Effects of supplemental vitamin D_3 in sow or nursery diets on pig serum 25(OH)D_3 concentrations



Flohr et al., 2013

K·STATE Research and Extension

Knowledge for Life

Field Case

- May 2011 – Rachitic Rosary noted as an incidental finding in a necropsy survey of PWM, Confirmed histologically
- August 2011 – Reports of broken legs when loading out pigs (20 to 30 per 1,200 head barn)
- September 2011 – Survey of multiple feed samples Ca/Phos meet targets
- October 2011 – Submit Premix for analysis

Premix Vitamin D_3, IU/lb

Premix	Result	Expected	% of Expected
GF VTM Lot 1	No measurable amount	250,000	NA
GF VTM Lot 2	No measurable amount	250,000	NA
Sow VTM Lot 1	169,875	500,000	34%
Sow VTM Lot 2	227,408	500,000	45%
Nur VTM Lot 1	373,688	400,000	93%
Nur VTM Lot 2	159,890	400,000	40%

Slaughter Plant Defect Data

Year	Month	ARTH	BACK	CULL	RIBS
2011	1	0.02%	1.90%	0.11%	0.04%
	2	0.03%	2.05%	0.07%	0.02%
	3	0.03%	2.23%	0.06%	0.03%
	4	0.02%	2.48%	0.06%	0.04%
	5	0.02%	2.42%	0.07%	0.02%
	6	0.02%	2.19%	0.06%	0.04%
	7	0.02%	3.31%	0.05%	0.04%
	8	0.04%	2.30%	0.06%	0.06%
	9	0.03%	2.51%	0.02%	0.01%
	10	0.02%	1.36%	0.03%	0.01%
	11	0.02%	1.05%	0.01%	0.02%
	12	0.01%	0.78%	0.00%	0.00%
2012	1	0.01%	0.59%	0.00%	0.00%
	2	0.02%	0.74%	0.01%	0.00%
	3	0.01%	0.75%	0.00%	0.00%
	4	0.01%	0.56%	0.01%	0.00%
	5	0.02%	0.73%	0.02%	0.00%

Slaughter Plant Defect Data

Periods				
Percentage	**ARTH**	**BACK**	**CULL**	**RIBS**
Jan to Sept 11	0.03%	2.36%	0.07%	0.04%
Sept to Dec 11	0.02%	1.42%	0.02%	0.01%
Jan to May 12	0.01%	0.68%	0.01%	0.00%
Relative Risk	1.9	3.5	8.4	56.9
Affected per 100,000 Pigs				
Jan to Sept 11	25	2360	67	35
Sept to Dec 11	21	1425	16	10
Jan to May 12	13	675	8	1

Little evidence of effects could be found when evaluating sow or growing pig performance

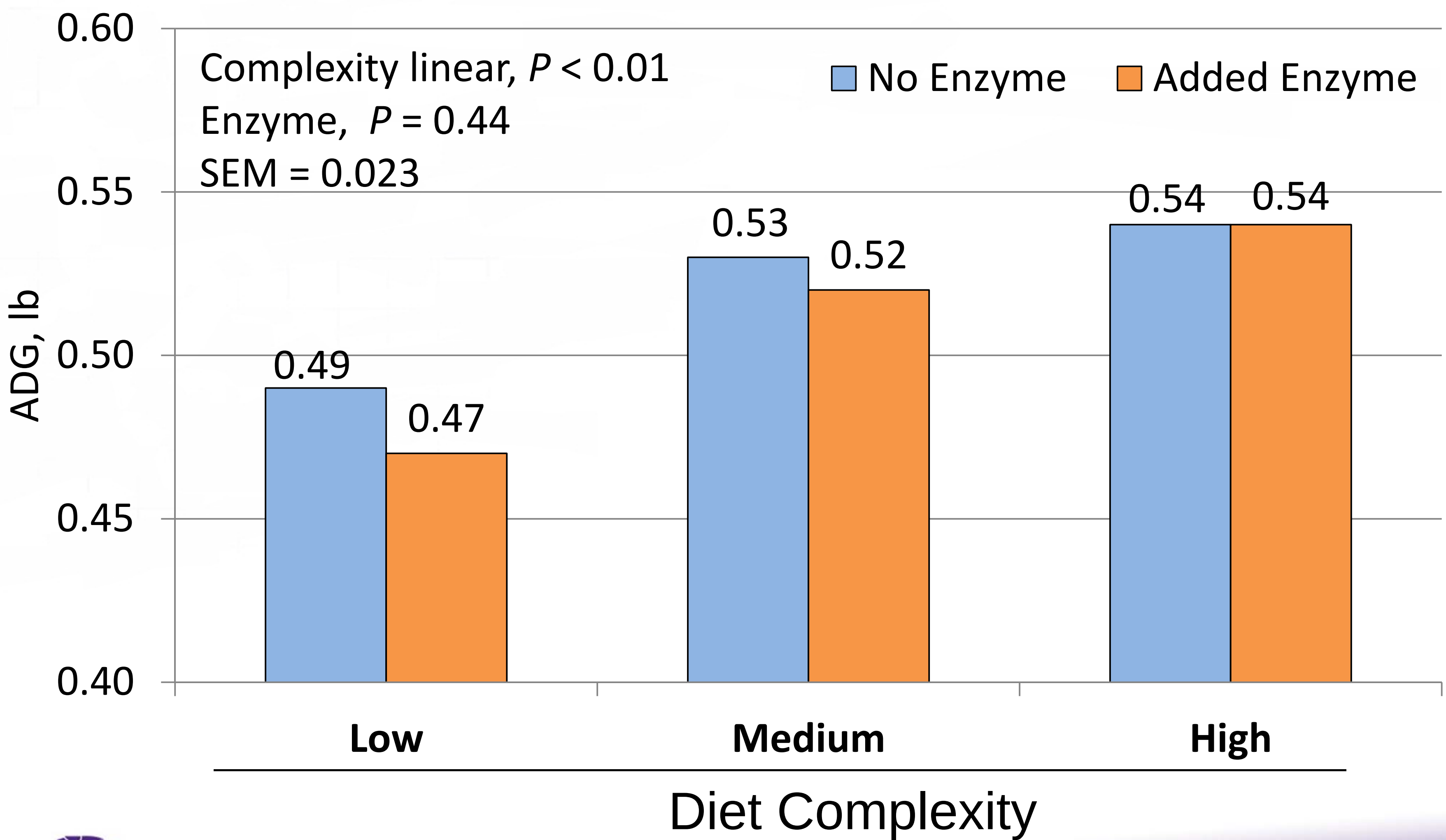
Comparison of vitamin D recommendations

Source, IU/kg	NRC, 1998	NRC, 2012	KSU
Gestation	200	800	1378
Lactation	200	800	1378
Early nursery	220	220	1378
Late nursery	200	200	1378
Grower	150	150	827
Finisher	150	150	551
Paylean phase	150	150	413

Steps to ensure vitamin D is supplemented correctly (and other vitamins and trace minerals):

- Develop clear premix specifications
- Use reputable premix suppliers
- Verify premix production batch sheets
- Ensure product rotation
- Separate vitamin and trace mineral premix
- Verify premix additions
  - Inventory control
  - Eliminate hand adds
- Evaluate mixer efficiency
- Consider premix testing

Influence of enzyme blend and Diet Complexity on nursery ADG (d 0 – 18; initially 13 lb)

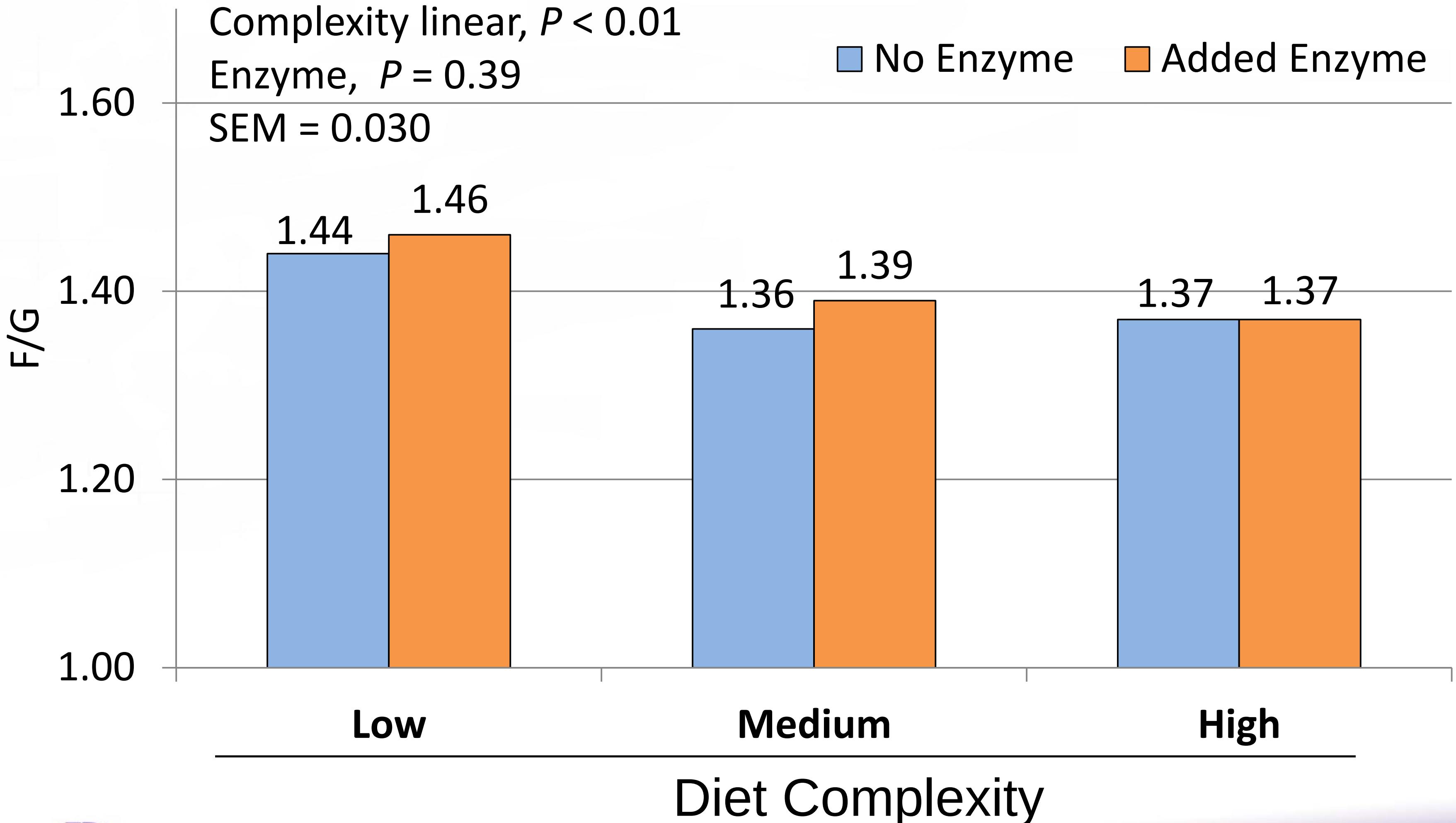


K·STATE Research and Extension

DeRouchey et al., 2012

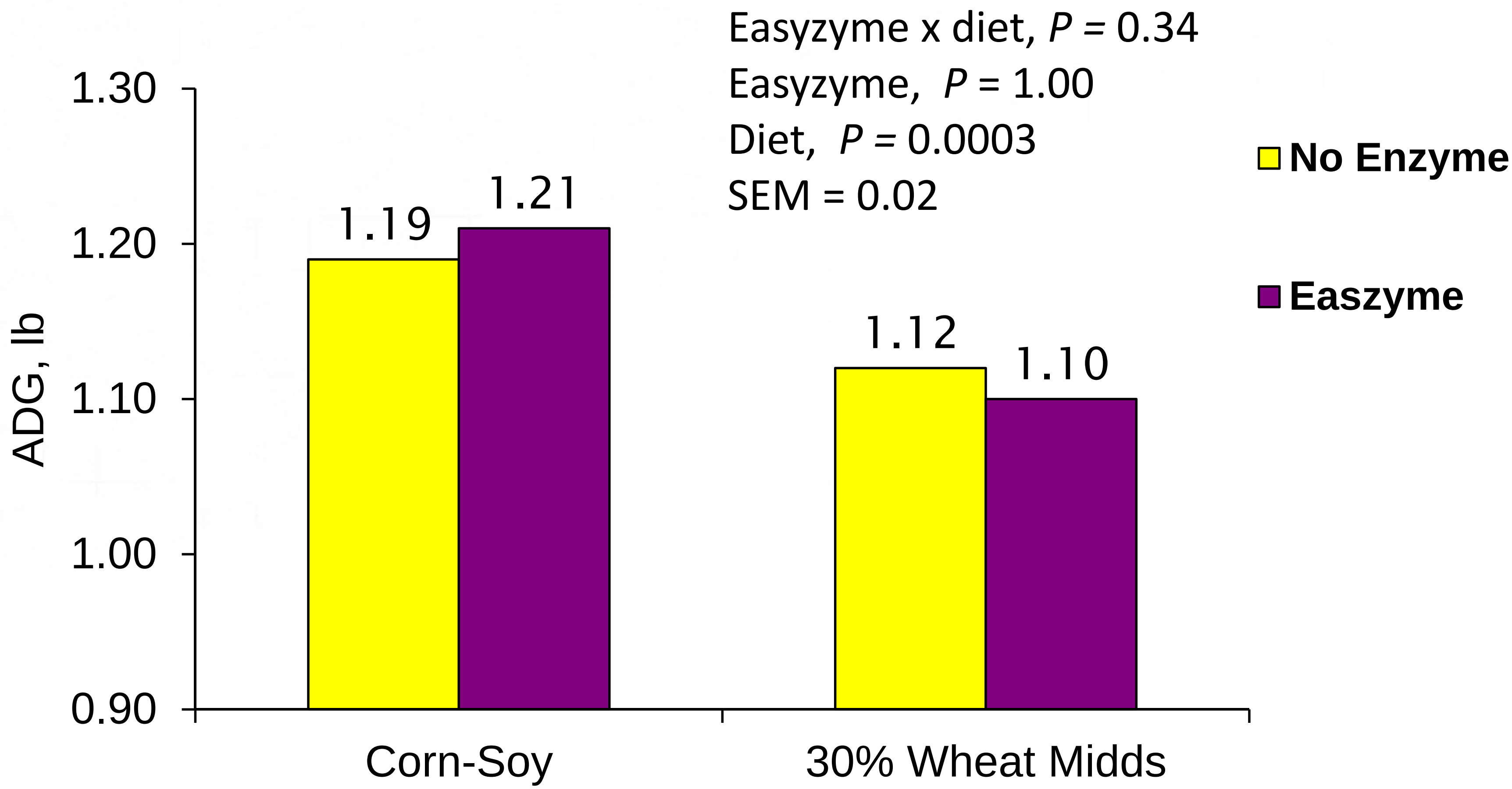
Knowledge for Life

Influence of enzyme blend and diet complexity on nursery F/G (d 0 – 18; initially 13 lb)



DeRouchey et al., 2012

Influence of Easyzyme and Wheat Middlings on nursery ADG (Exp. 1; d 0 – 21; initially 22 lb)

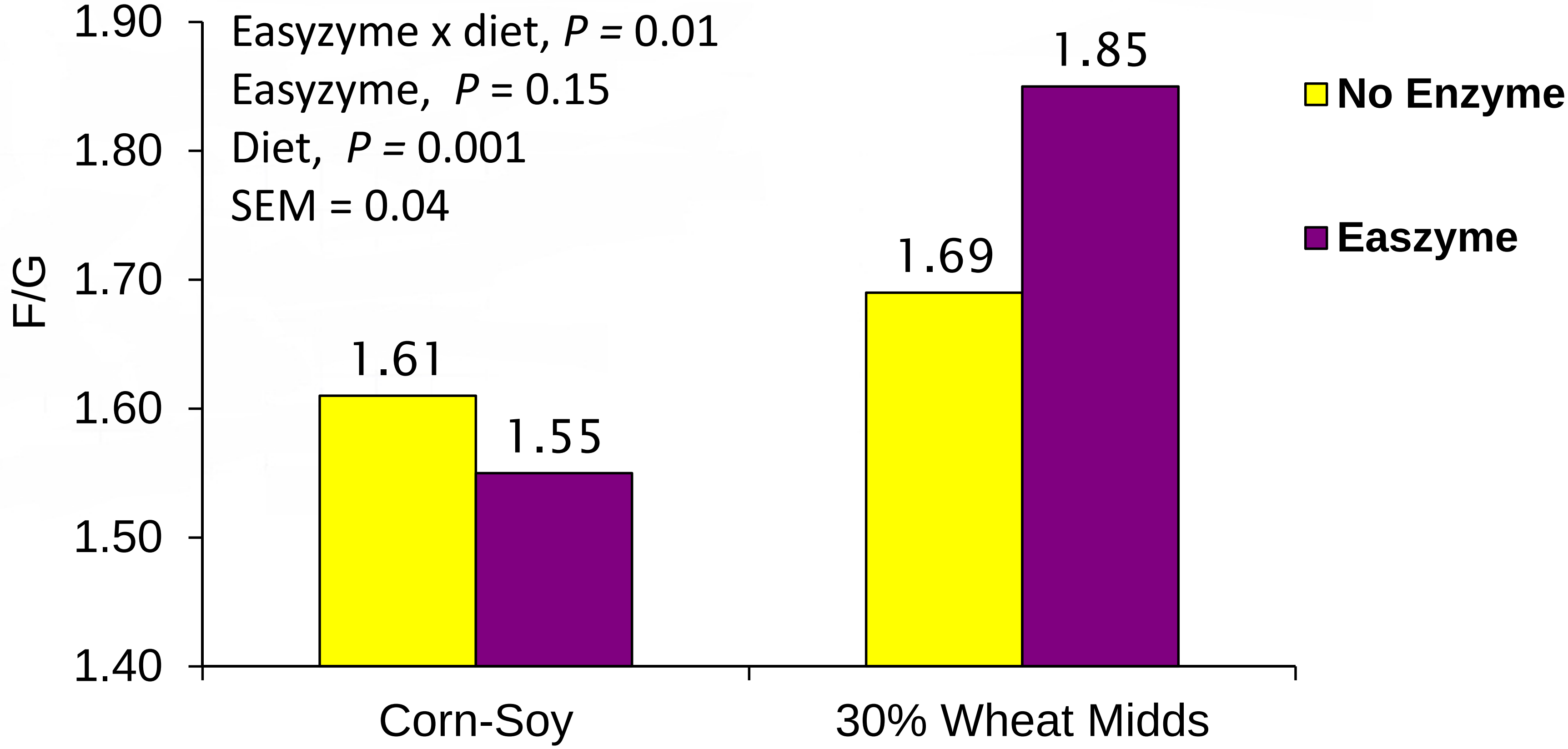


K·STATE Research and Extension

Graham et al., 2012

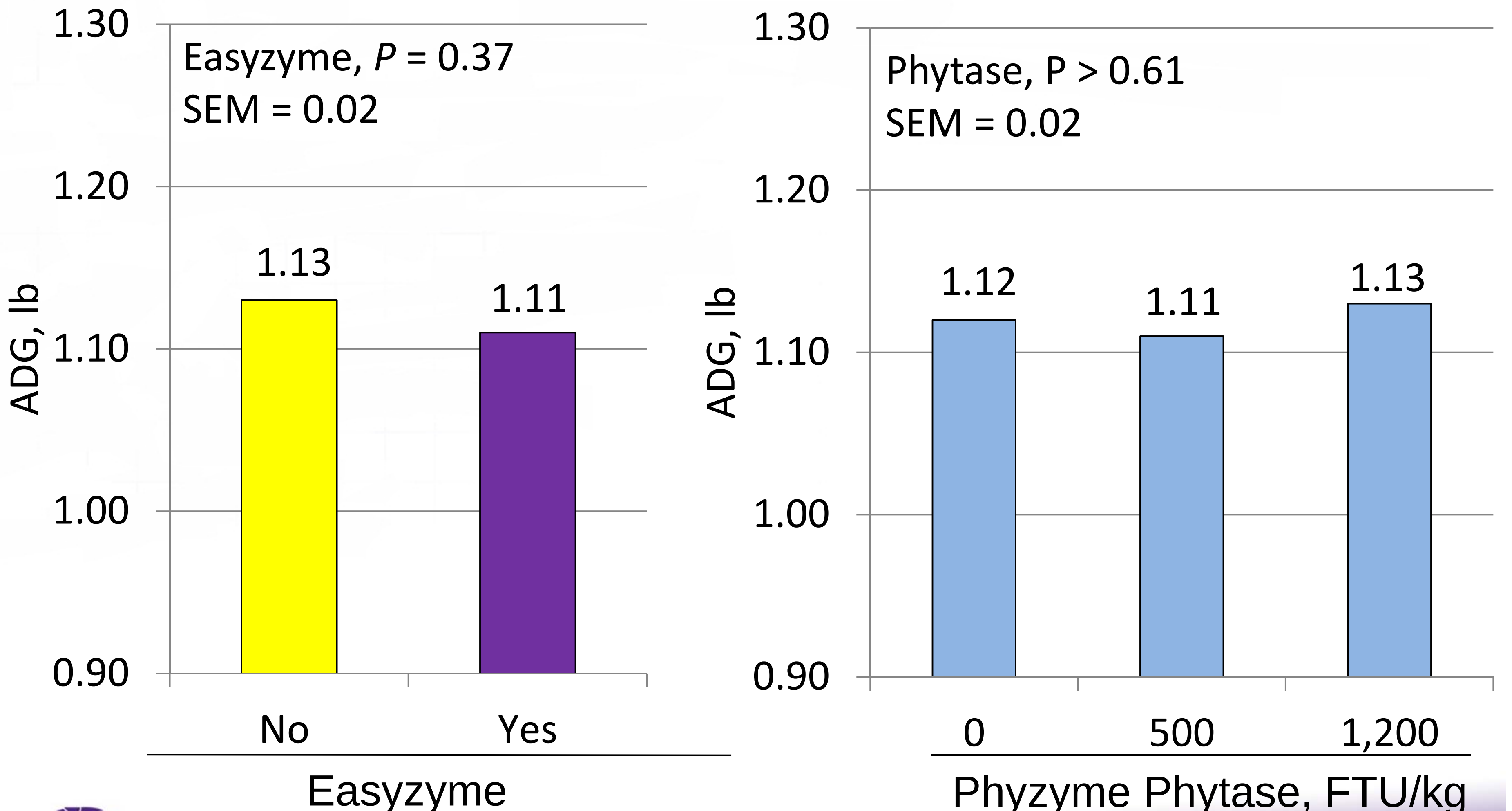
Knowledge for Life

Influence of Easyzyme and Wheat Middlings on nursery F/G (Exp. 1; d 0 – 21; initially 22 lb)



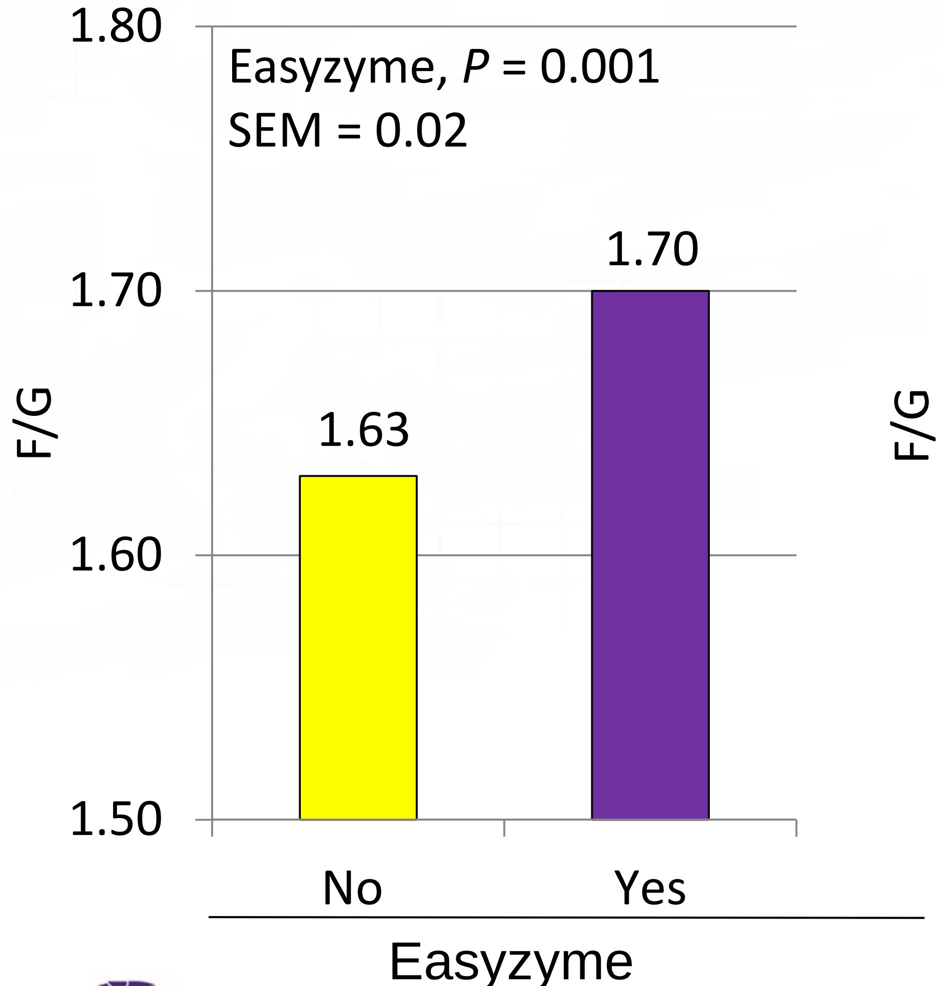
Graham et al., 2012

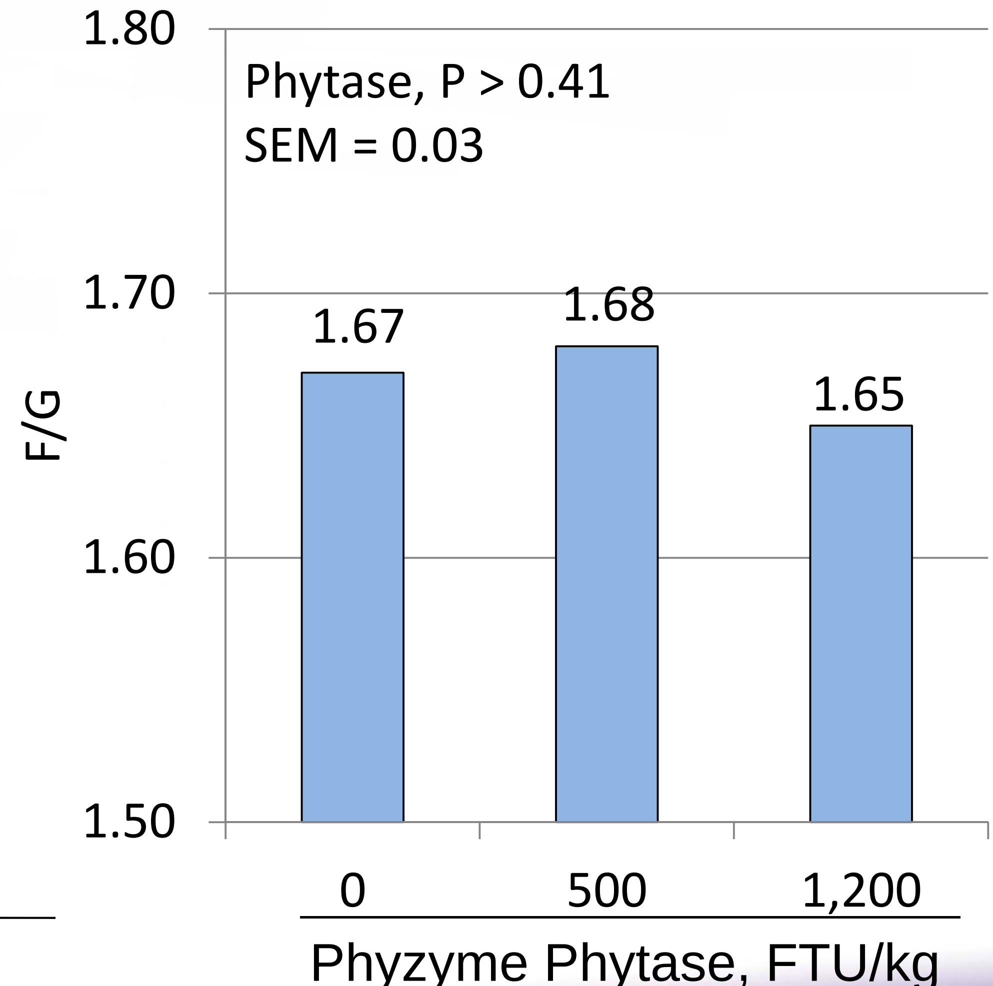
Influence of Easyzyme and Phytase in high by-product diets on nursery ADG (Exp. 2; d 0 – 21; initially 25 lb)



Graham et al., 2012

Influence of Easyzyme and Phytase in high by-product diets on nursery F/G (Exp. 2; d 0 – 21; initially 25 lb)



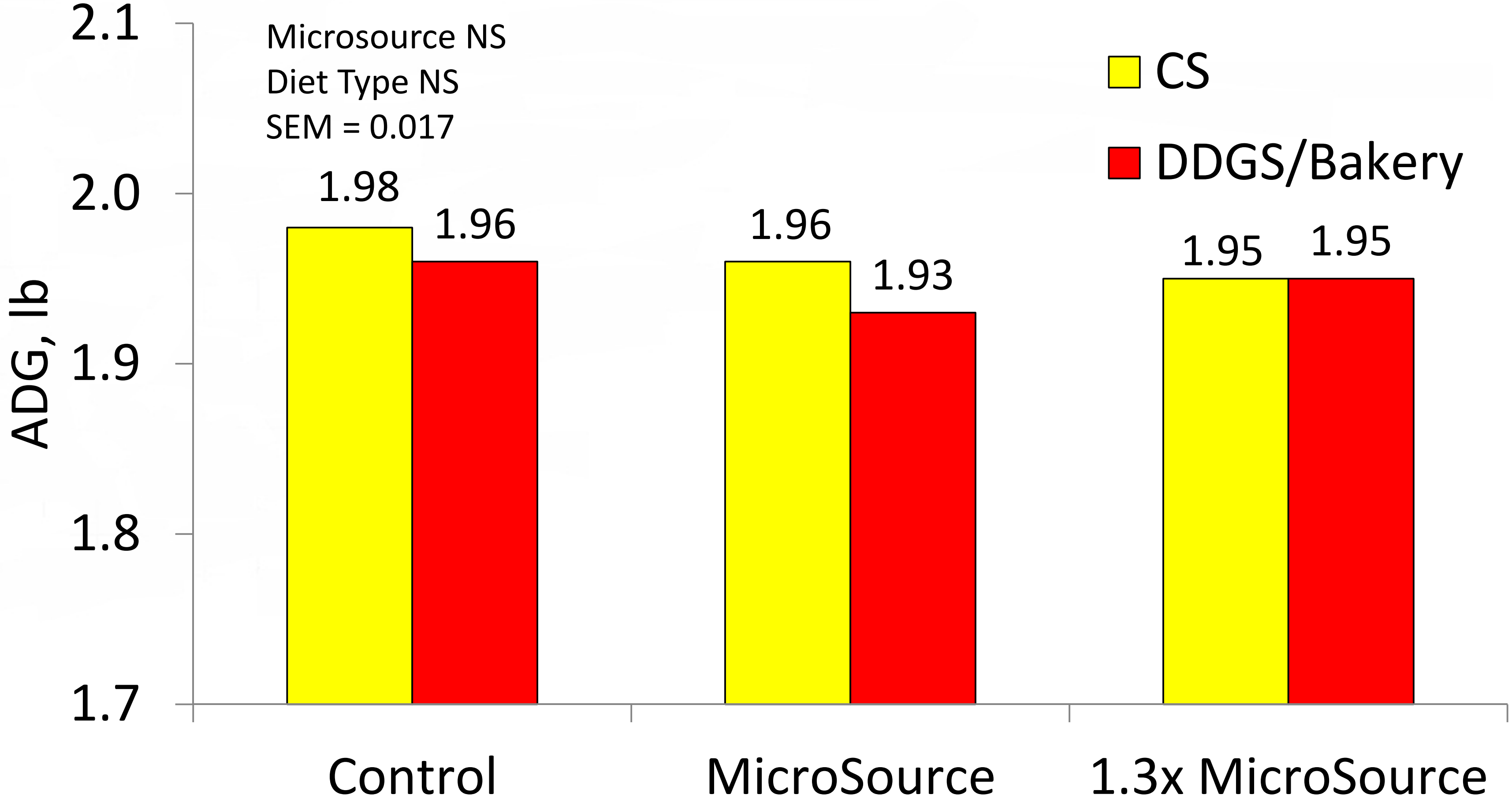


K·STATE Research and Extension

Graham et al., 2012

Knowledge for Life

Effect of diet type and Microsurce S on finishing pig performance (ADG, d 0 to 90)



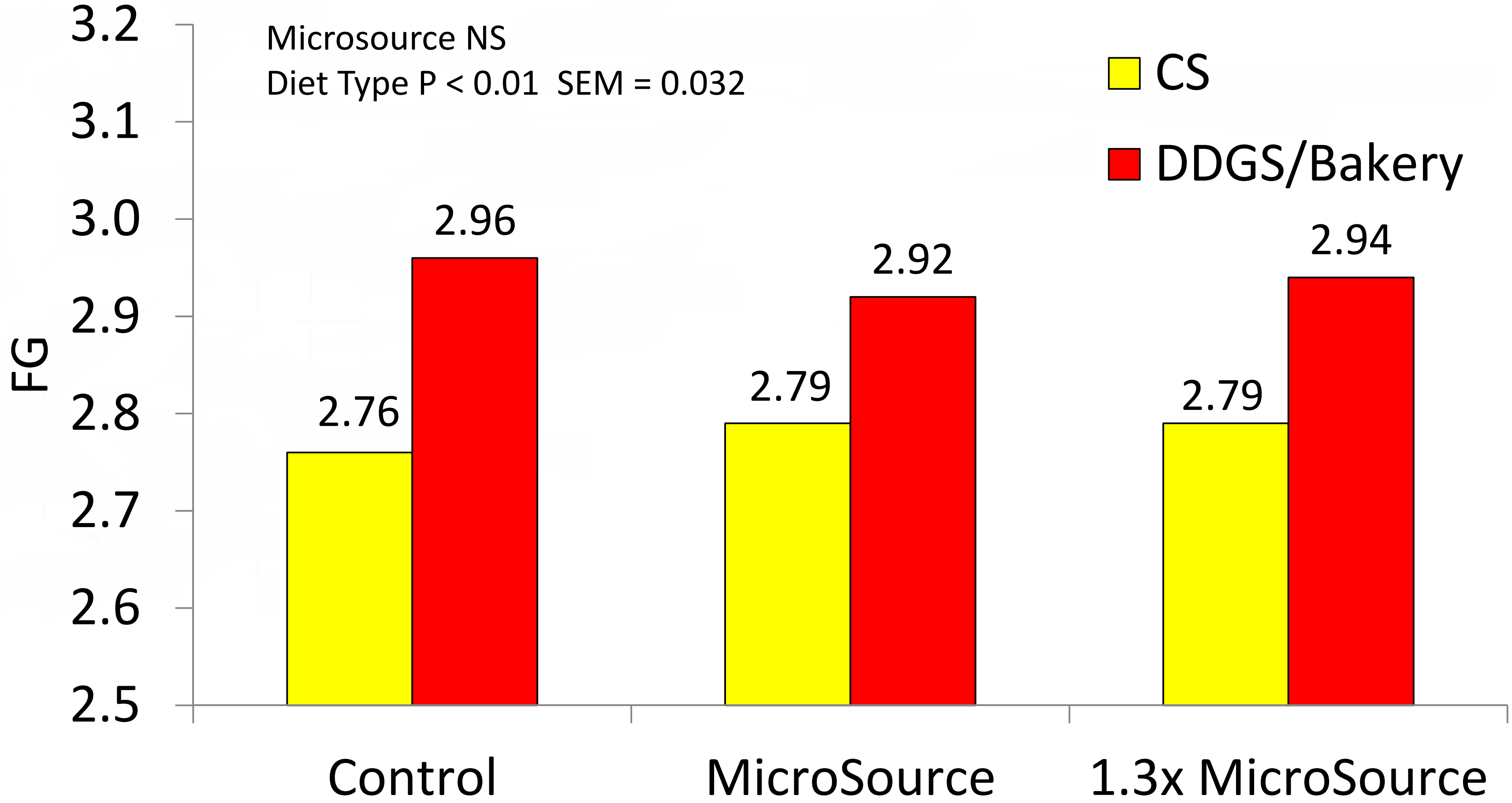
K·STATE Research and Extension

NEW HORIZON FARMS LLP

Nitikanchana et al., 2012

Knowledge for Life

Effect of diet type and Microsurce S on finishing pig performance (FG, d 0 to 90)



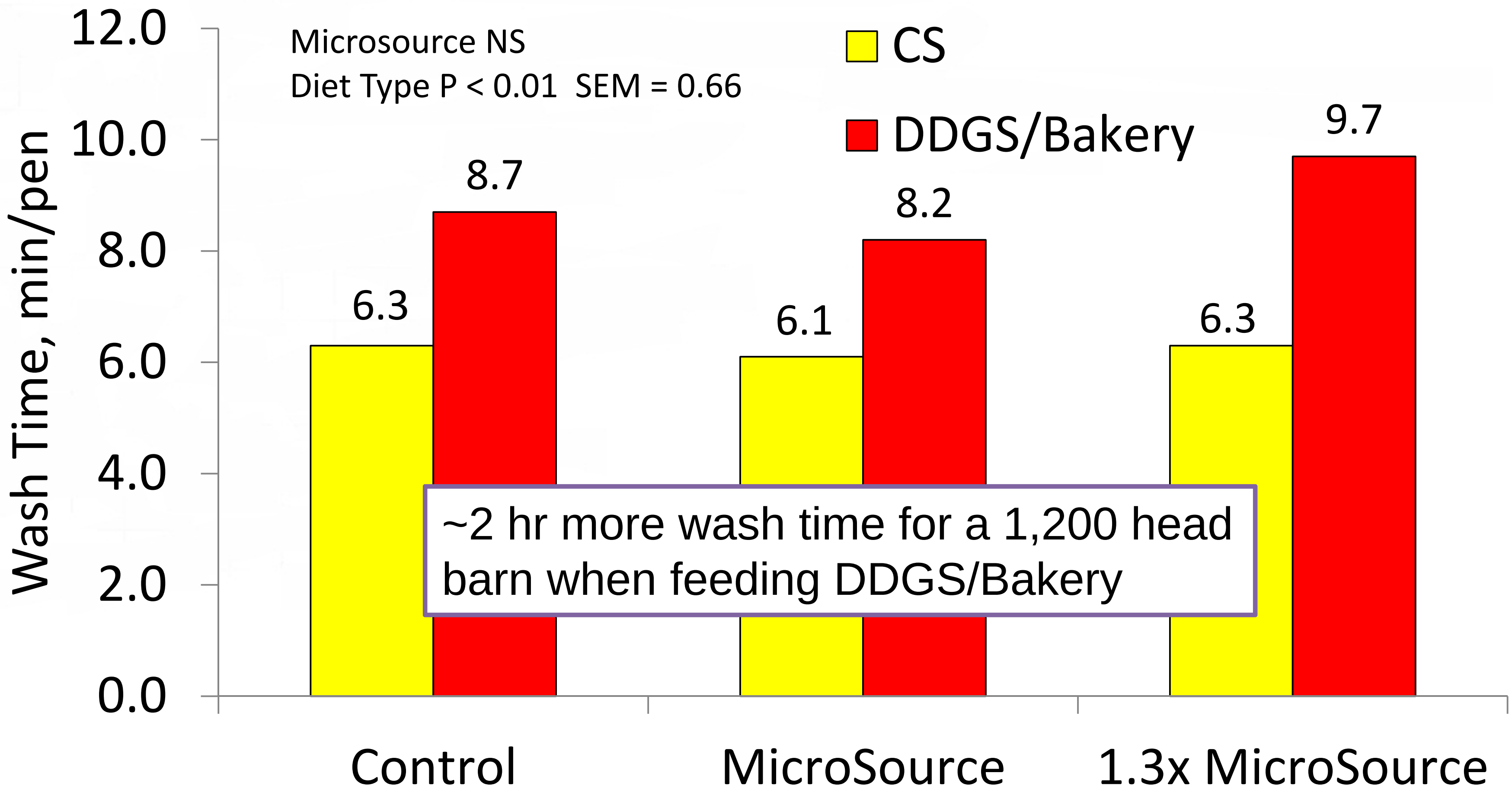
K·STATE Research and Extension

NHF New Horizon Farms LLP

Nitikanchana et al., 2012

Knowledge for Life

Effect of diet type and Microsurce S on Pen Wash Time (min/pen)



K·STATE Research and Extension

New Horizon Farms LLP

Nitikanchana et al., 2012

Knowledge for Life

KSU Swine Day 2012

Morning – Sows (Vitamin E, carnitine, chromium)

Vitamin D

Feed additives

Afternoon – Nursery (soy hulls, wheat middlings)

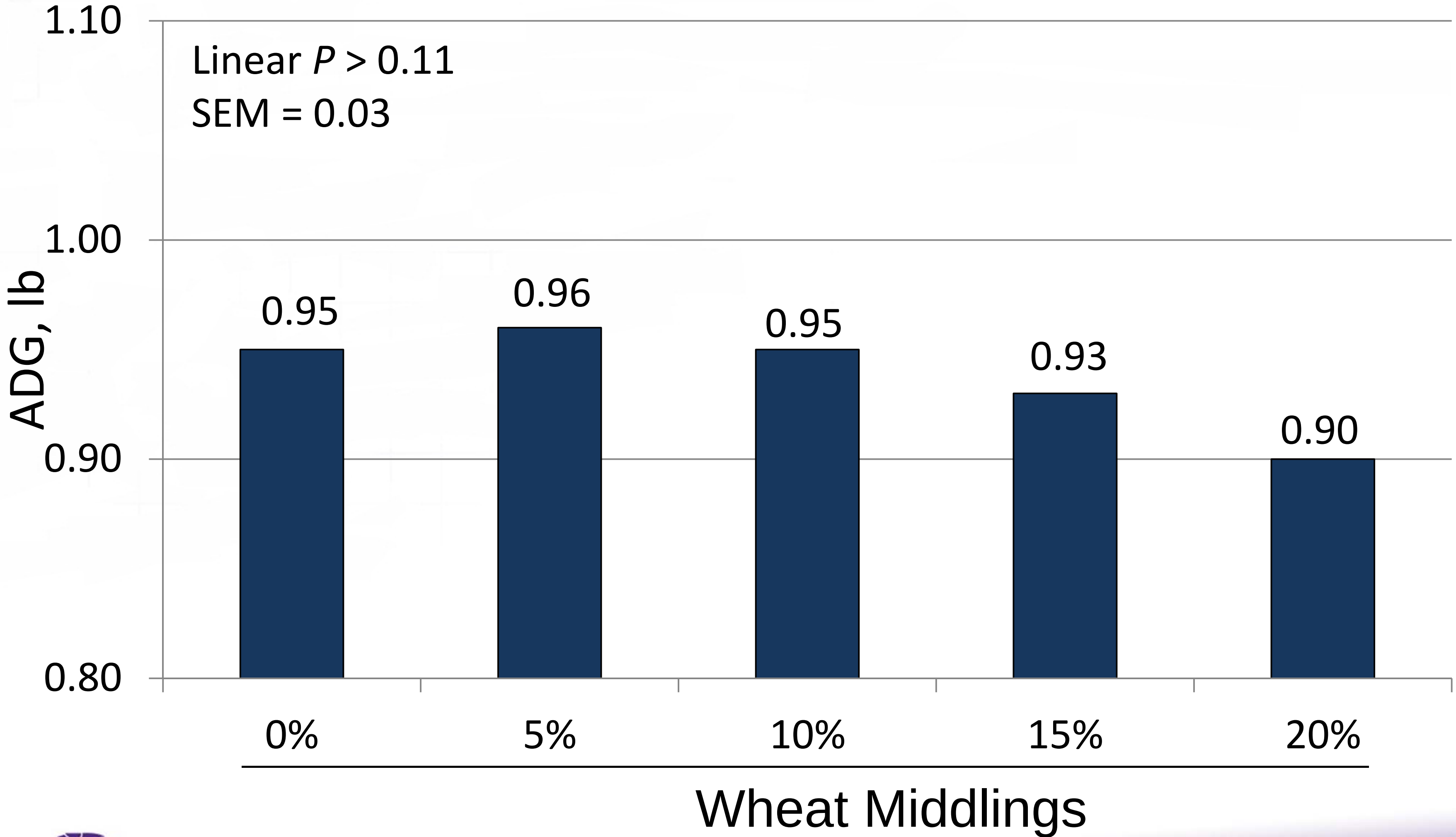
Grow-finish

- Wheat
- DDGS (low vs high oil)
- Feed processing
- Improvest
- Marketing

Wheat Middlings

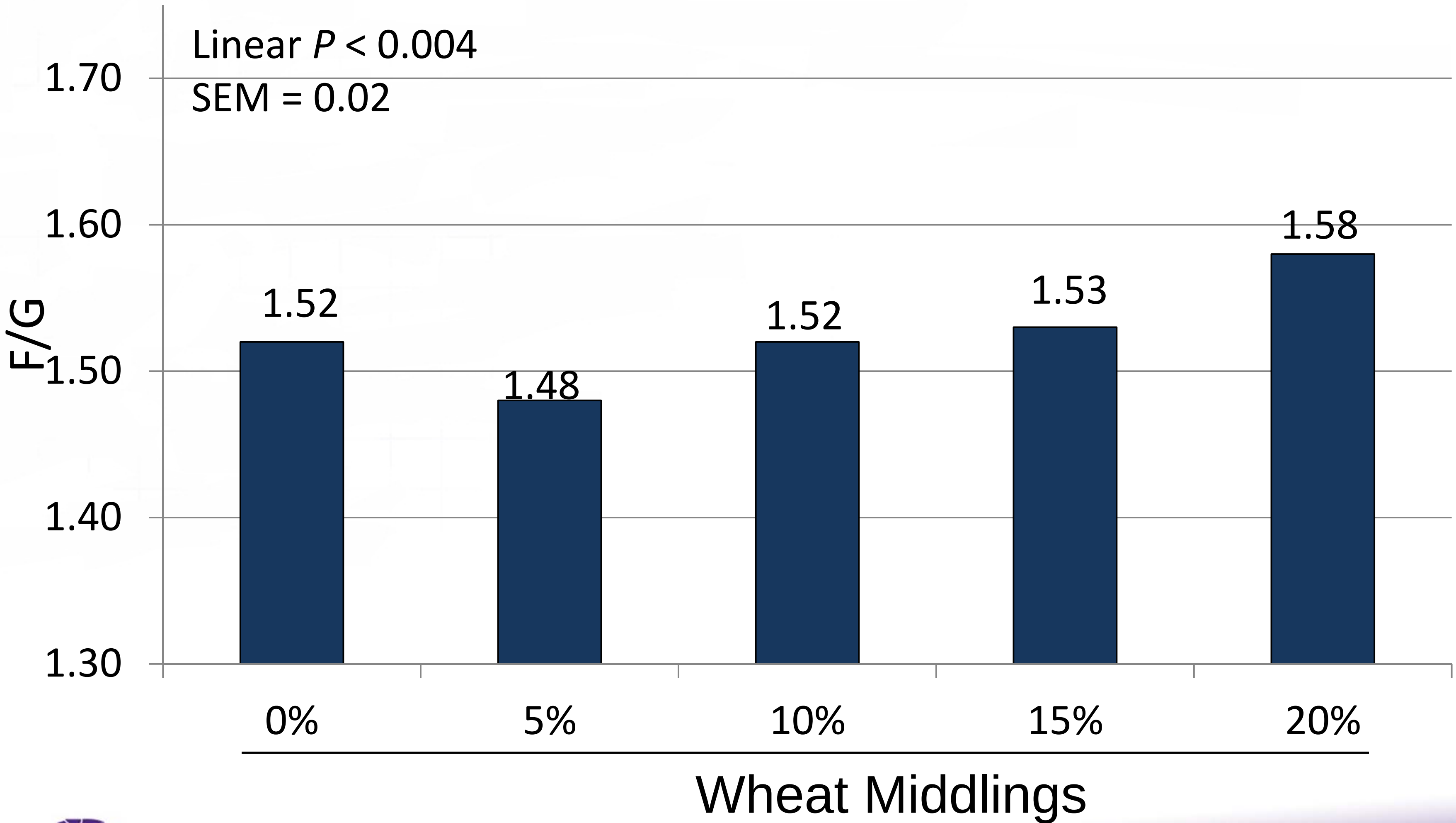
- During the wheat milling process, about 70 to 75% of the grain becomes flour, leaving 25 to 30% as wheat byproducts.
- Wheat middlings
  - 16% CP; 89% the ME value of corn.
  - Wheat midds contain between 7.0 and 9.5% fiber.
  - Low bulk density (anywhere from 18 to 24 lb/cubic ft.) increases the volume of the feed unless they are pelleted at the flour mill.
- Wheat midds are commonly added to pelleted feeds because of its beneficial effects on pellet quality.

Effect of Wheat Middlings on nursery pig performance (d 0 to 35; 15 to 25 lb)



De Jong et al., 2012

Effect of Wheat Middlings on nursery pig performance (d 0 to 35; 15 to 25 lb)

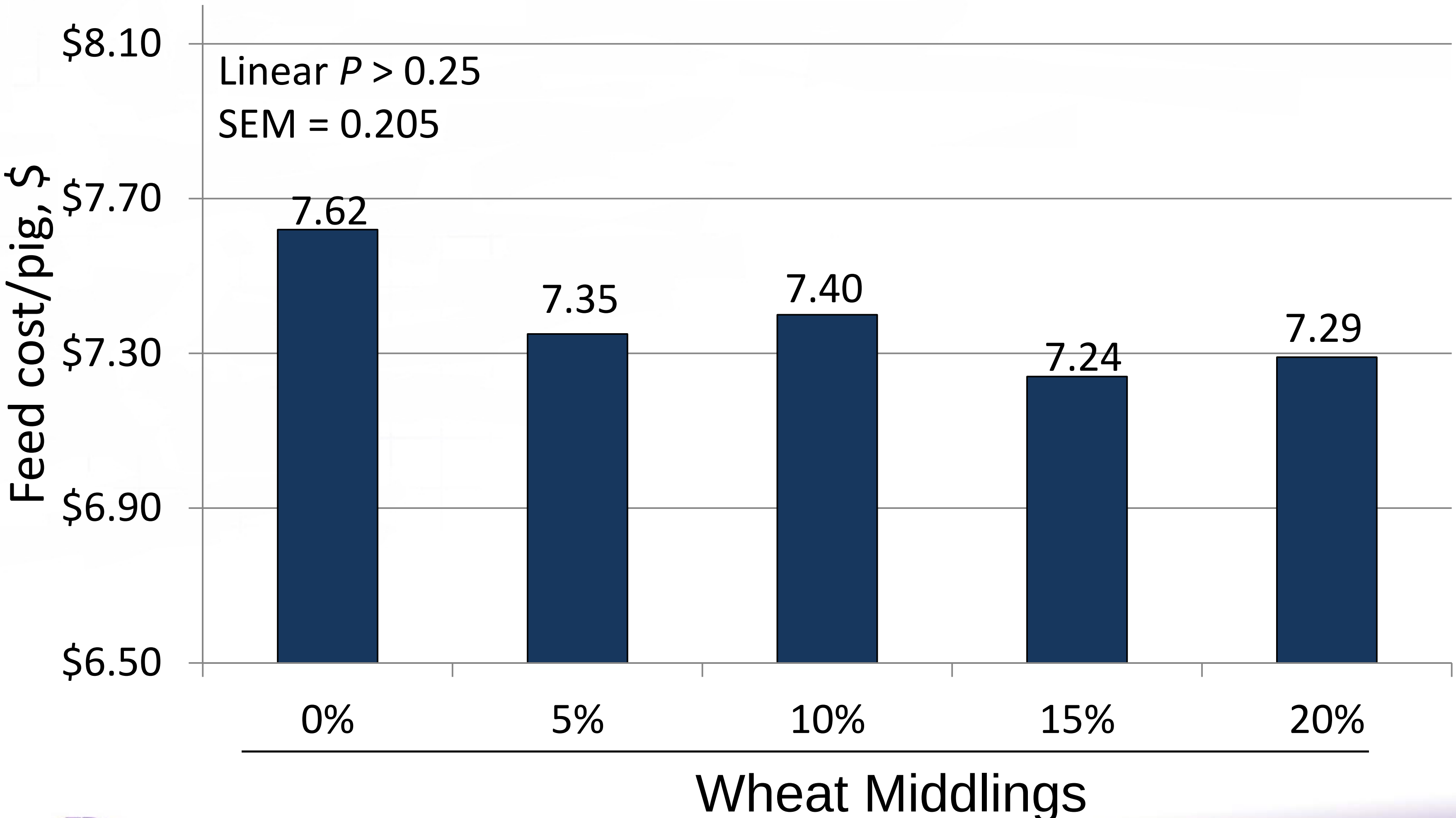


K·STATE Research and Extension

De Jong et al., 2012

Knowledge for Life

Economics of Increasing Wheat Middlings in nursery pig diets (d 0 to 35; 15 to 25 lb)

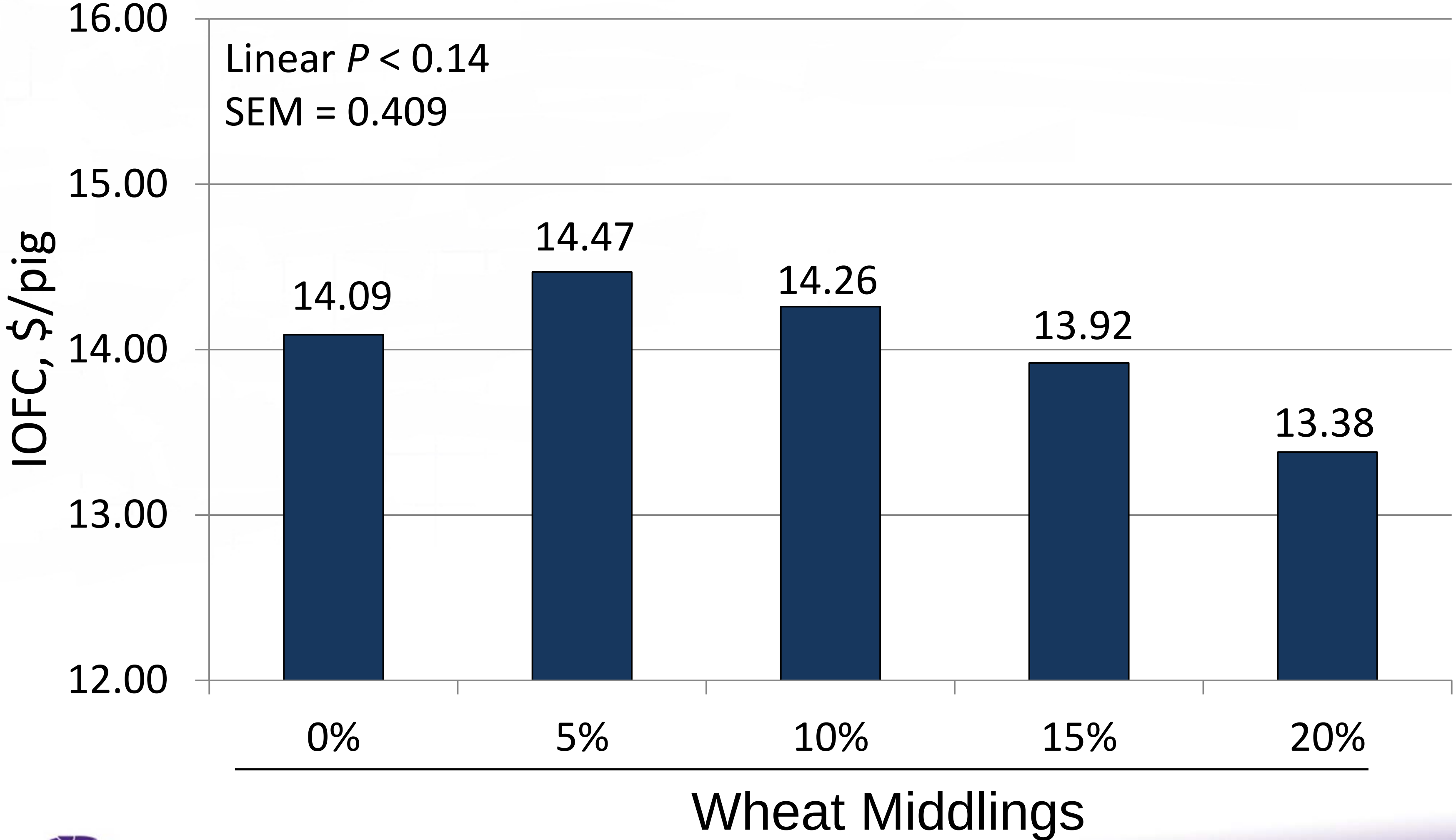


K·STATE Research and Extension

De Jong et al., 2012

Knowledge for Life

Economics of Increasing Wheat Middlings in nursery pig diets (d 0 to 35; 15 to 25 lb)

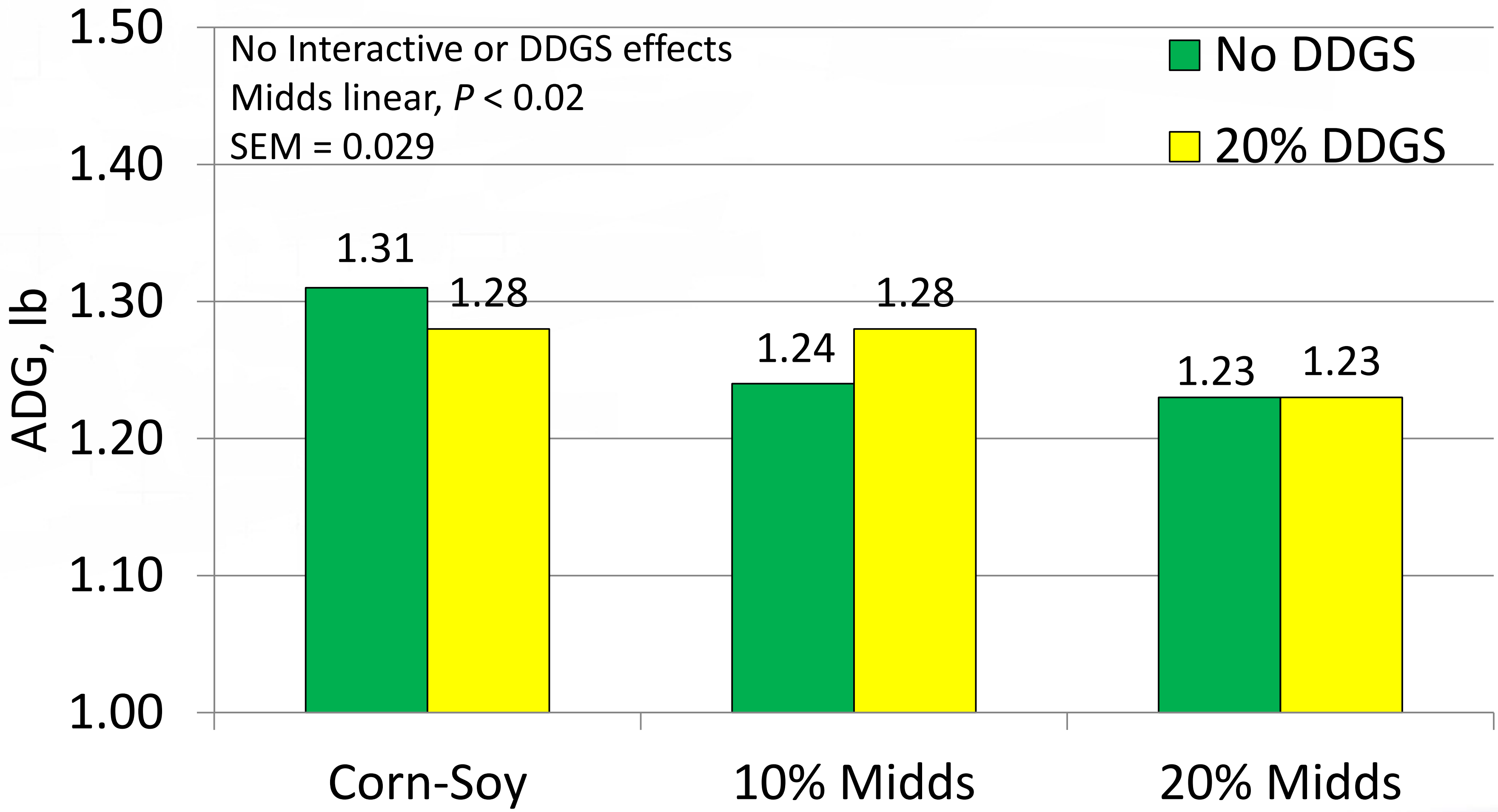


De Jong et al., 2012

K·STATE Research and Extension

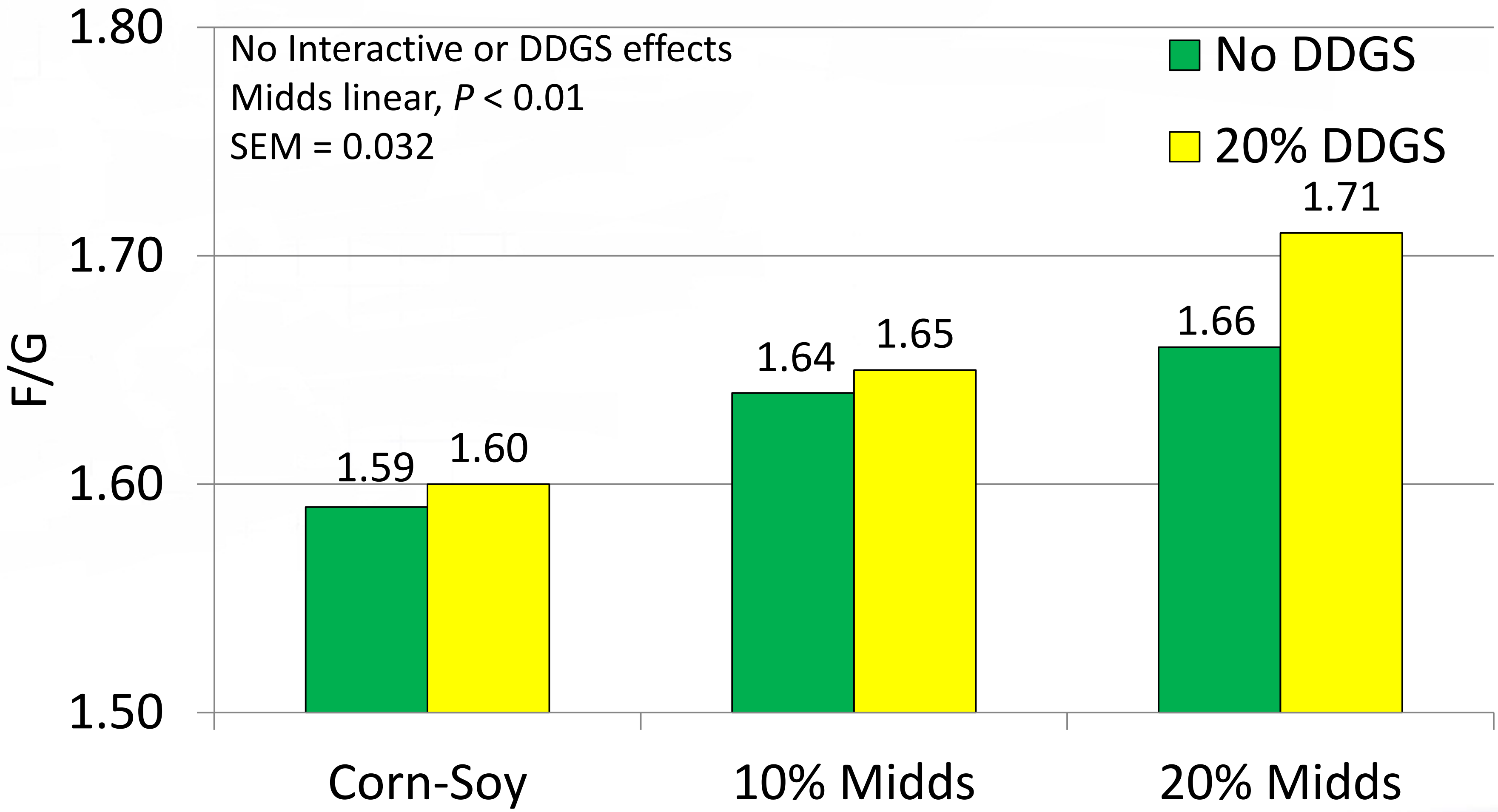
Knowledge for Life

Effect of Wheat Middlings and DDGS in nursery pig diets (d 0 to 21; BW 27 to 54 lb)



De Jong et al., 2012

Effect of Wheat Middlings and DDGS in nursery pig diets (d 0 to 21; BW 27 to 54 lb)

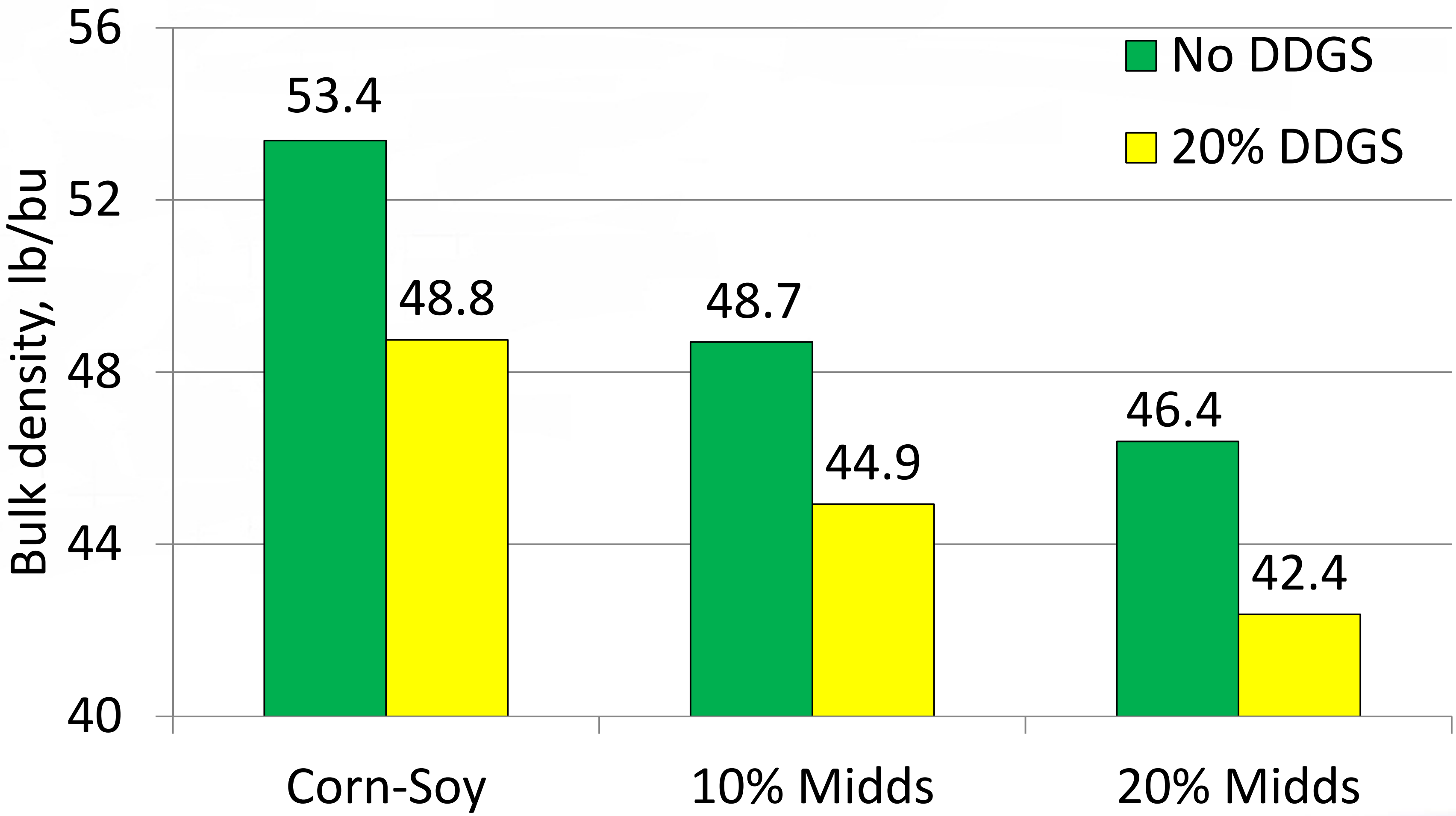


K·STATE Research and Extension

De Jong et al., 2012

Knowledge for Life

Economics of Wheat Middlings and DDGS in nursery pig diets (d 0 to 21; BW 27 to 54 lb)

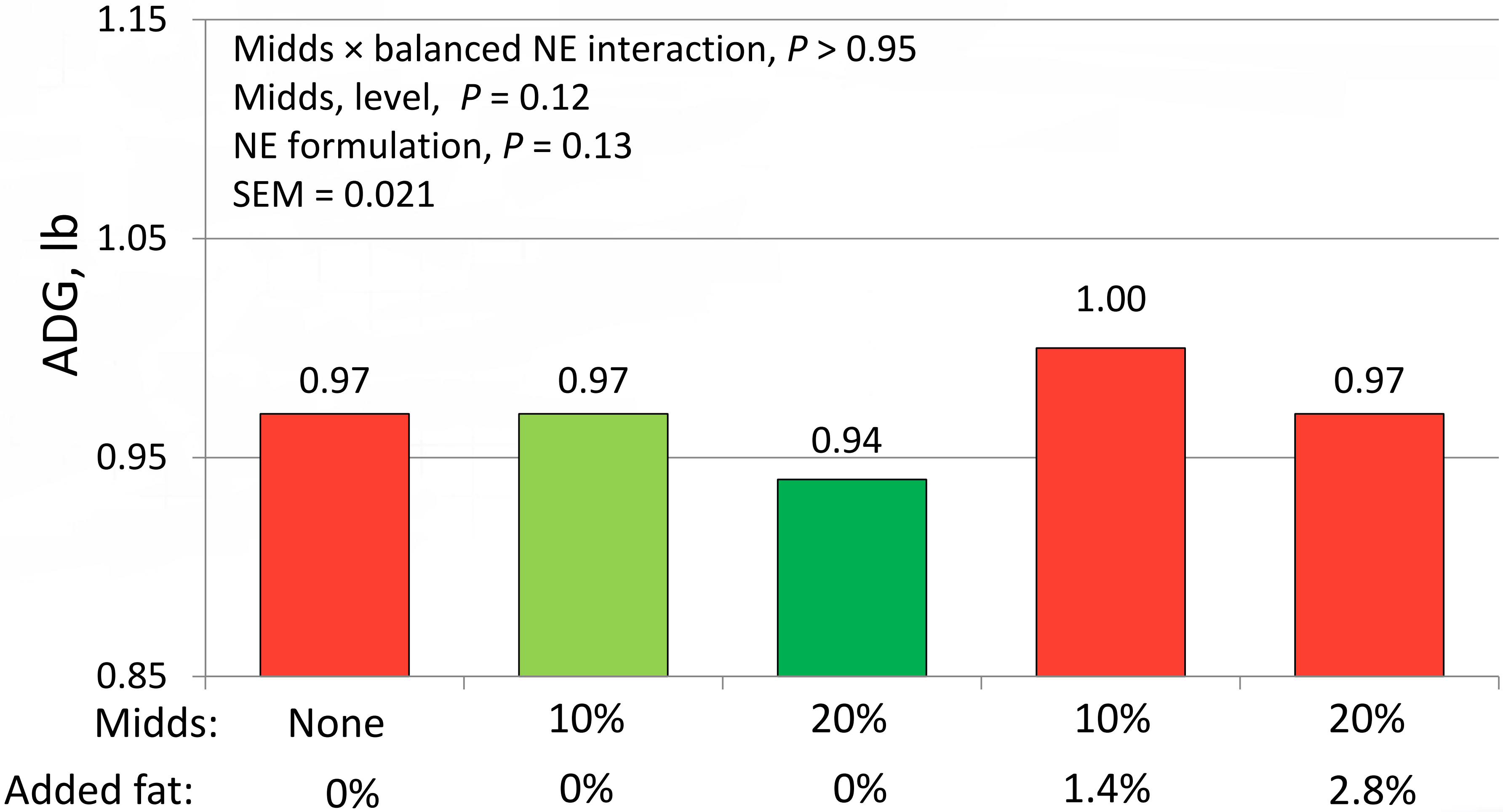


K·STATE Research and Extension

De Jong et al., 2012

Knowledge for Life

Effect of Wheat Middlings and NE Formulation on nursery pig performance (d 0 to 29; BW 15 to 43 lb)

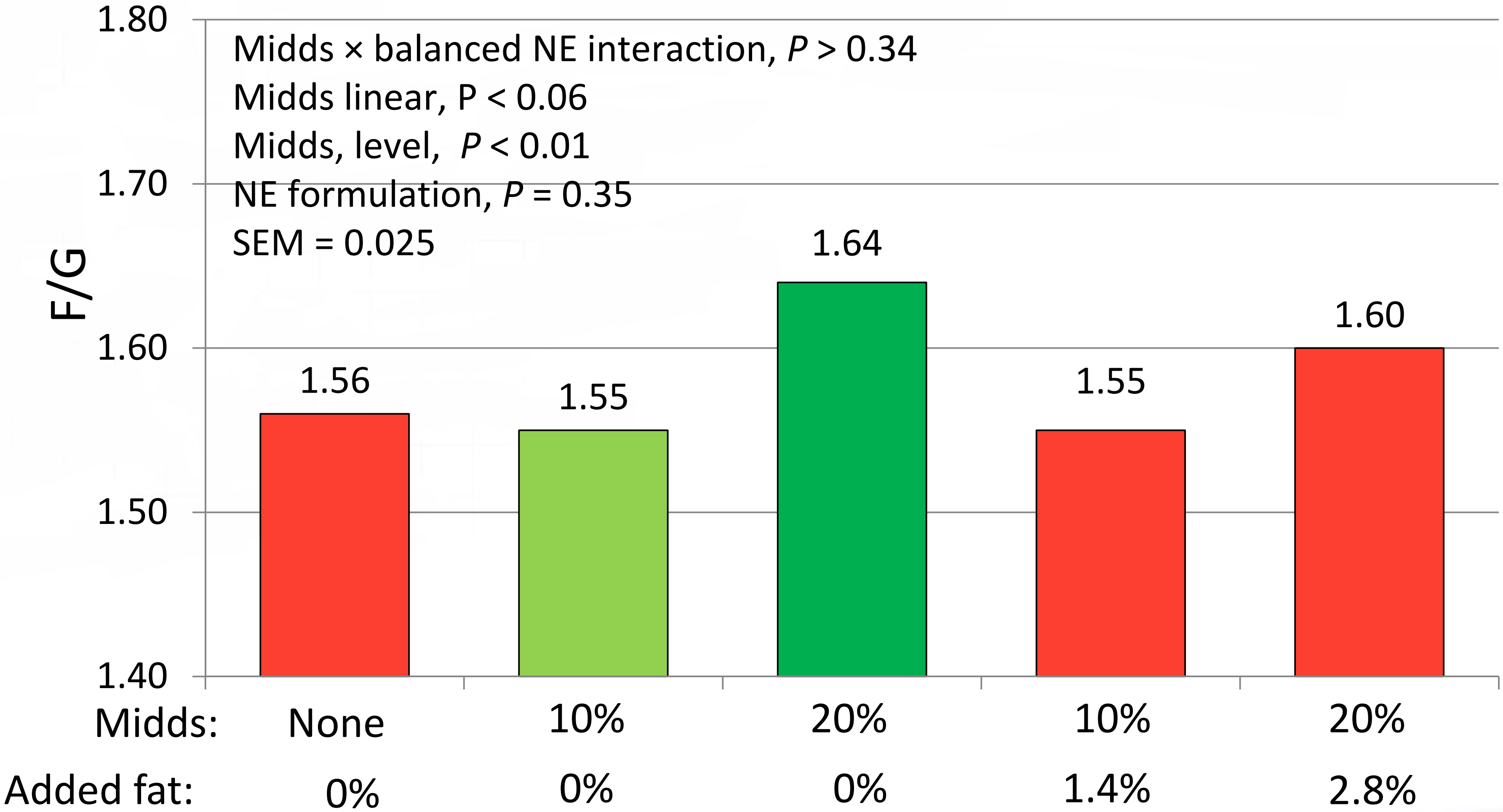


De Jong et al., 2012

K·STATE Research and Extension

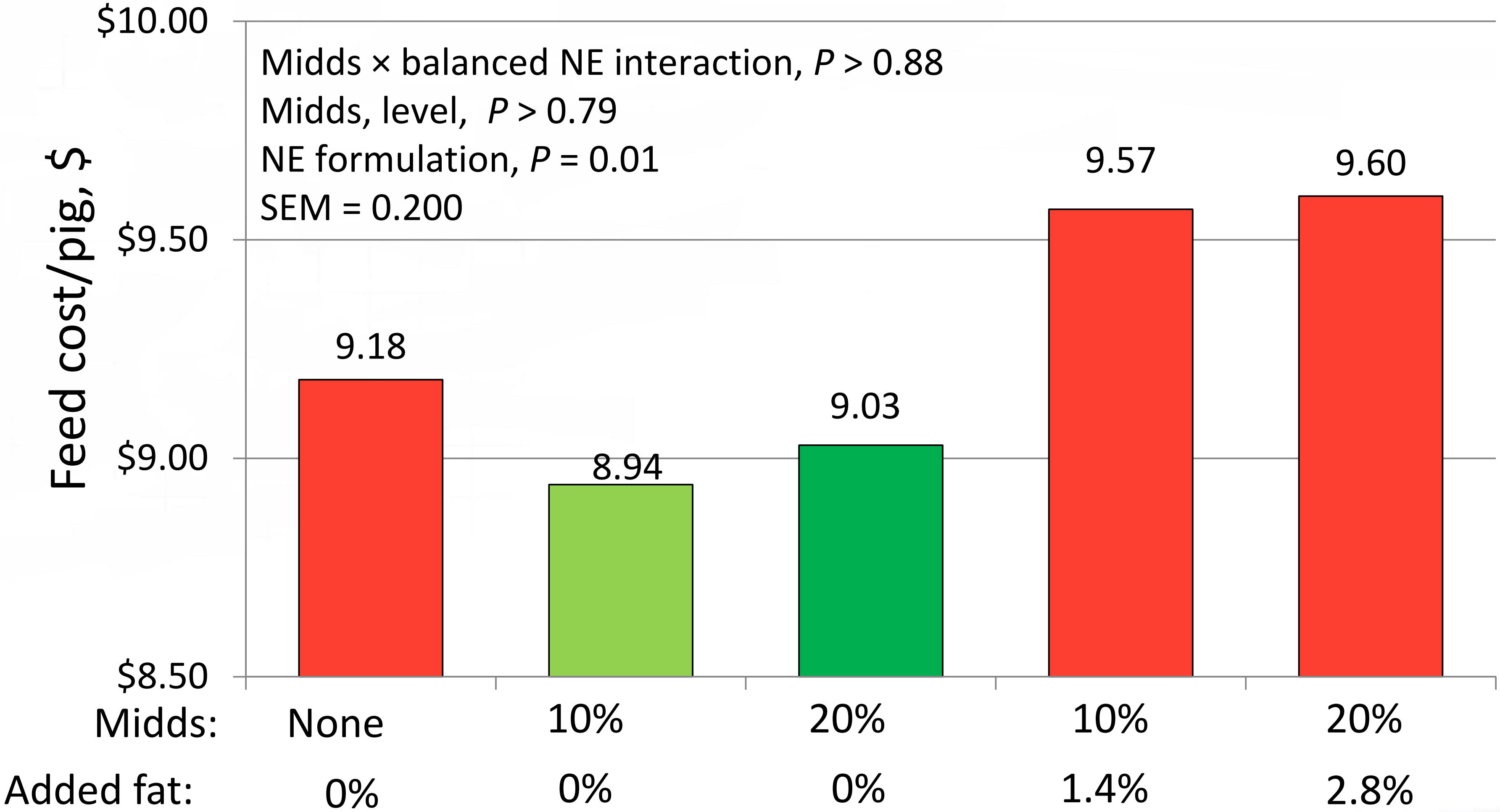
Knowledge for Life

Effect of Wheat Middlings and NE Formulation on nursery pig performance (d 0 to 29; BW 15 to 43 lb)



De Jong et al., 2012

Economics of increasing Wheat Middlings and NE Formulation in nursery pigs (d 0 to 29; BW 15 to 43 lb)

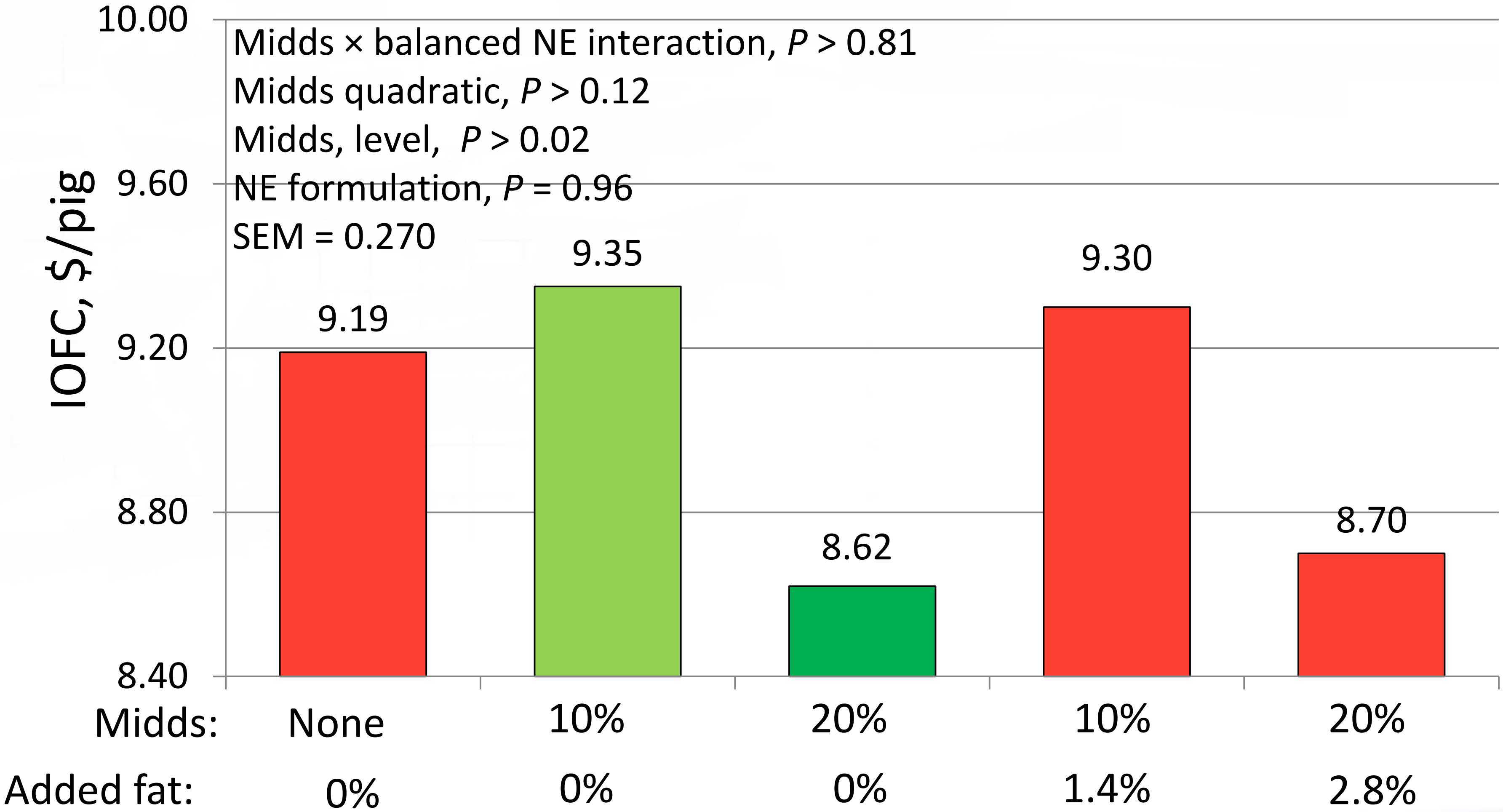


De Jong et al., 2012

K·STATE Research and Extension

Knowledge for Life

Economics of increasing Wheat Middlings and NE Formulation in nursery pigs (d 0 to 29; BW 15 to 43 lb)



De Jong et al., 2012

K·STATE Research and Extension

Knowledge for Life

KANSAS STATE UNIVERSITY

SWINE INDUSTRY DAY

KSU Swine Day 2012

Morning – Sows (Vitamin E, carnitine, chromium)

Vitamin D

Feed additives

Afternoon – Nursery (soy hulls, wheat middlings)

Grow-finish

- Wheat
- DDGS (low vs high oil)
- Feed processing
- Improvest
- Marketing

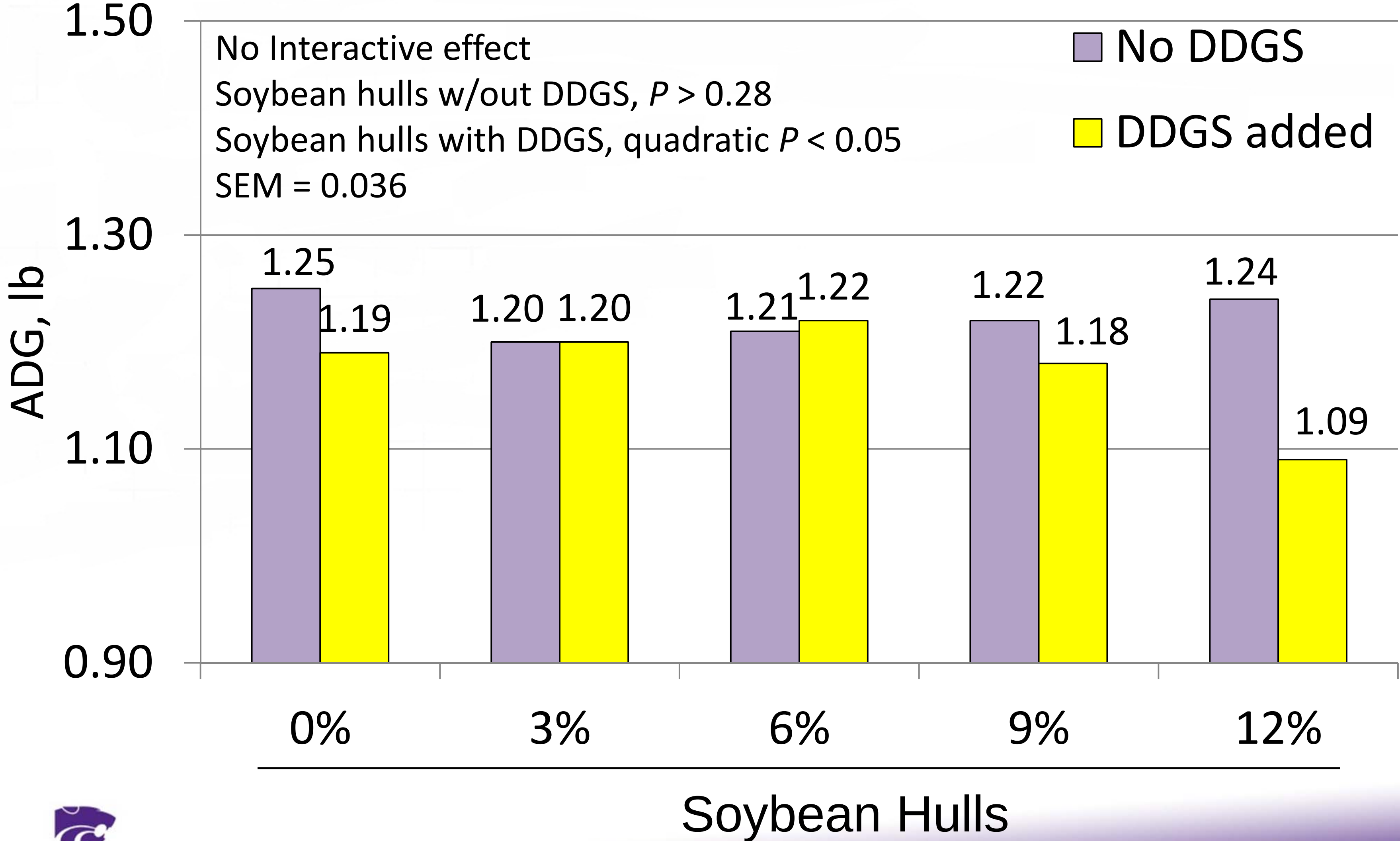
K·STATE Research and Extension

Knowledge for Life

Soybean Hulls

- During the soybean crush process, the hulls is separated which represents ~8% of the seed.
- Soybean hulls
  - 10.3% CP; 1.3% fat; 50% the ME of corn (NRC, 2012).
- High fiber, bulky ingredient typically used in ruminant rations.
- Very little information is available on nursery and finishing diets.
  - Research supported by National Pork Board

Effect of Soybean Hulls and DDGS in nursery pig diets (Exp. 1, d 0 to 42; BW 15 to 65 lb)

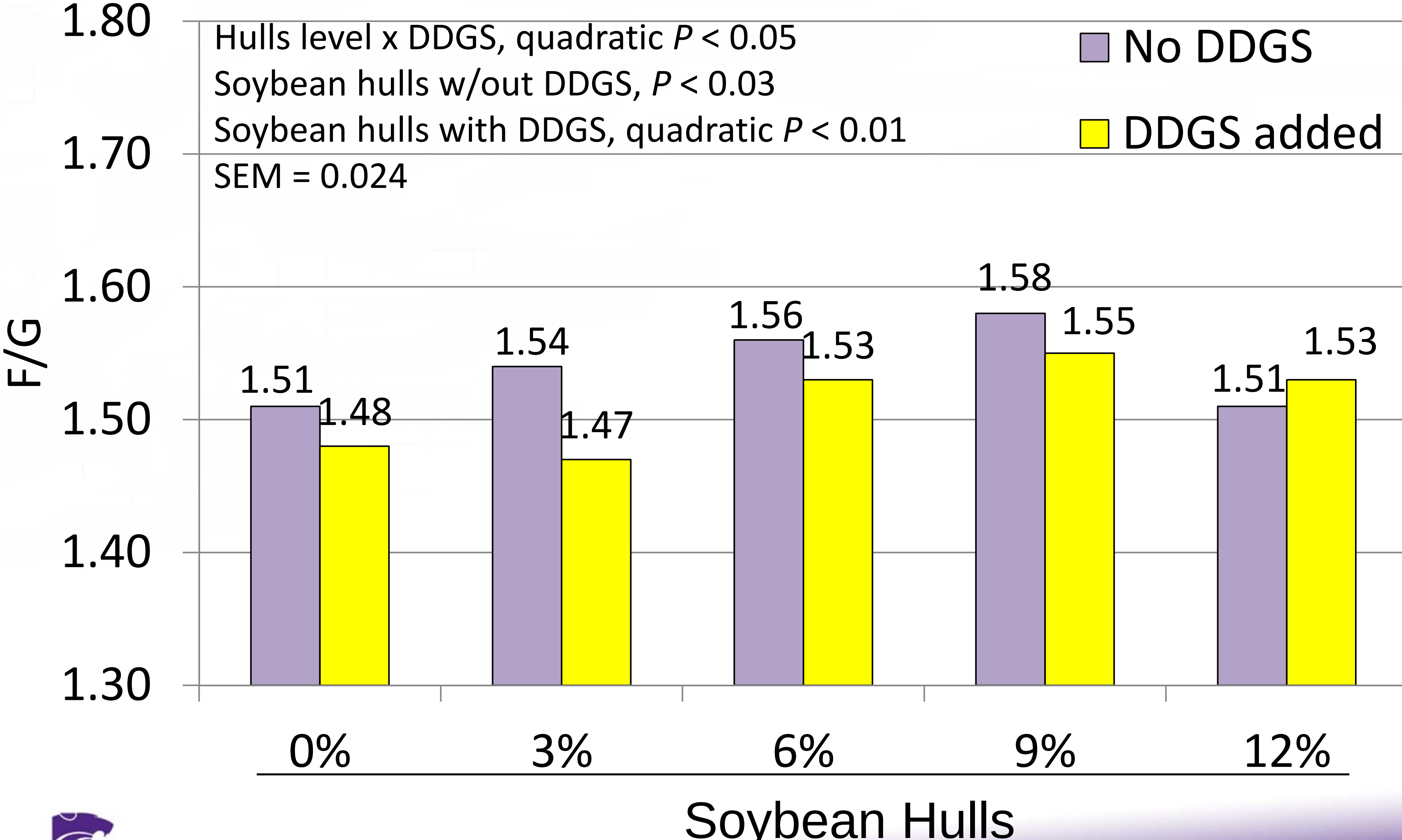


Goehring et al., 2012

K·STATE Research and Extension

Knowledge for Life

Effect of Soybean Hulls and DDGS in nursery pig diets (Exp. 1, d 0 to 42; BW 15 to 65 lb)

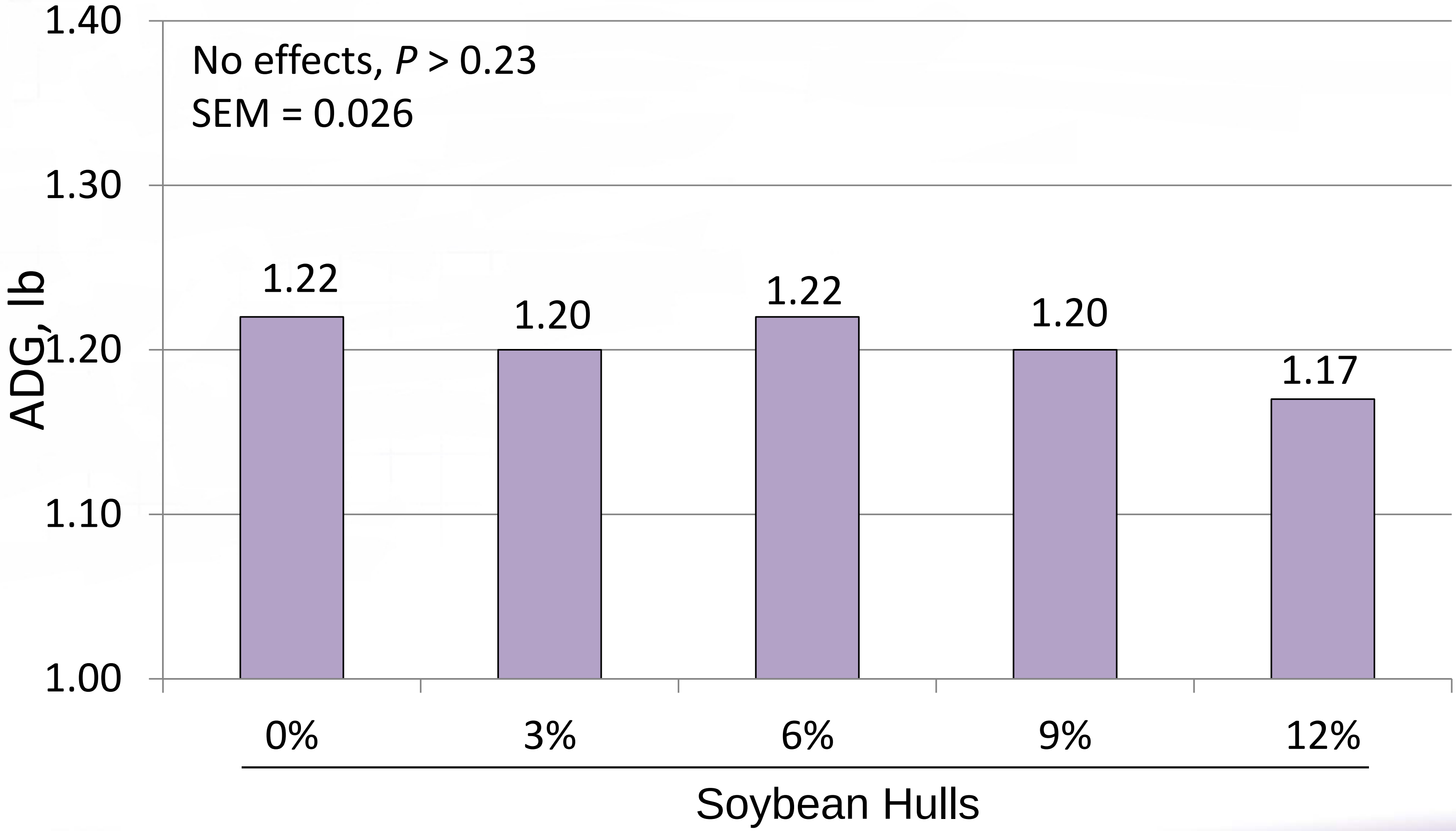


Goehring et al., 2012

K-STATE Research and Extension

Knowledge for Life

Main Effects of Soybean Hulls on nursery pig performance (Exp. 1, d 0 to 42; BW 15 to 65 lb)

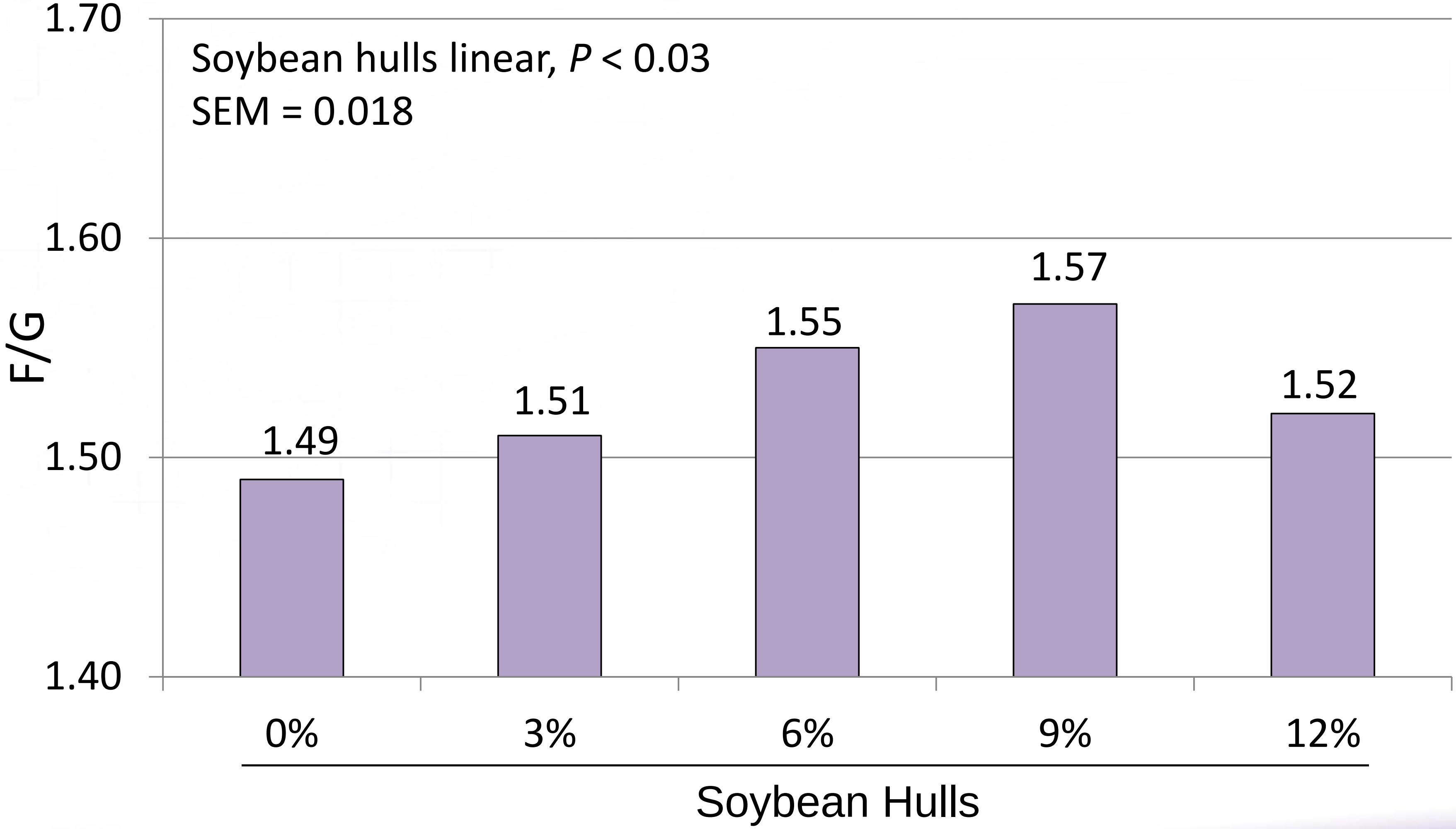


Goehring et al., 2012

K-STATE Research and Extension

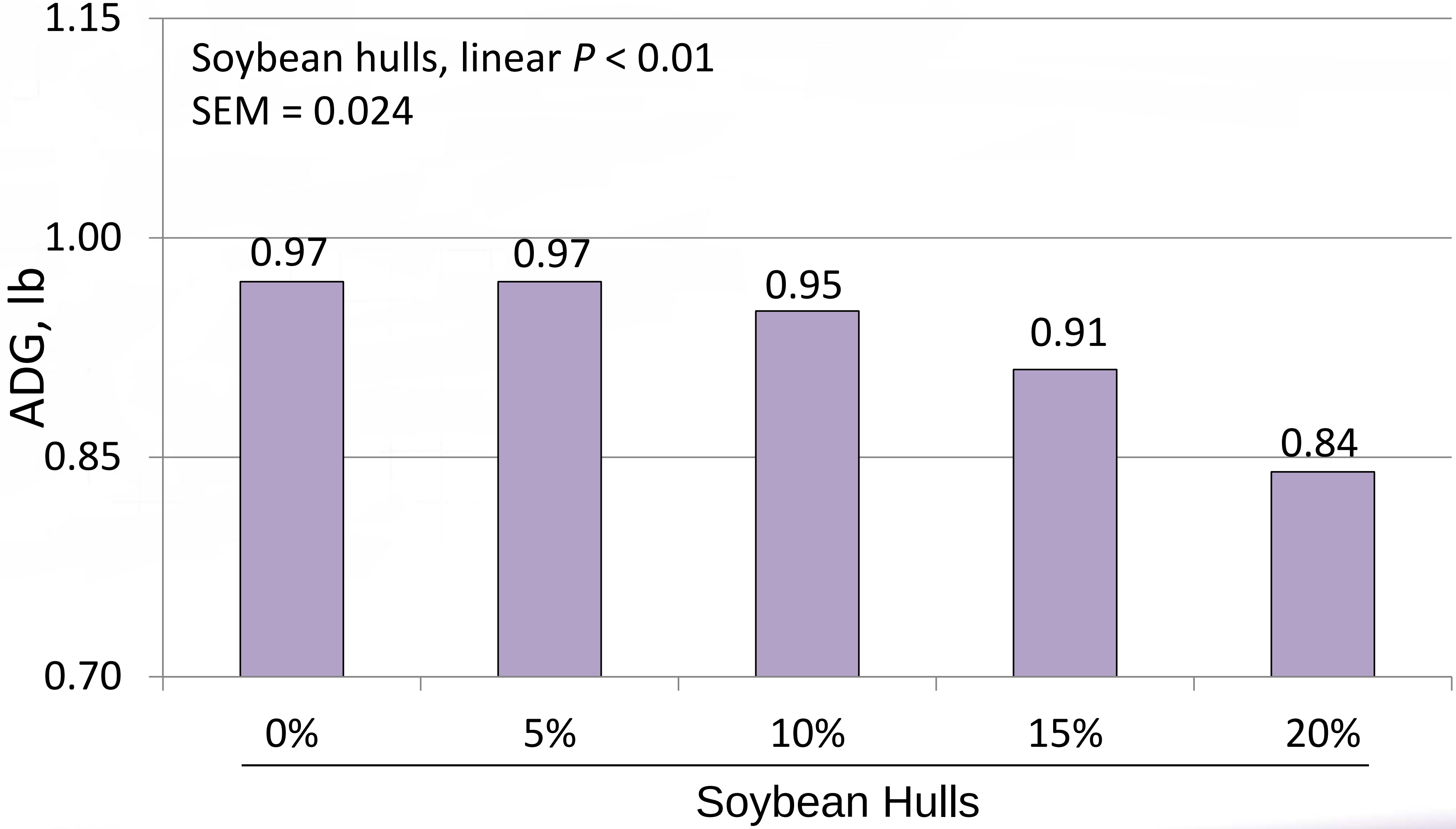
Knowledge for Life

Main Effects of Soybean Hulls on nursery pig performance (Exp. 1, d 0 to 42; BW 15 to 65 lb)



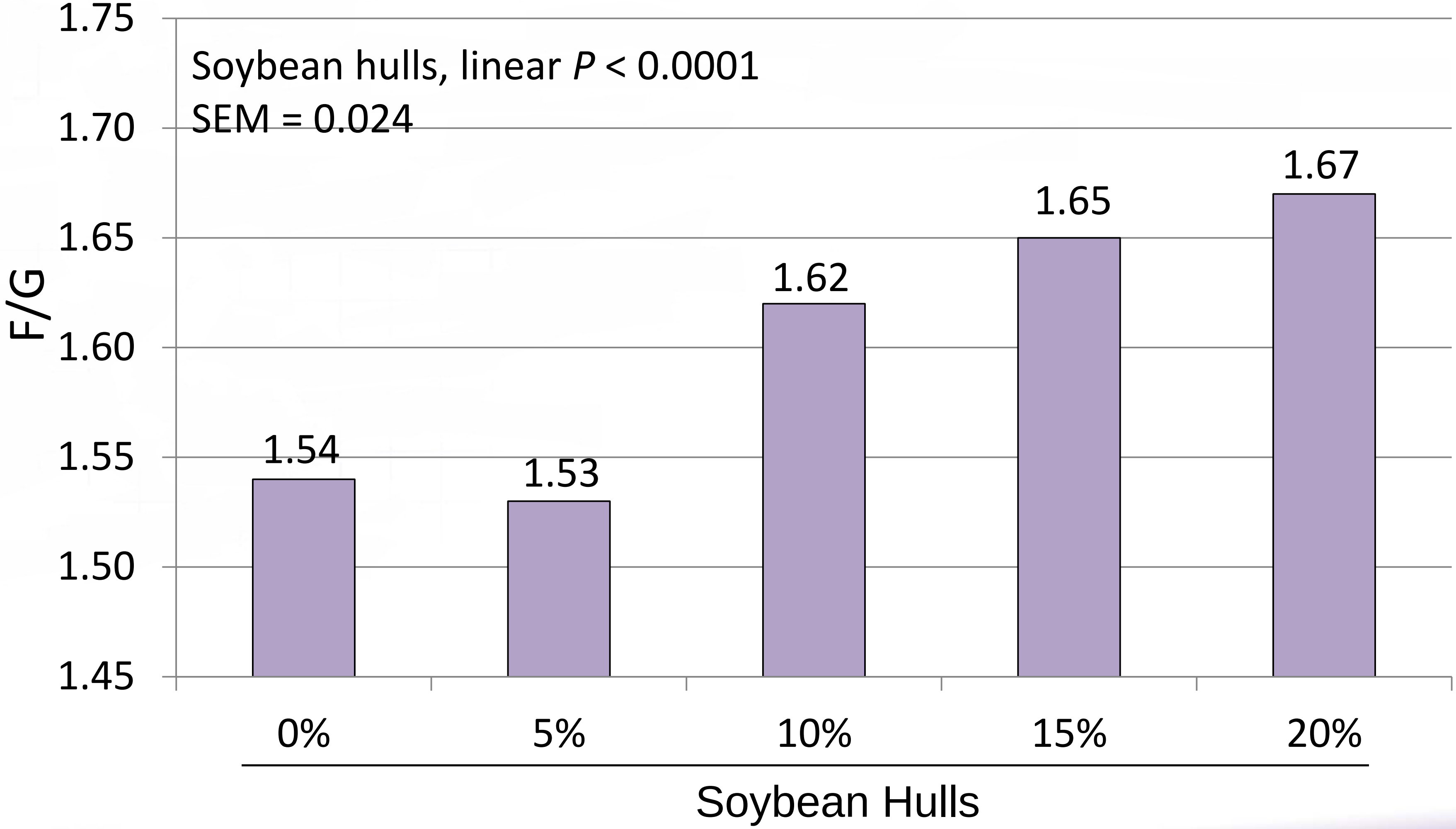
Goehring et al., 2012

Effects of Soybean Hulls on nursery pig performance (Exp. 3, d 0 to 34; BW 15 to 47 lb)



Goehring et al., 2012

Effects of Soybean Hulls on nursery pig performance (Exp. 3, d 0 to 34; BW 15 to 47 lb)

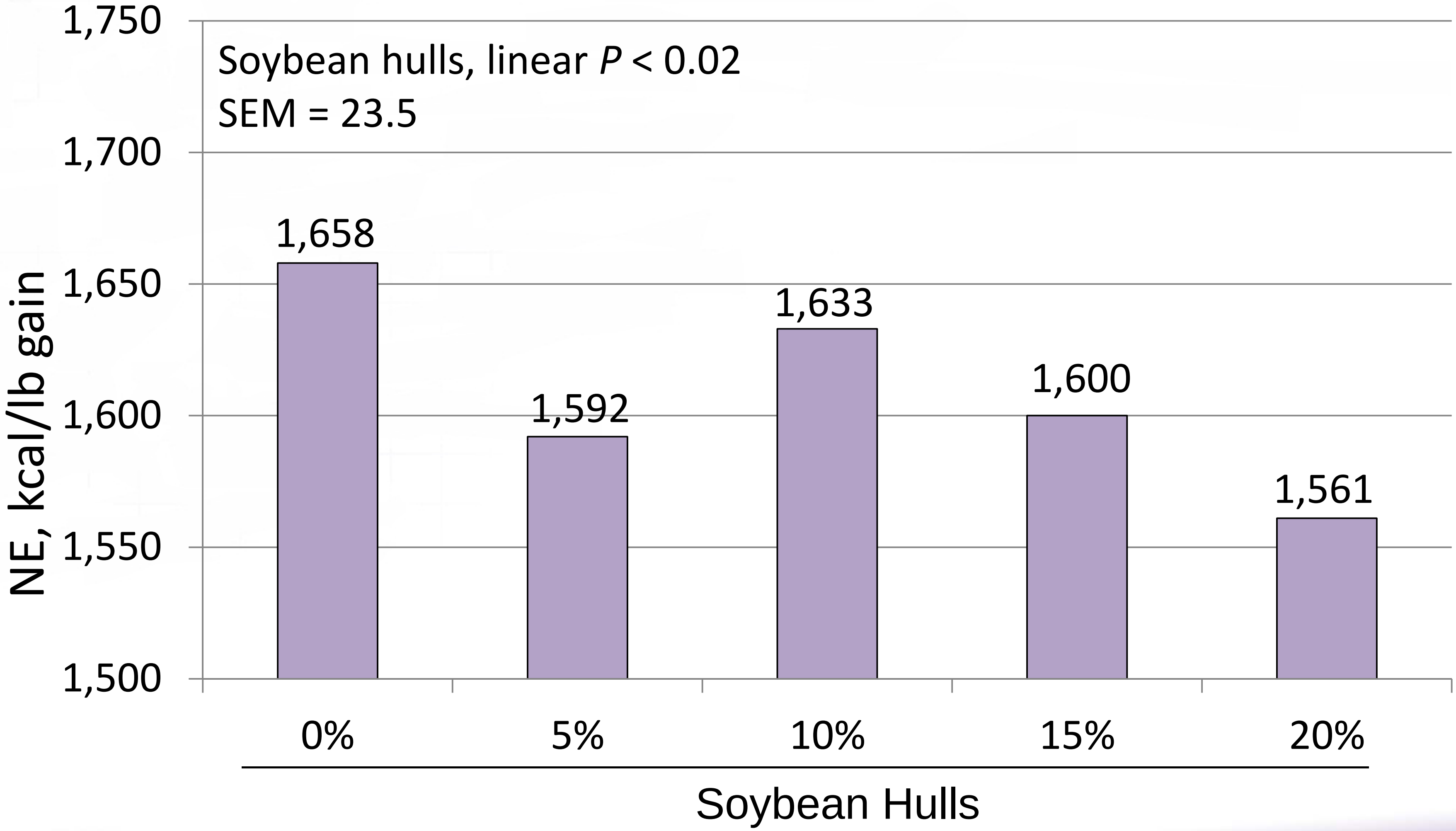


K-STATE Research and Extension

Goehring et al., 2012

Knowledge for Life

Effects of Soybean Hulls on nursery pig performance (Exp. 3, d 0 to 34; BW 15 to 47 lb)

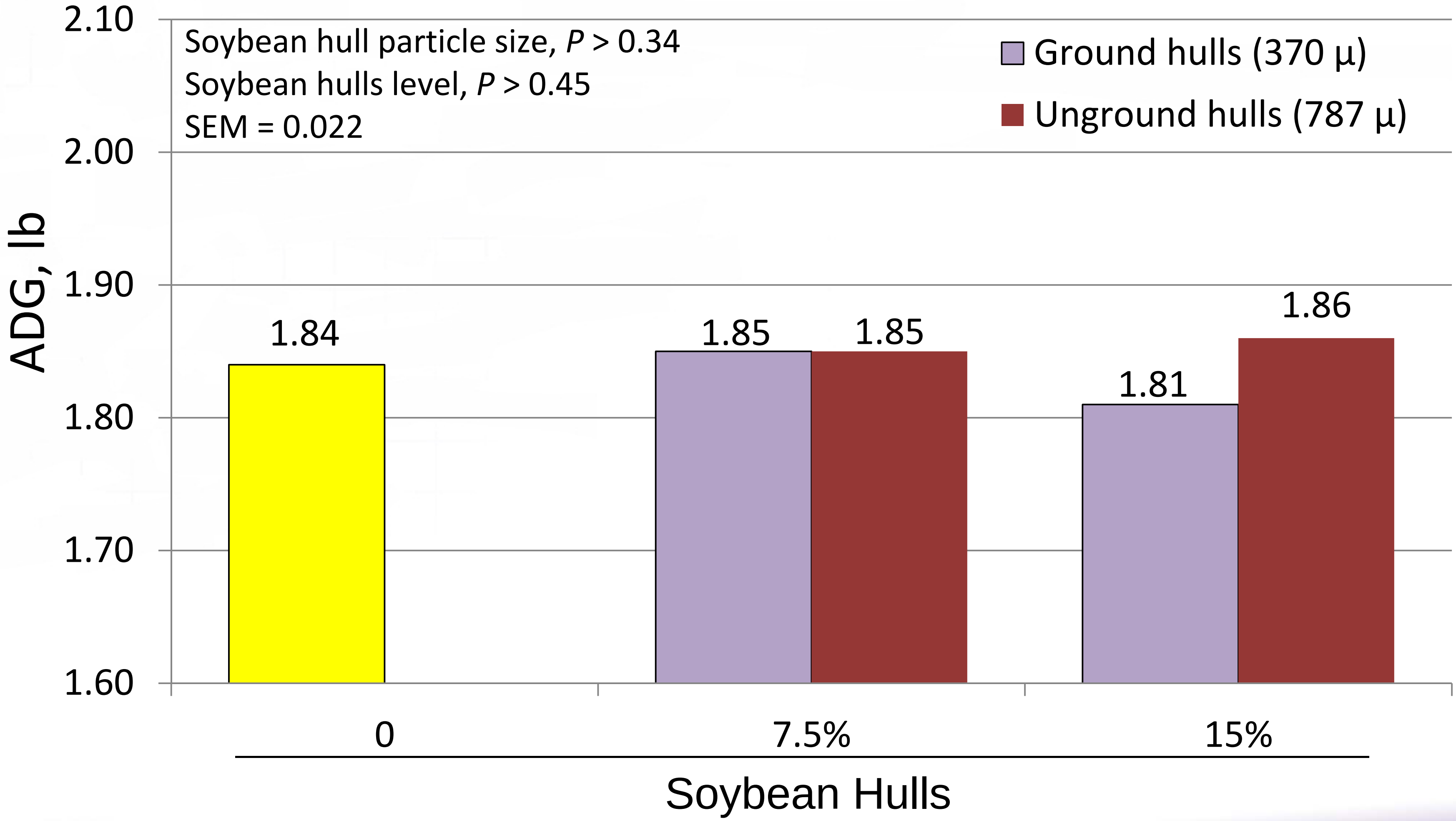


K·STATE Research and Extension

Goehring et al., 2012

Knowledge for Life

Effects of soybean hulls level and particle size on finishing pigs (0 to 118; BW 68 to 280 lb)

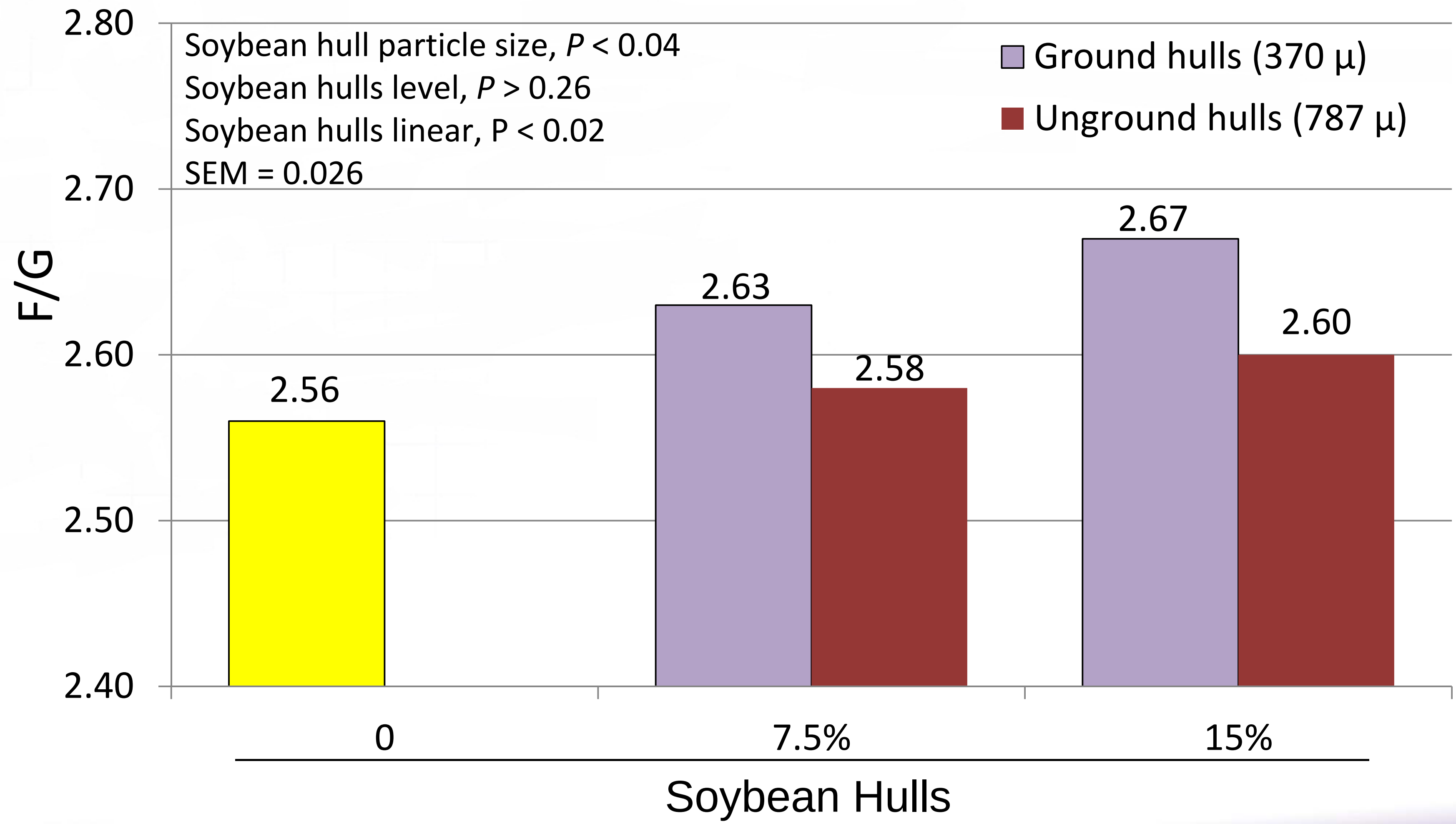


K-STATE Research and Extension

Goehring et al., 2012

Knowledge for Life

Effects of soybean hulls level and particle size on finishing pigs (0 to 118; BW 68 to 280 lb)

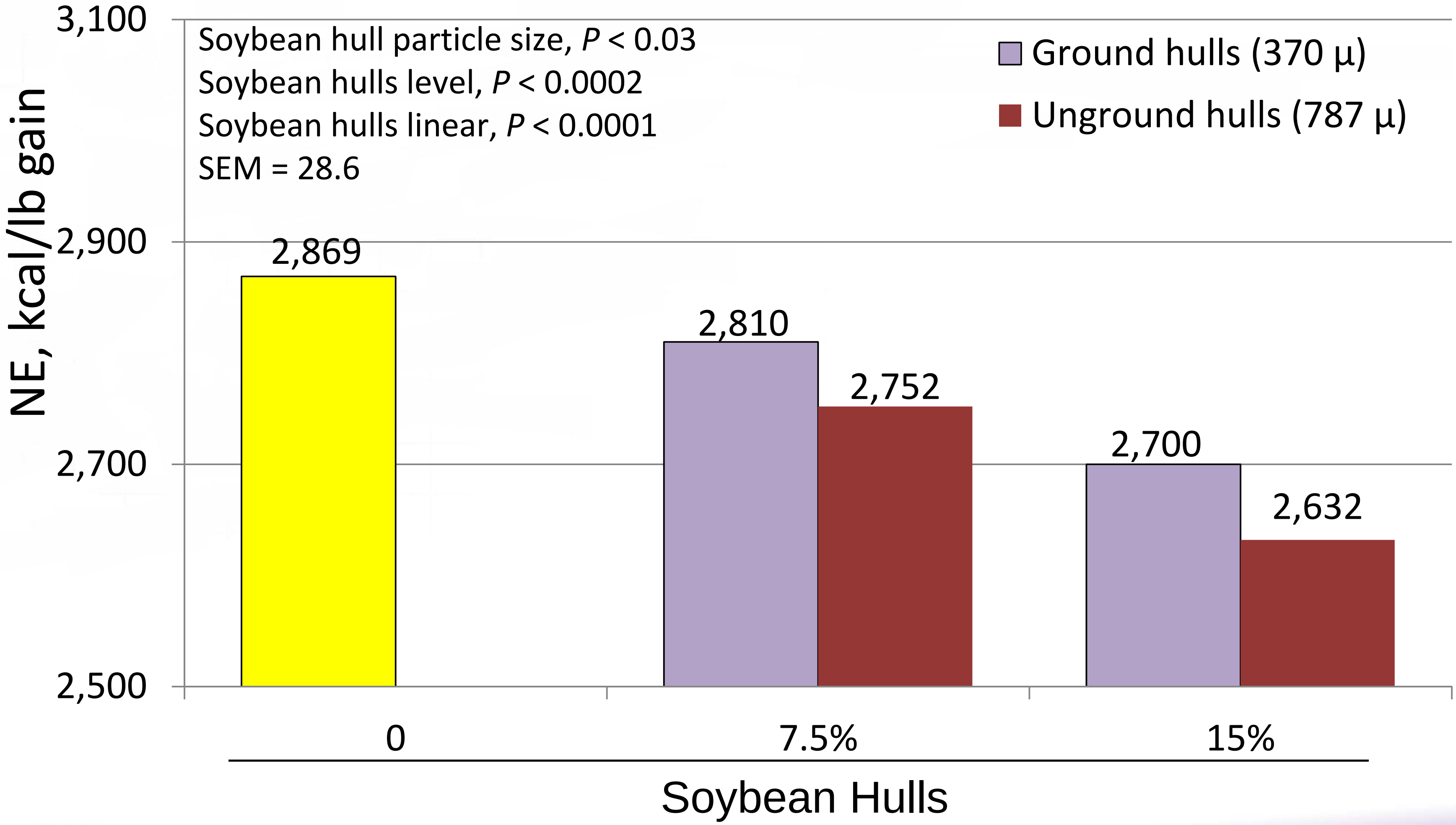


K·STATE Research and Extension

Goehring et al., 2012

Knowledge for Life

Effects of soybean hulls level and particle size on finishing pigs (0 to 118; BW 68 to 280 lb)

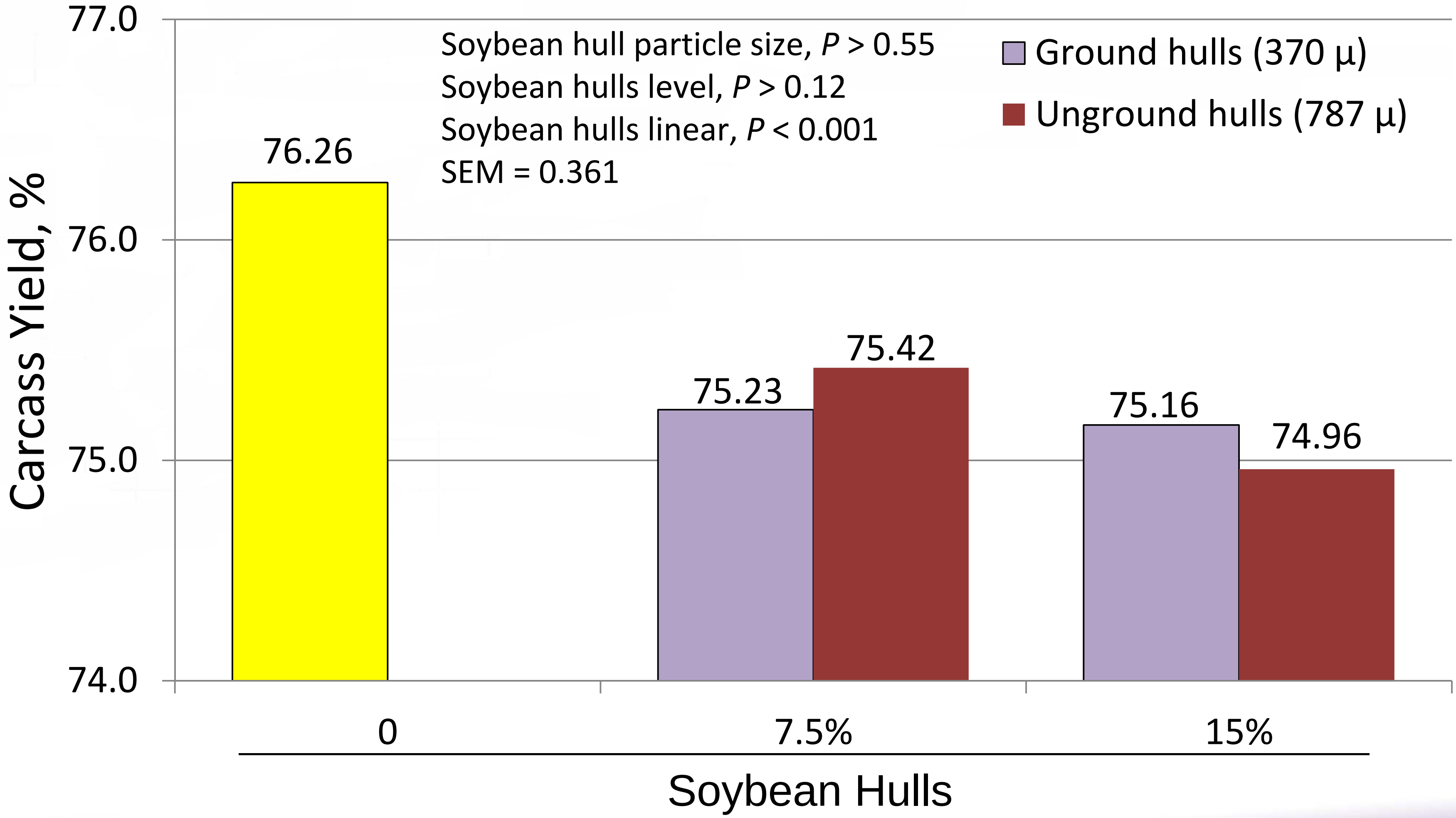


Goehring et al., 2012

K·STATE Research and Extension

Knowledge for Life

Effects of soybean hulls level and particle size on finishing pigs (0 to 118; BW 68 to 280 lb)



Goehring et al., 2012

K·STATE Research and Extension

Knowledge for Life

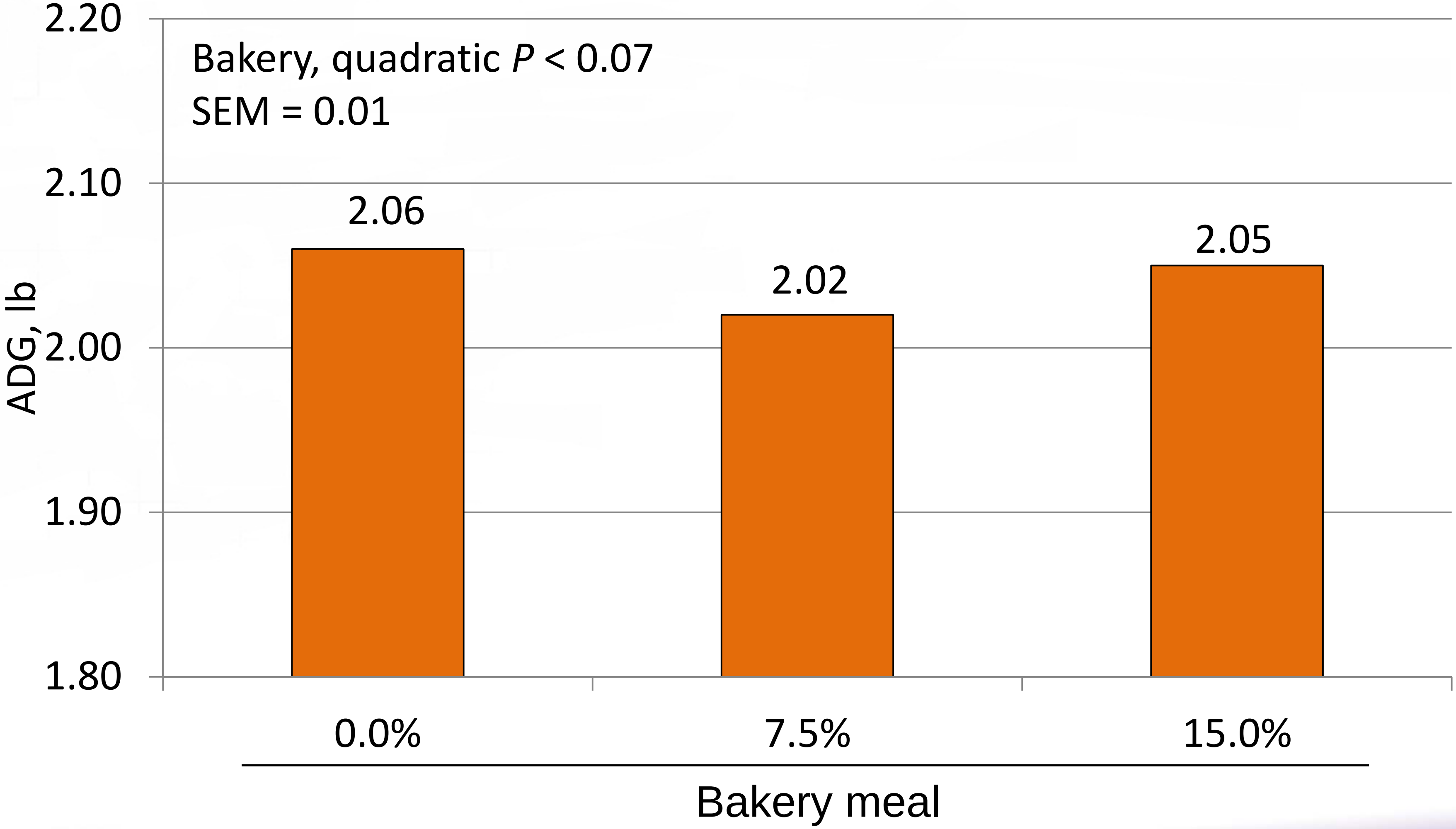
Soybean Hulls Summary

- 5-10% in nursery diets had minimal effects on growth performance.
- 7.5% in finishing did not affect ADG or F/G
- Grinding soybean hulls did not improve performance in nursery and finishing pigs.
- Feeding soybean hulls through marketing reduces carcass yield, similar to other high fiber containing ingredients.

Bakery Meal

- **<u>Things to recognize:</u>**
- Bakery products can vary in fat content which directly affects the assigned energy value.
  - NRC, 2012
    - Bakery = 8.1% fat, 1,749 kcal/lb ME (+13.6% ↑ME vs. corn)
    - Corn = 3.5% fat, 1,540 kcal/lb ME
- Many bakery products contain lower levels of fat then book values. Recent analysis from a Midwest commercial mill using bakery:
    - Bakery = 6.4% Fat, Calculated ME value was 92% of corn

Effects of bakery meal on finishing pig performance (Exp. 1, d 0 to 102; BW 78 to 280 lb)



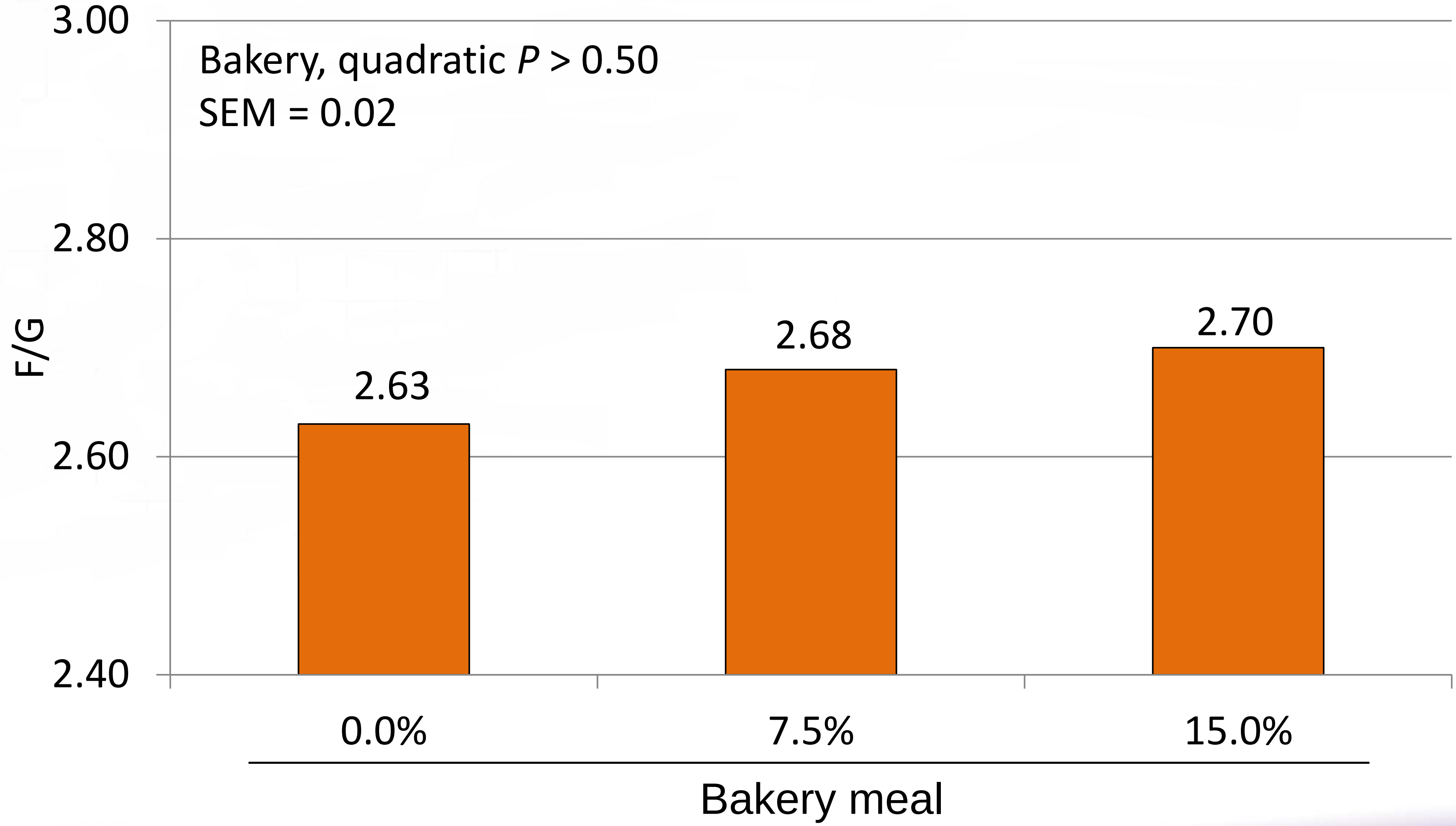
Paulk et al., 2012

K·STATE Research and Extension

New Horizon Farms LLP

Knowledge for Life

Effects of bakery meal on finishing pig performance (Exp. 1, d 0 to 102; BW 78 to 280 lb)



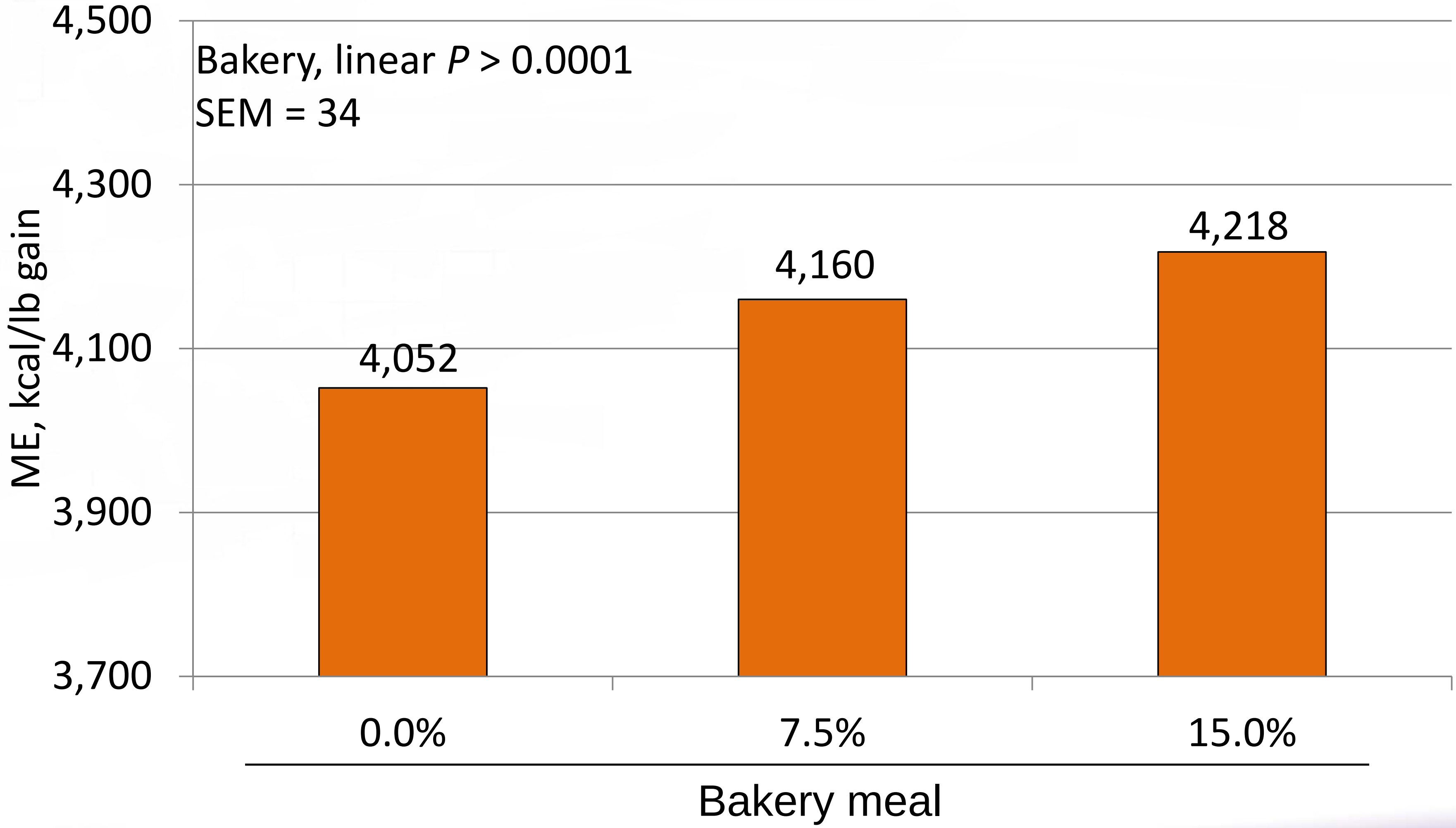
K·STATE Research and Extension

NEW HORIZON FARMS LLP

Paulk et al., 2012

Knowledge for Life

Effects of bakery meal on finishing pig performance (Exp. 1, d 0 to 102; BW 78 to 280 lb)



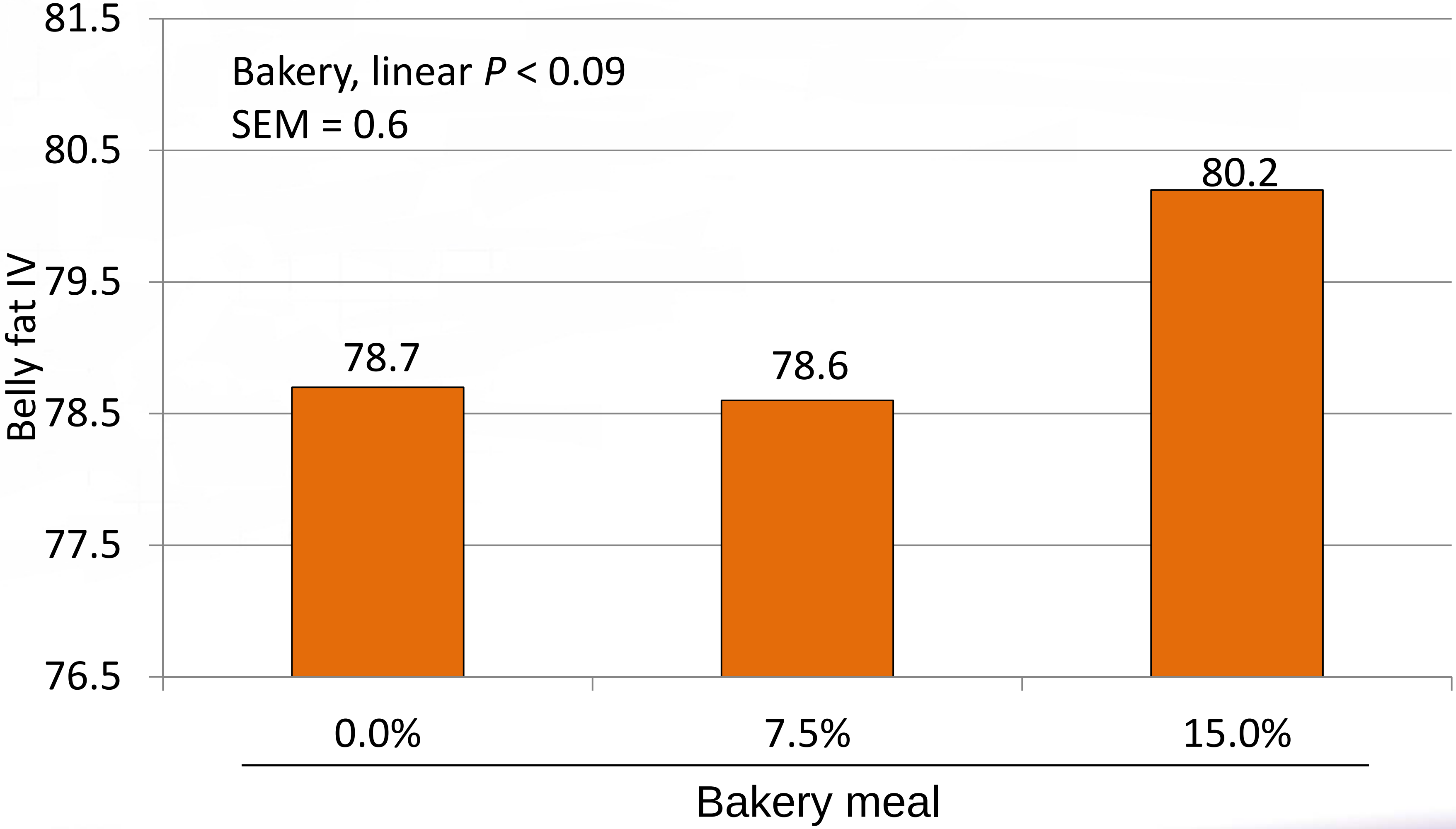
Paulk et al., 2012

K-STATE Research and Extension

New Horizon Farms LLP

Knowledge for Life

Effects of bakery meal on finishing pig performance (Exp. 1, d 0 to 102; BW 78 to 280 lb)



K·STATE Research and Extension

New Horizon Farms LLP

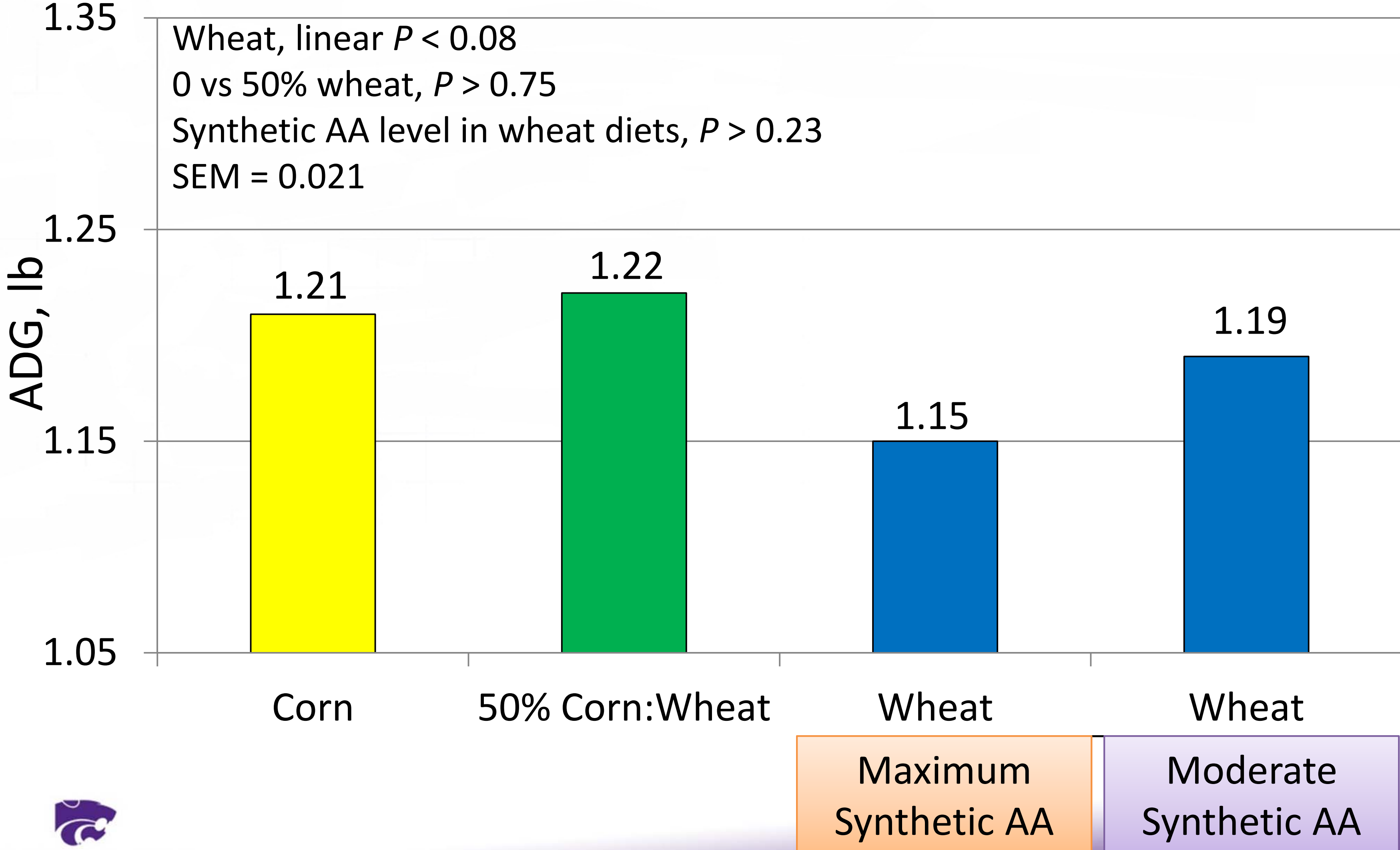
Paulk et al., 2012

Knowledge for Life

Feeding Wheat to Swine

- **Nutrient differences wheat vs. corn:**
  - Lysine: 35% more SID lysine; (CP: 13.5. vs 8.5%)
  - ME: 6% less energy; (1,456 vs. 1,551 kcal/lb)
  - Available Phosphorus: ~4 x higher (0.19 vs. 0.04%)
- **Ingredient changes:**
  - Less soybean meal and supplemental phosphorus
  - Higher synthetic lysine use is possible
  - Can add fat to balance dietary energy
- **Grinding:**
  - Still target 600-700 microns
  - More "flouring" occurs as wheat is more finely ground

Effects of wheat and synthetic amino acid level on nursery pig performance (d 0 to 21; BW 27 to 52 lb)

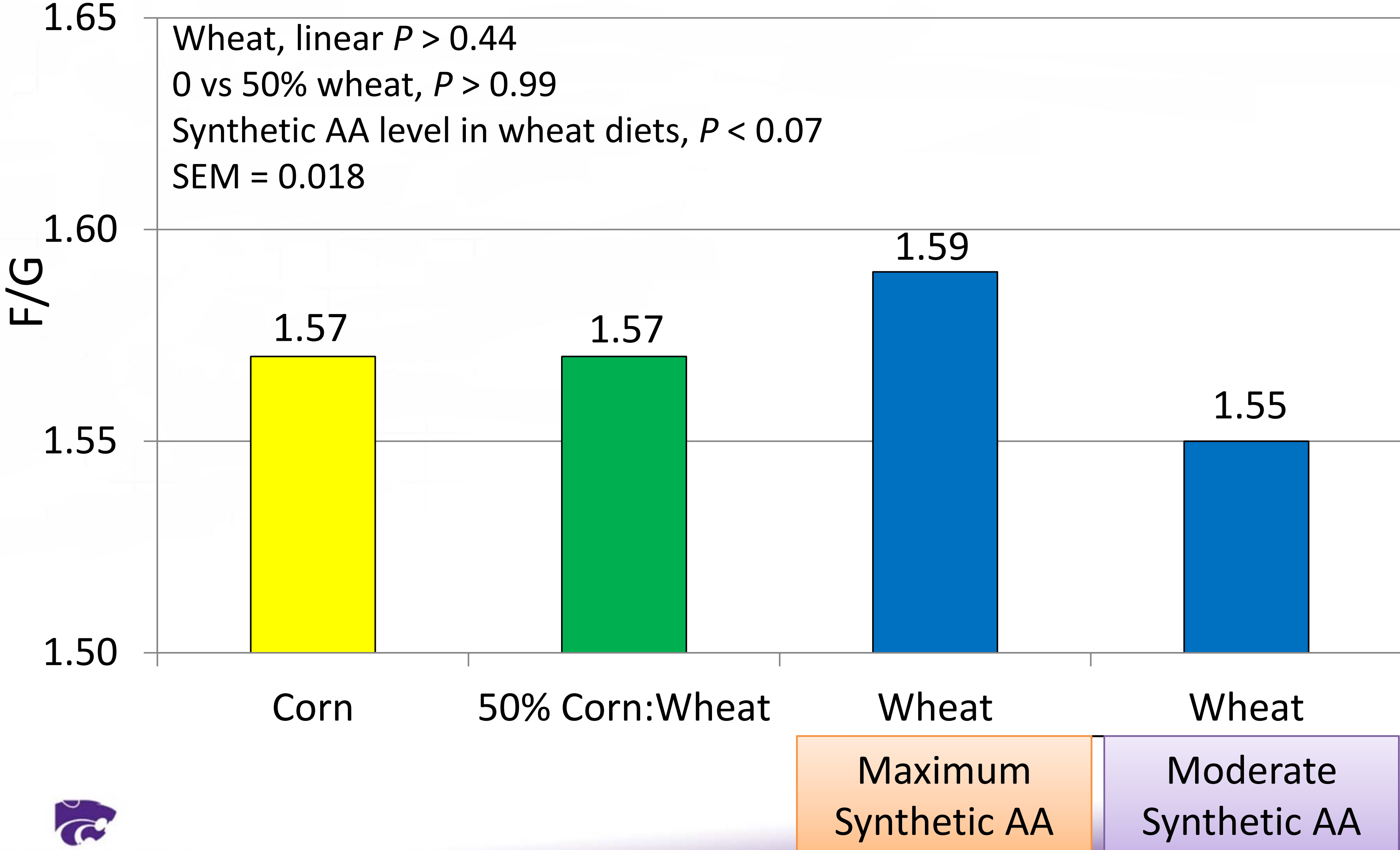


K·STATE Research and Extension

Goehring et al., 2012

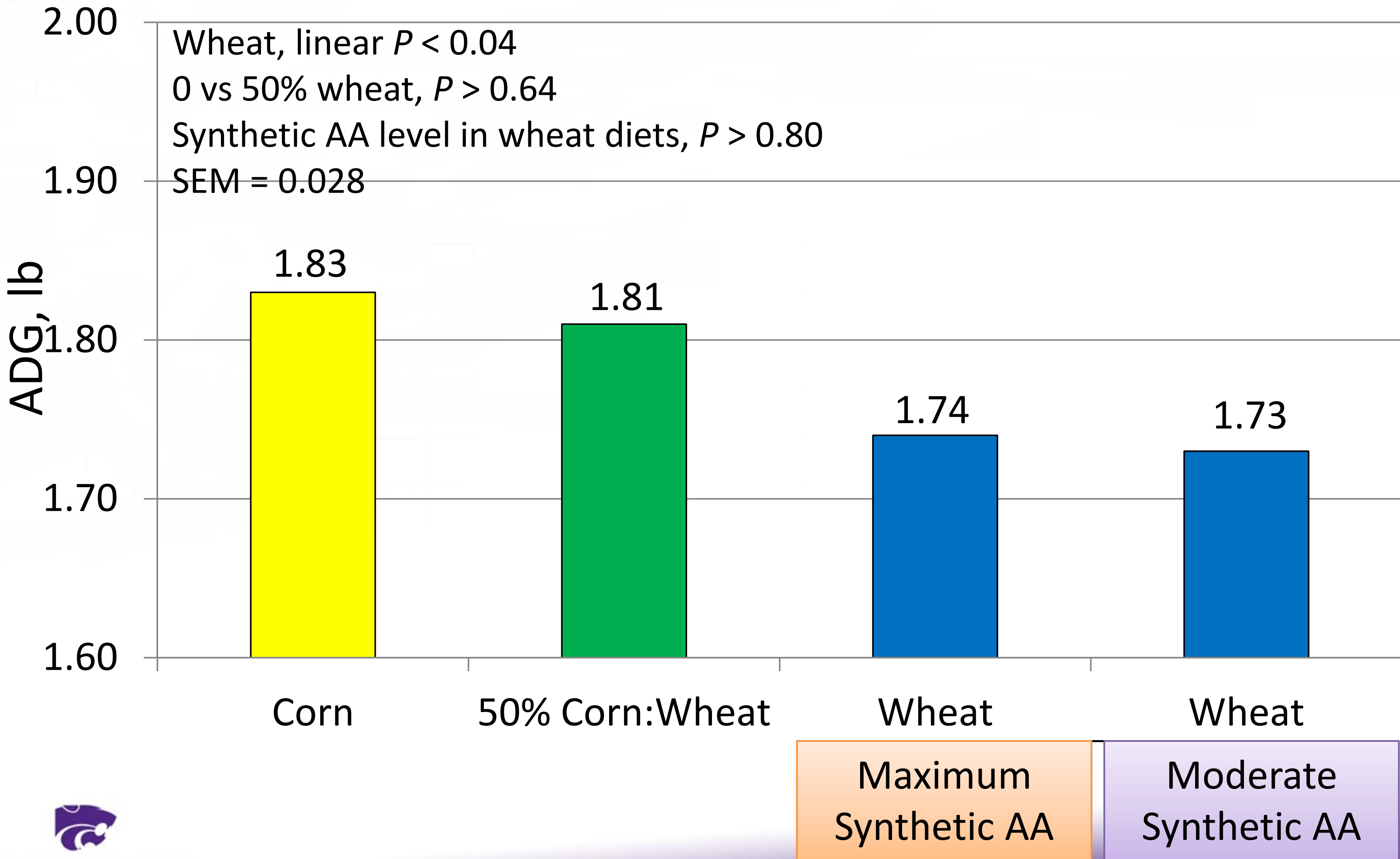
Knowledge for Life

Effects of wheat and synthetic amino acid level on nursery pig performance (d 0 to 21; BW 27 to 52 lb)



Goehring et al., 2012

Effects of wheat and synthetic amino acid level on finishing pig performance (d 0 to 61; BW 160 to 270 lb)

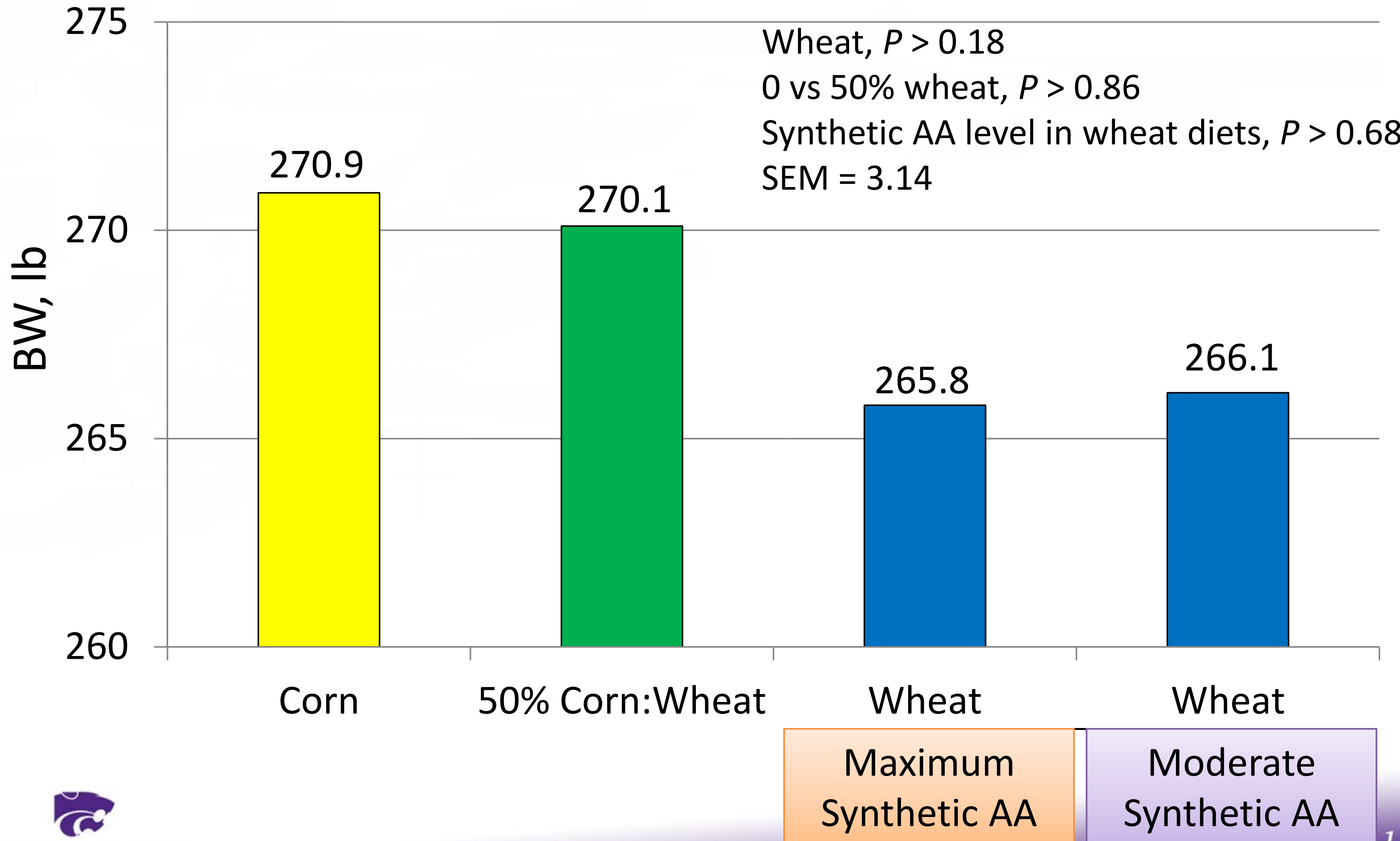


K·STATE Research and Extension

Goehring et al., 2012

Knowledge for Life

Effects of wheat and synthetic amino acid level on finishing pig performance (d 0 61)

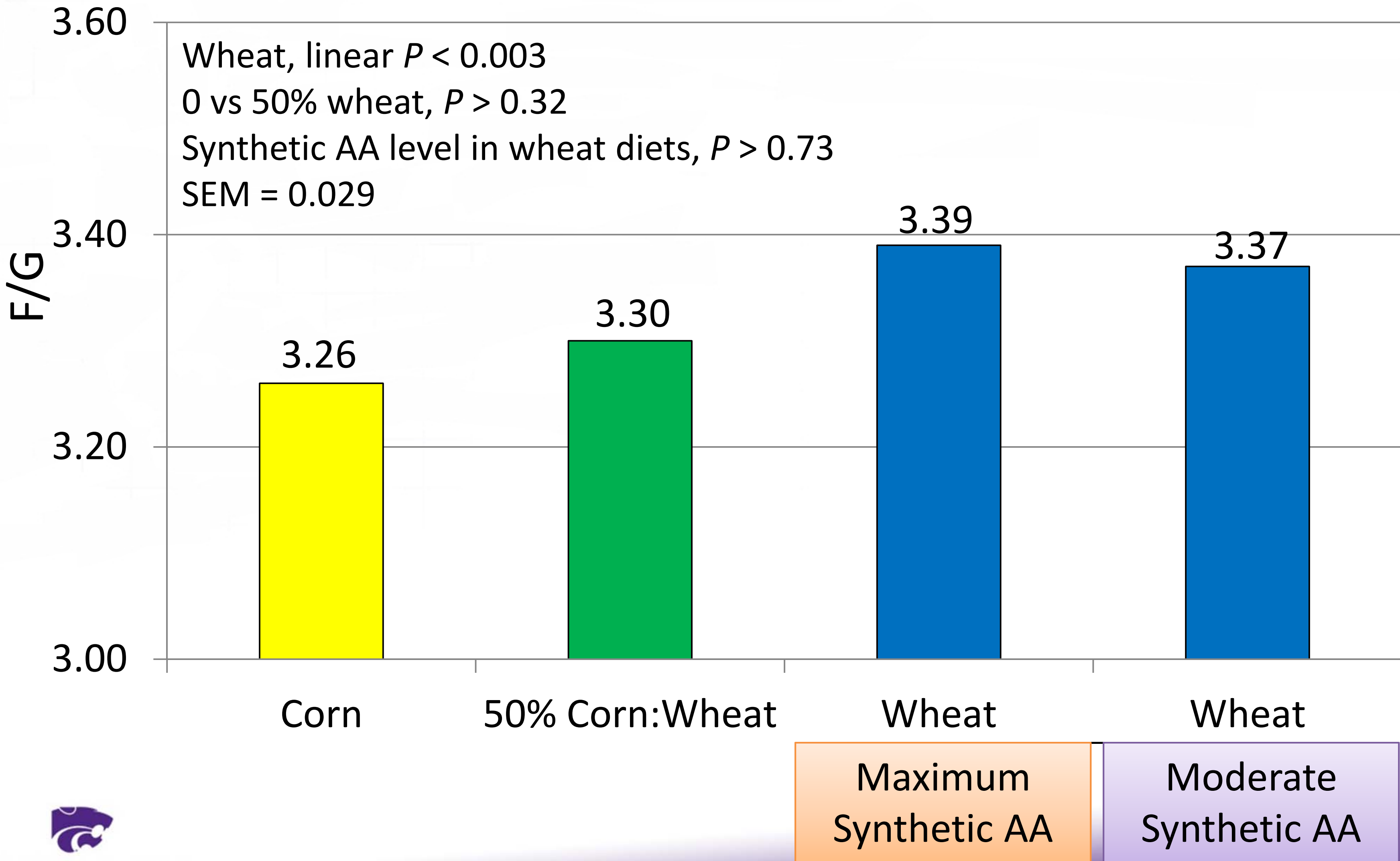


K·STATE Research and Extension

Goehring et al., 2012

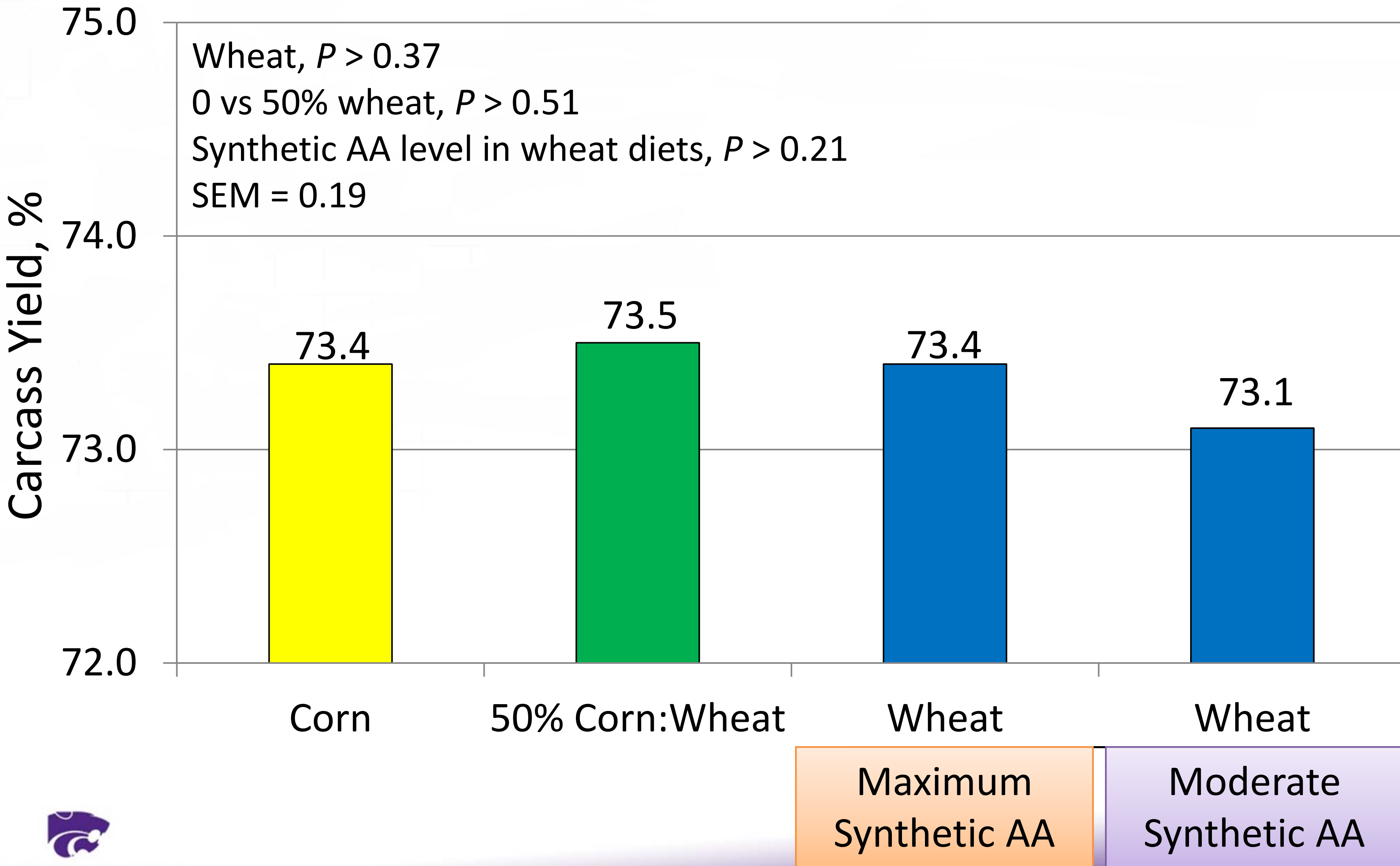
Knowledge for Life

Effects of wheat and synthetic amino acid level on finishing pig performance (d 0 to 61; BW 160 to 270 lb)



Goehring et al., 2012

Effects of wheat and synthetic amino acid level on finishing pig performance (d 0 61)

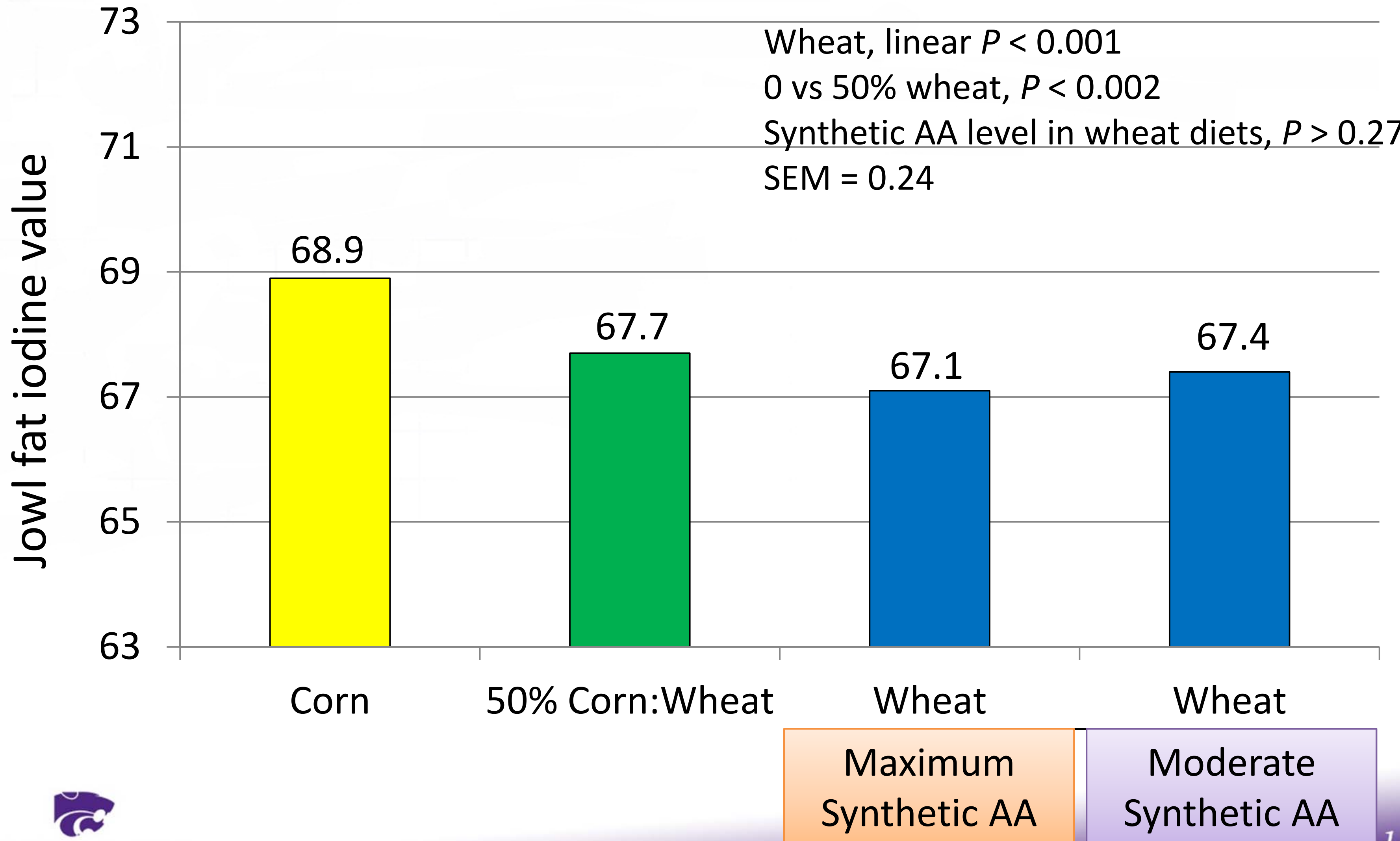


Goehring et al., 2012

K-STATE Research and Extension

Knowledge for Life

Effects of wheat and synthetic amino acid level on finishing pig performance (d 0 61)



Goehring et al., 2012

K·STATE Research and Extension

Knowledge for Life

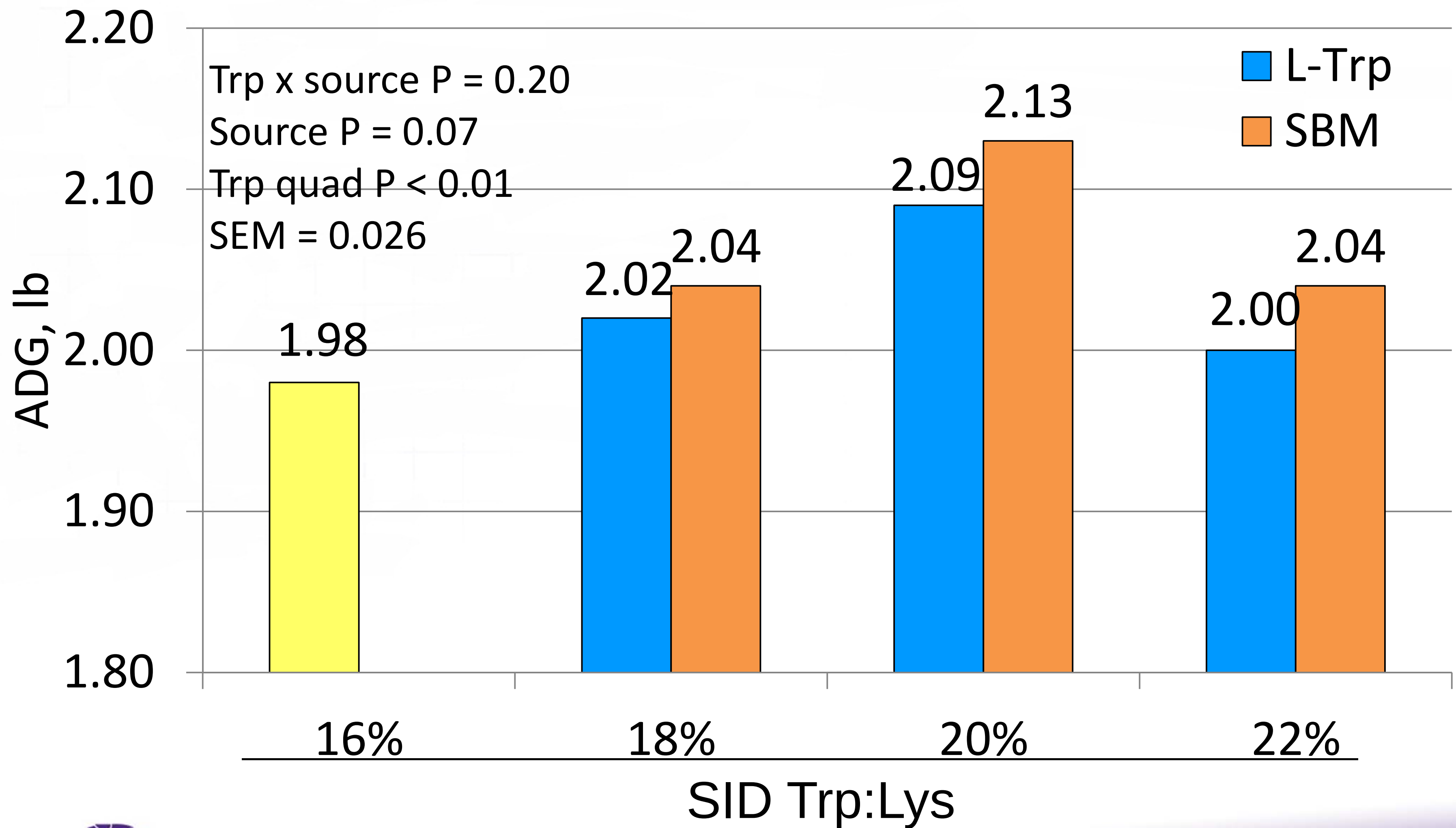
Feeding Wheat to Swine

- **<u>Anticipated performance and breakeven changes:</u>**
  - No added fat to balance energy:
    - Higher F/G (~+0.12 F/G from 50 - 250 lb)
    - Slightly lower ADG
    - Current breakeven:
      - 113% of corn price on bu:bu
      - 105% of corn price on wt:wt

Dried Distillers Grains with Solubles Research

1. Tryptophan requirements with DDGS
2. Fiber (from DDGS and wheat midds) withdrawal × Paylean
3. Medium-oil DDGS study
4. Evaluating energy in DDGS
5. Preliminary data - High- vs. low-oil DDGS

SID Trp:Lys ratio and Trp source for finishing pigs (Exp. 6; d 0 to 56; BW 156 to 285 lb)



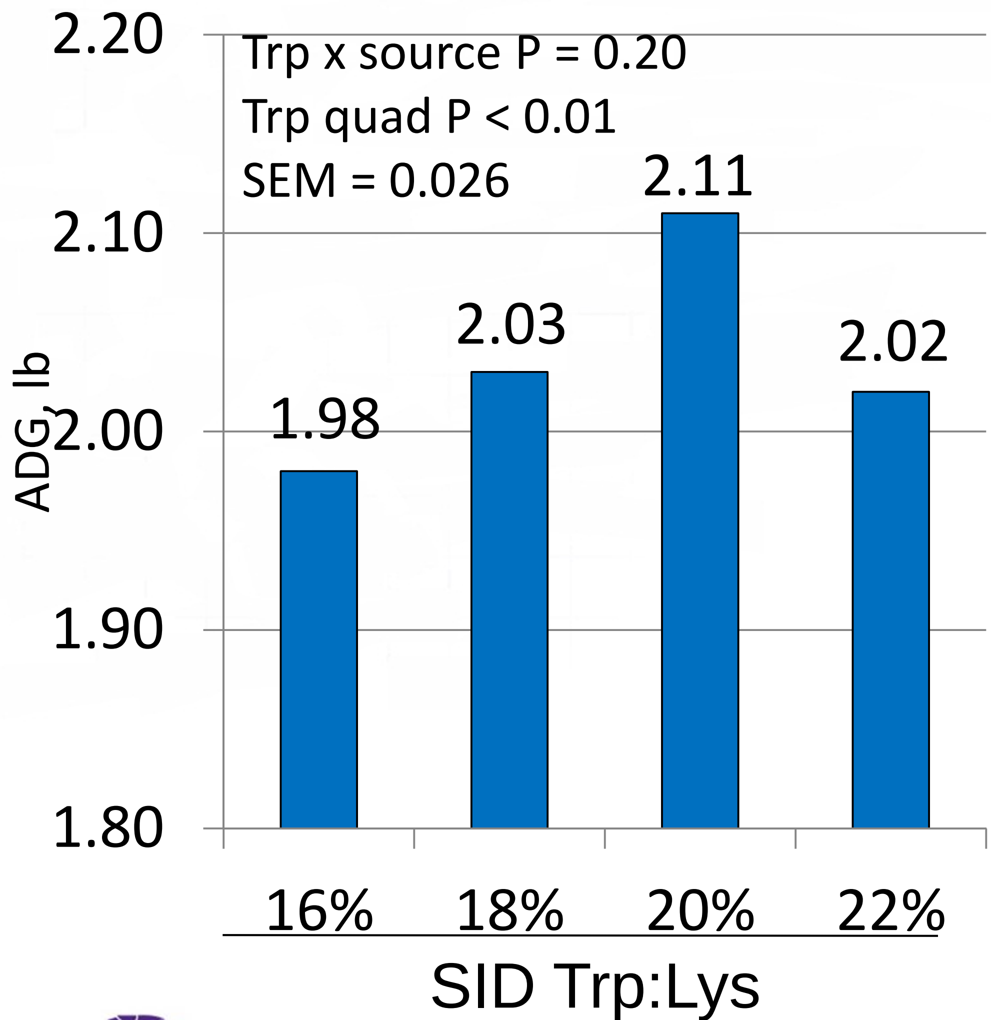
K·STATE Research and Extension

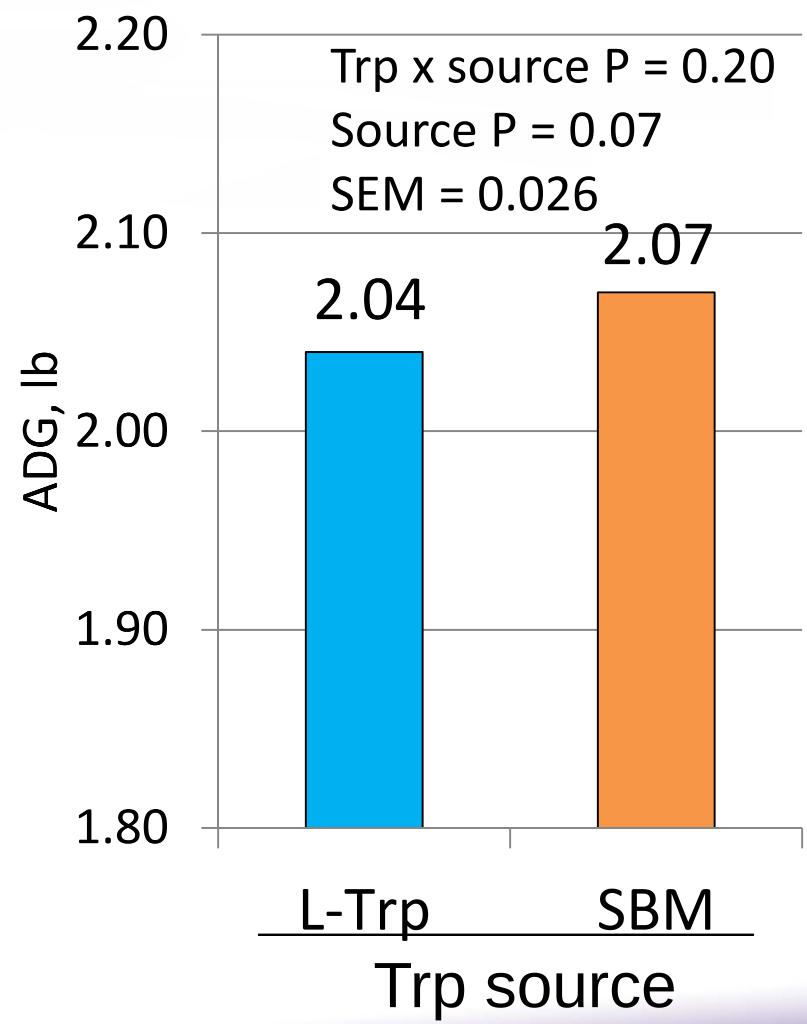
NHF New Horizon Farms LLP

Nitikanchana et al., 2012

Knowledge for Life

SID Trp:Lys ratio and Trp source for finishing pigs (Exp. 6; d 0 to 56; BW 156 to 285 lb)





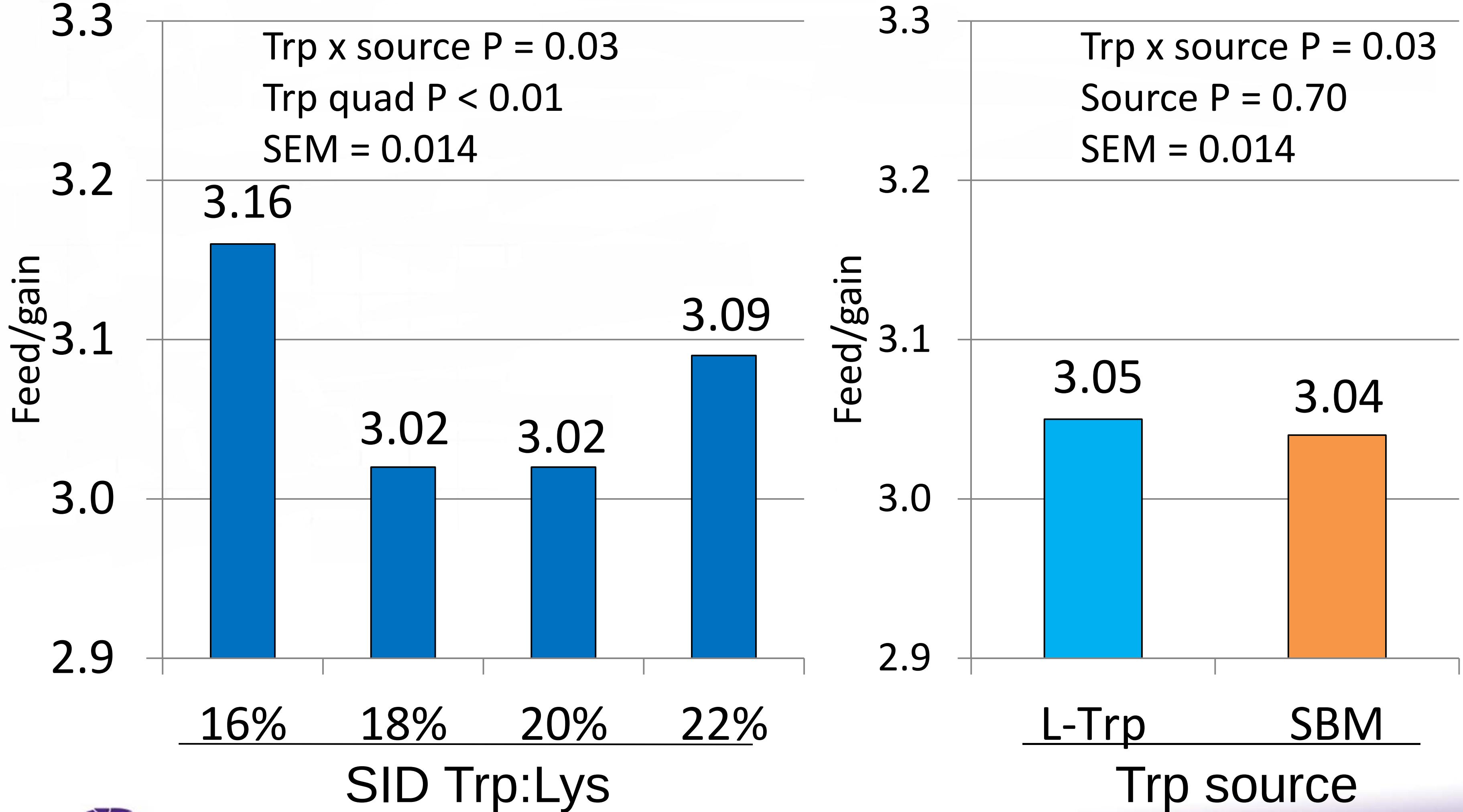
K·STATE Research and Extension

New Horizon Farms LLP

Nitikanchana et al., 2012

Knowledge for Life

SID Trp:Lys ratio and Trp source for finishing pigs (Exp. 6; d 0 to 56; BW 156 to 285 lb)



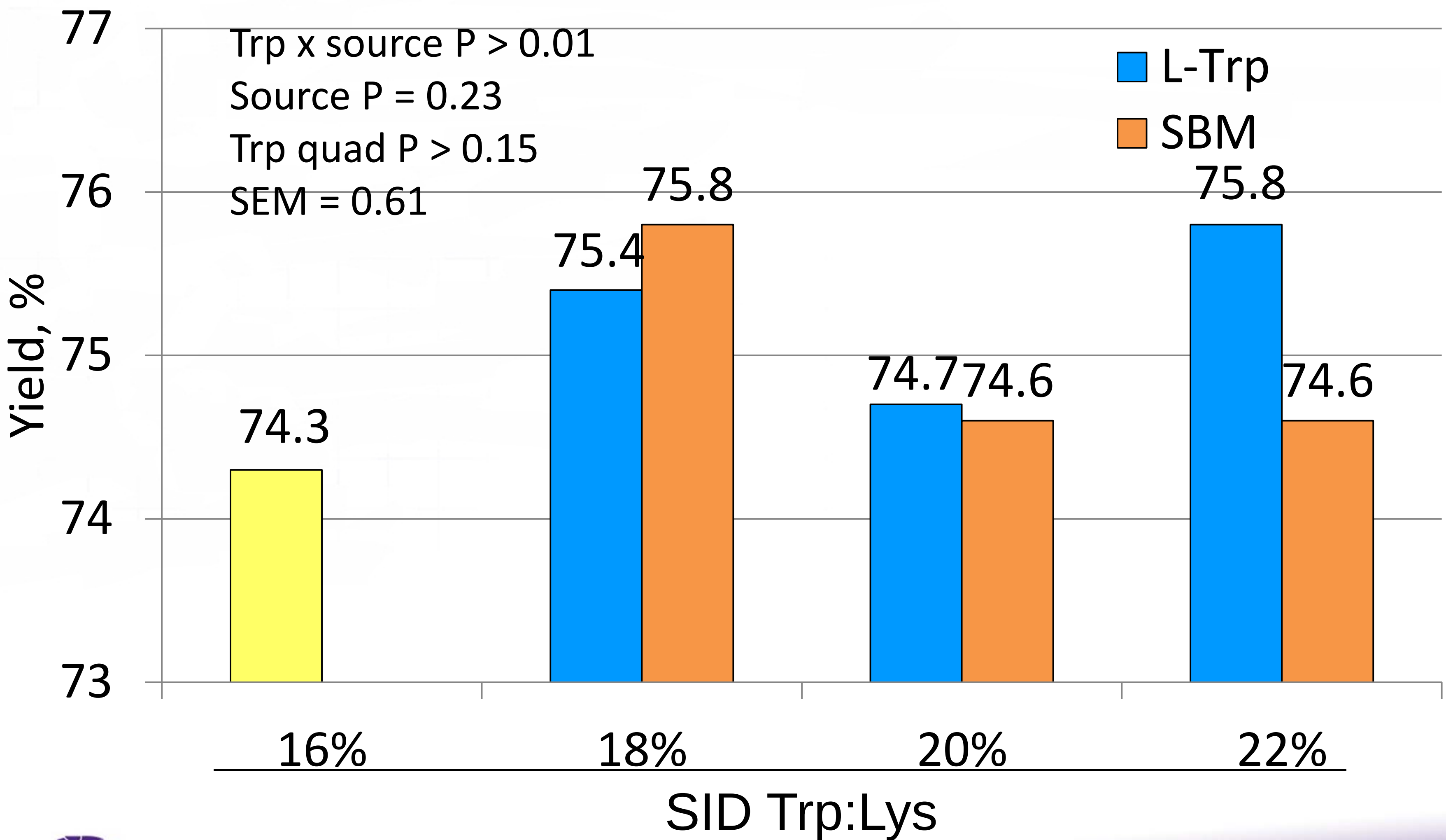
K·STATE Research and Extension

New Horizon Farms LLP

Nitikanchana et al., 2012

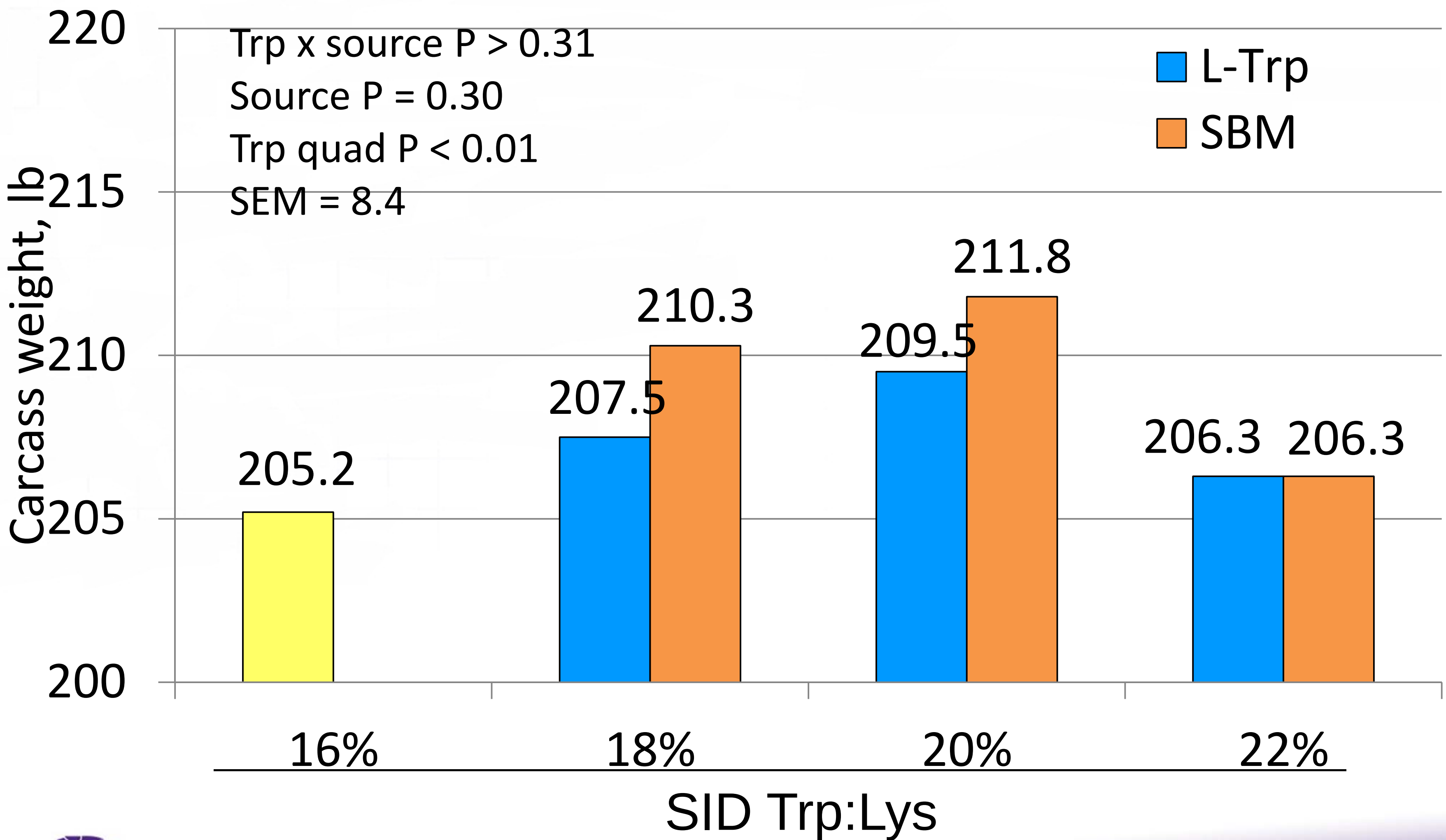
Knowledge for Life

SID Trp:Lys ratio and Trp source for finishing pigs (Exp. 6; d 0 to 56; BW 156 to 285 lb)



Nitikanchana et al., 2012

SID Trp:Lys ratio and Trp source for finishing pigs (Exp. 6; d 0 to 56; BW 156 to 285 lb)



K·STATE Research and Extension

New Horizon Farms LLP

Nitikanchana et al., 2012

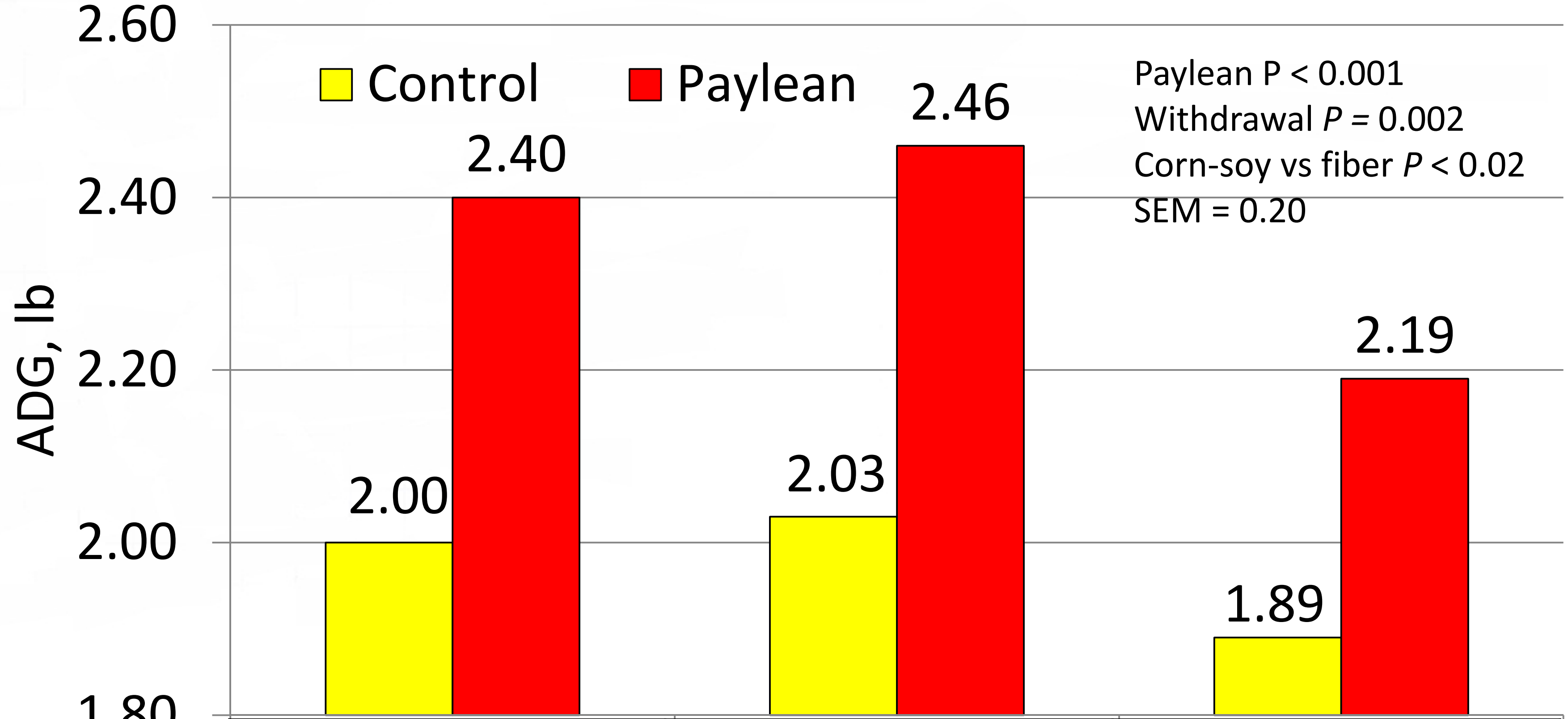
Knowledge for Life

Fiber withdrawal before marketing in combination with Paylean

- Day 0 to 49
  - Pigs fed either a corn-soybean meal diet (1/3) or one with 30% DDGS and 19% midds (2/3).
  - Pigs fed the corn-soybean meal diets had 6% better ADG and 4% better F/G.
- Day 49 to 73
  - Pigs remained on the corn-soybean meal diet.
  - Pigs switched from high fiber diet to corn-soybean meal diet.
  - Pigs remained on high fiber.
  - All treatments with or without 9 g/ton Paylean.

Corn-soy	High fiber	High fiber
Corn-soy	Corn-soy	High fiber

Effect of fiber level and Paylean on finishing pig performance (d 49 to 73; BW 230 to 285 lb)



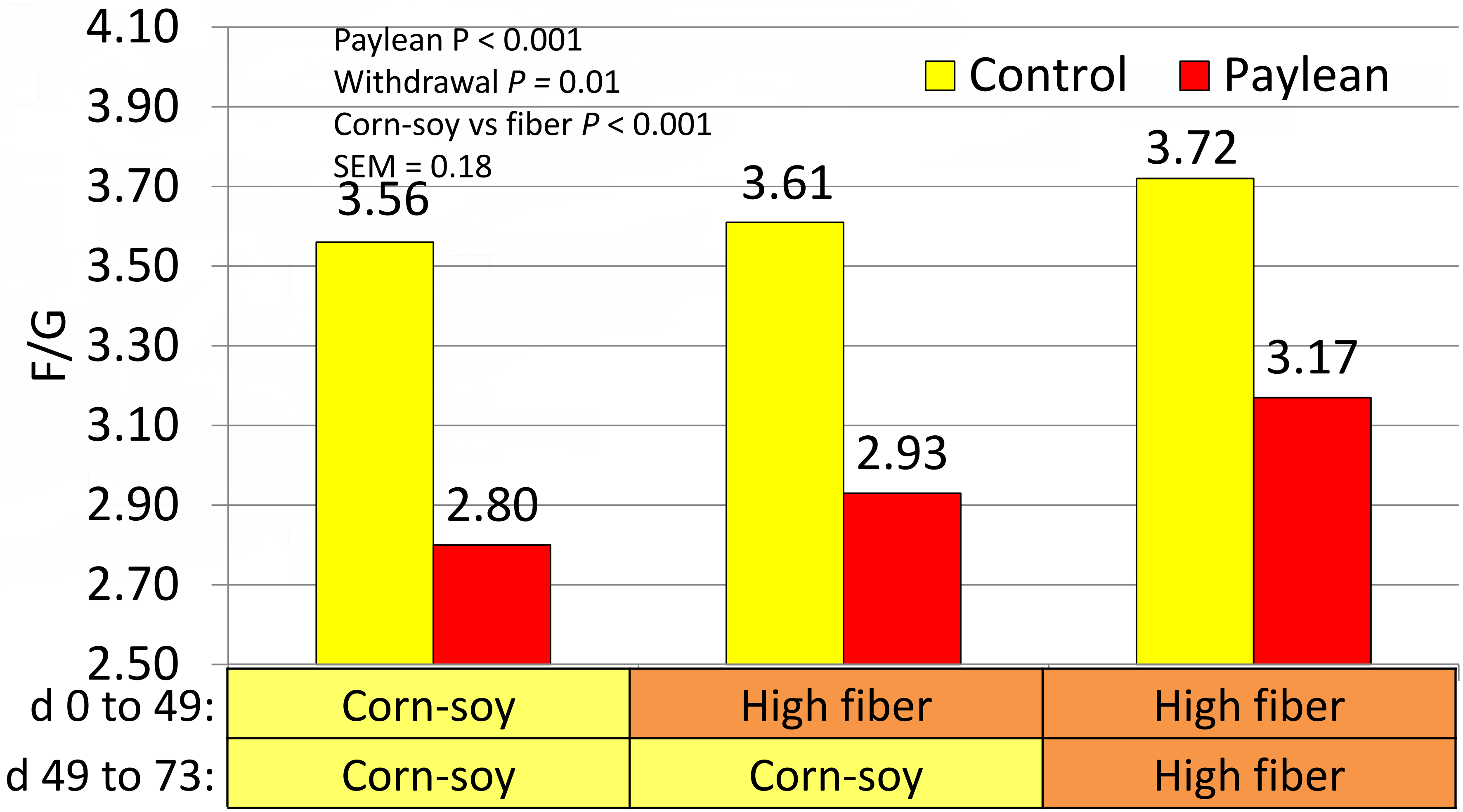
d 0 to 49:	Corn-soy	High fiber	High fiber
d 49 to 73:	Corn-soy	Corn-soy	High fiber

K·STATE Research and Extension

Graham et al., 2012

Knowledge for Life

Effect of fiber level and Paylean on finishing pig performance (d 49 to 73; BW 230 to 285 lb)

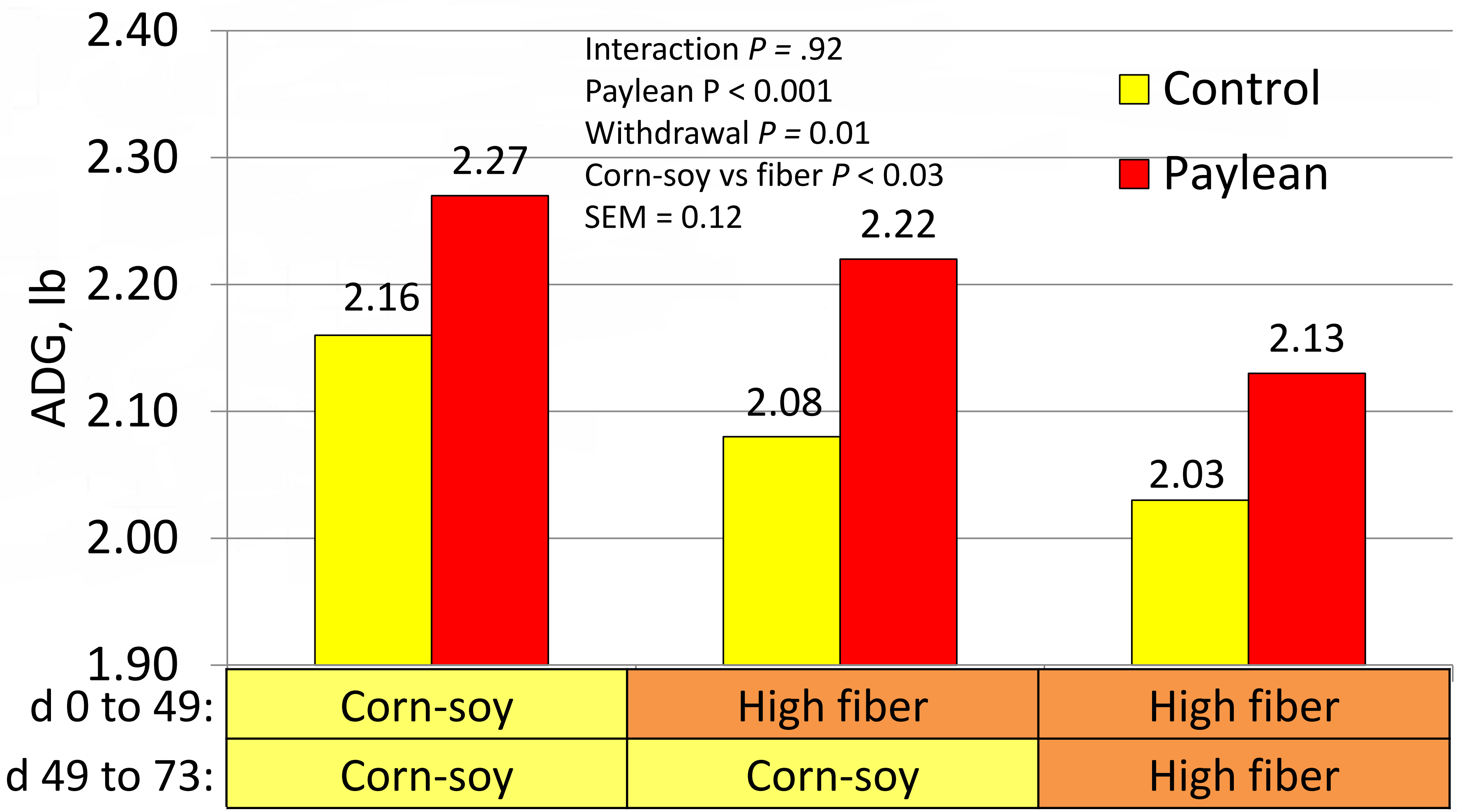


Graham et al., 2012

K·STATE Research and Extension

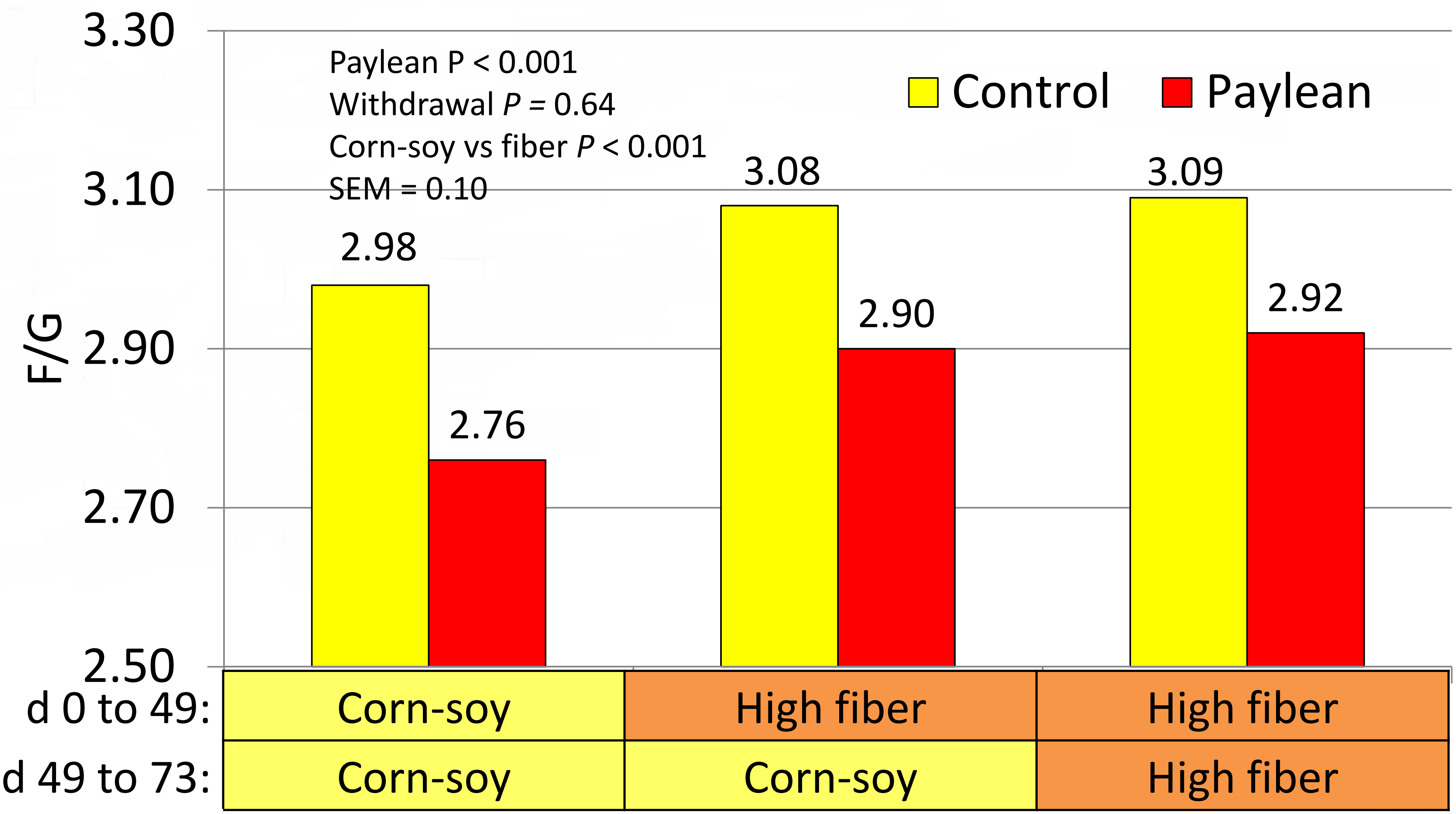
Knowledge for Life

Effect of fiber level and Paylean on finishing pig performance (d 0 to 73; BW 123 to 285 lb)



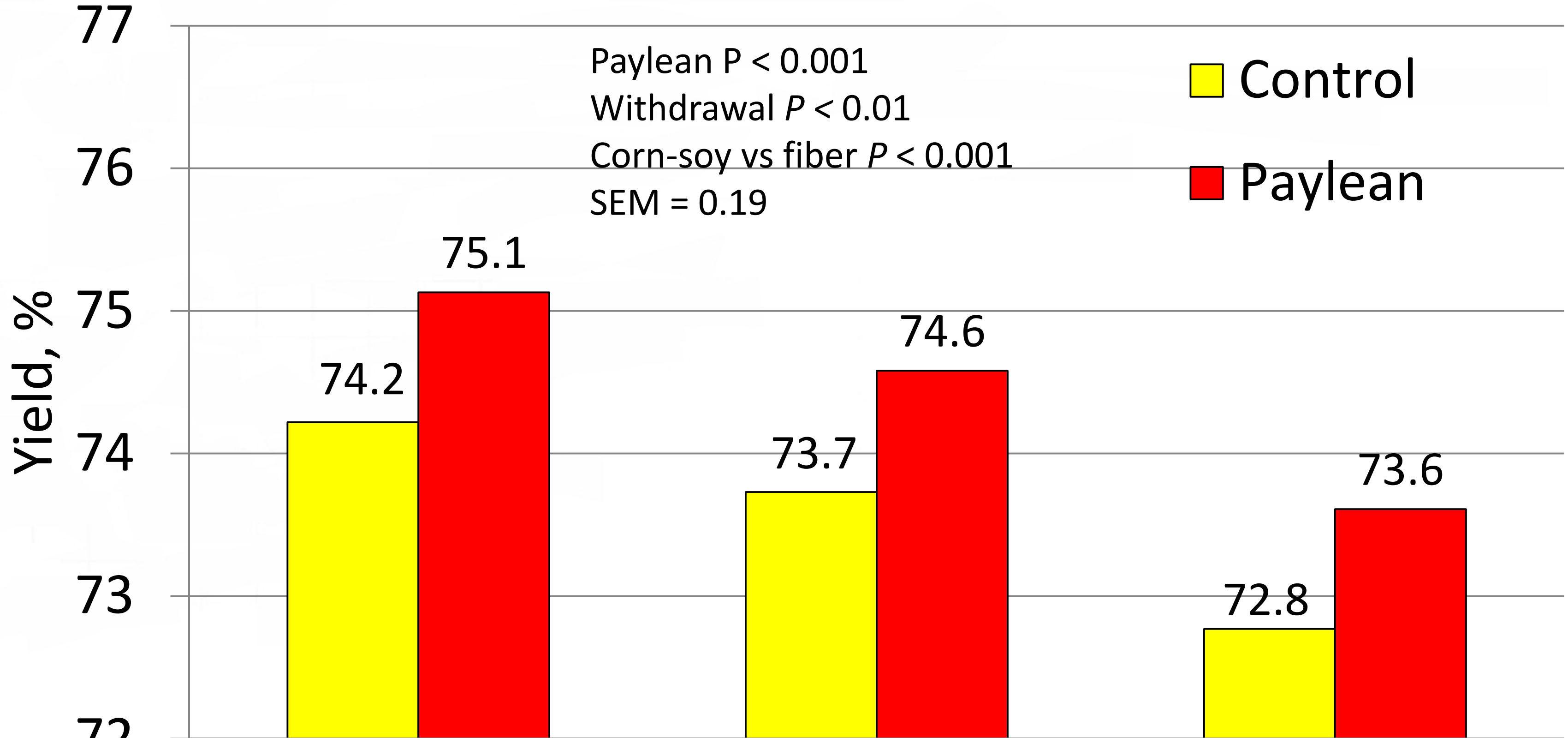
Graham et al., 2012

Effect of fiber level and Paylean on finishing pig performance (d 0 to 73; BW 123 to 285 lb)



Graham et al., 2012

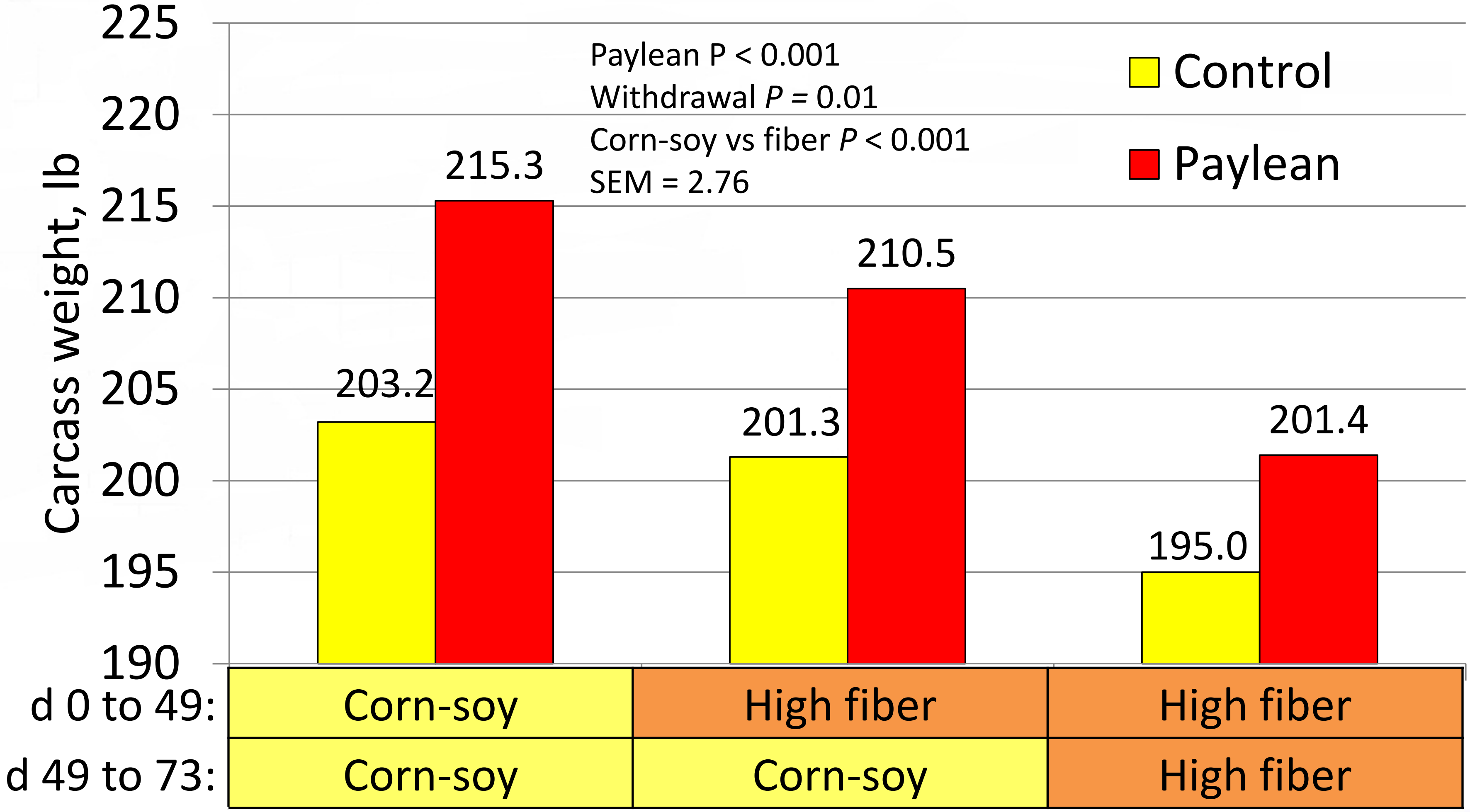
Effect of fiber level and Paylean on finishing pig performance (d 73)



d 0 to 49:	Corn-soy	High fiber	High fiber
d 49 to 73:	Corn-soy	Corn-soy	High fiber

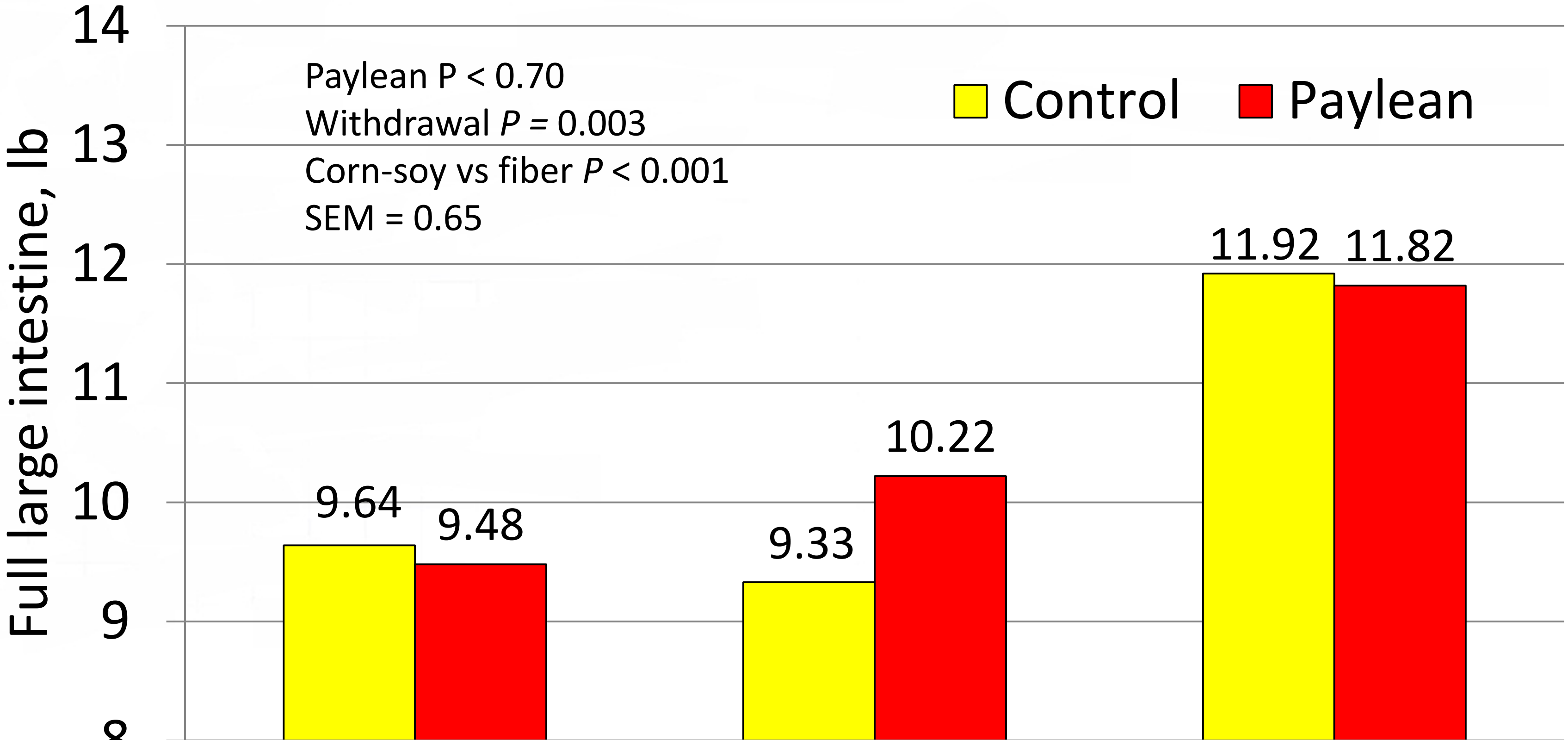
Graham et al., 2012

Effect of fiber level and Paylean on finishing pig performance (d 73)



Graham et al., 2012

Effect of fiber level and Paylean on full large intestine weight (d 73)



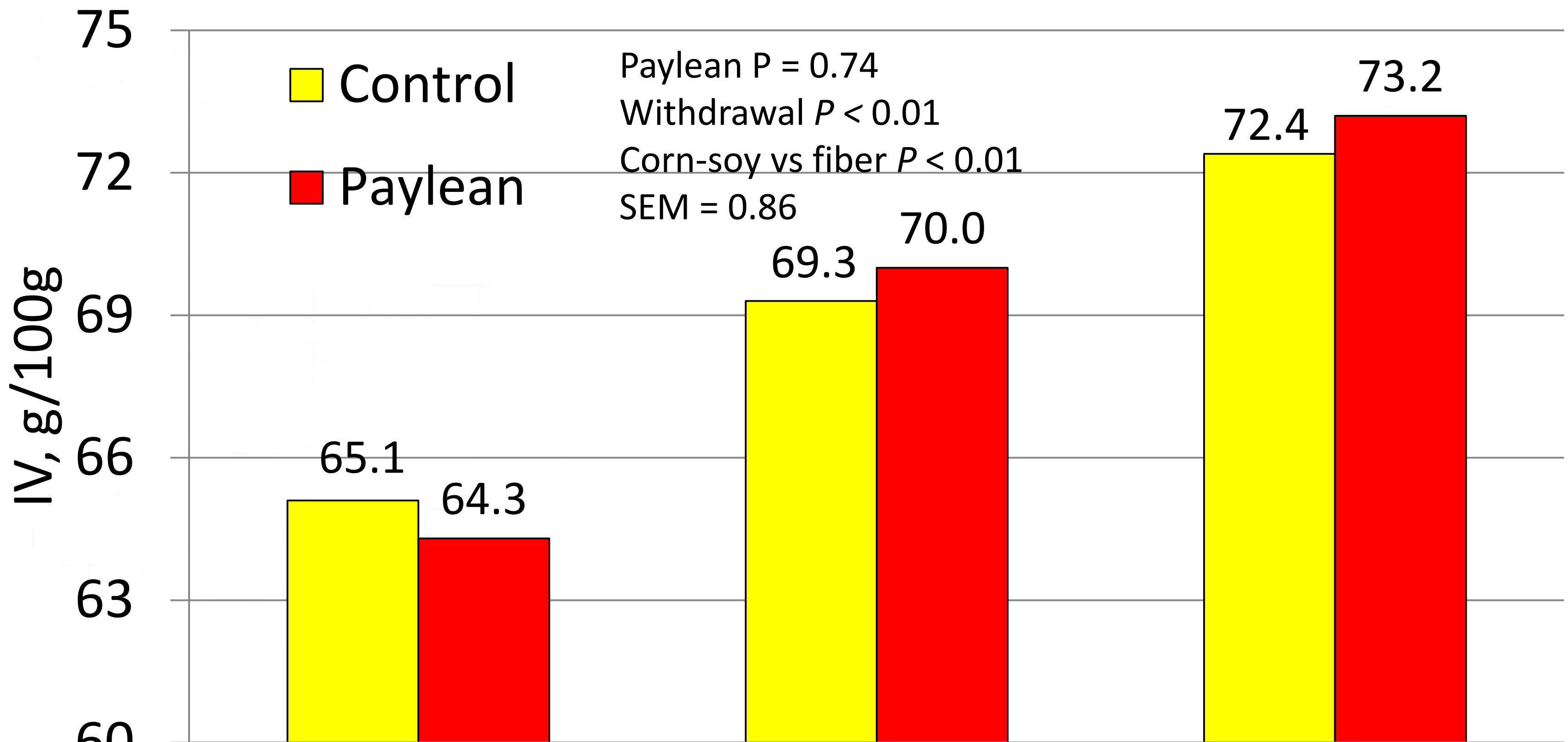
d 0 to 49:	Corn-soy	High fiber	High fiber
d 49 to 73:	Corn-soy	Corn-soy	High fiber

K·STATE Research and Extension

Graham et al., 2012

Knowledge for Life

Effect of fiber level and Paylean on finishing pig performance (d 73)



d 0 to 49:	Corn-soy	High fiber	High fiber
d 49 to 73:	Corn-soy	Corn-soy	High fiber

K·STATE Research and Extension

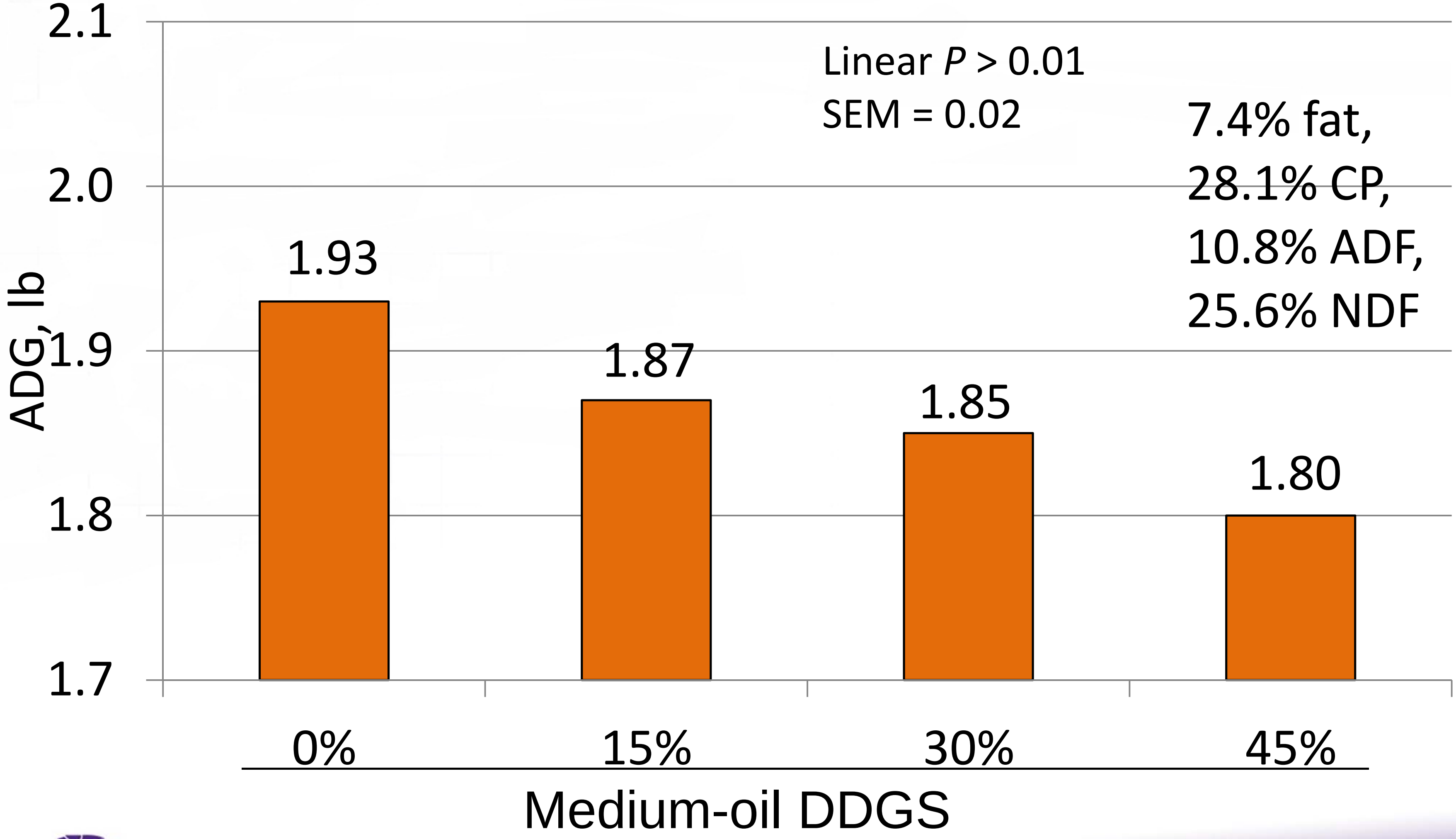
Graham et al., 2012

Knowledge for Life

Summary – Fiber × Paylean

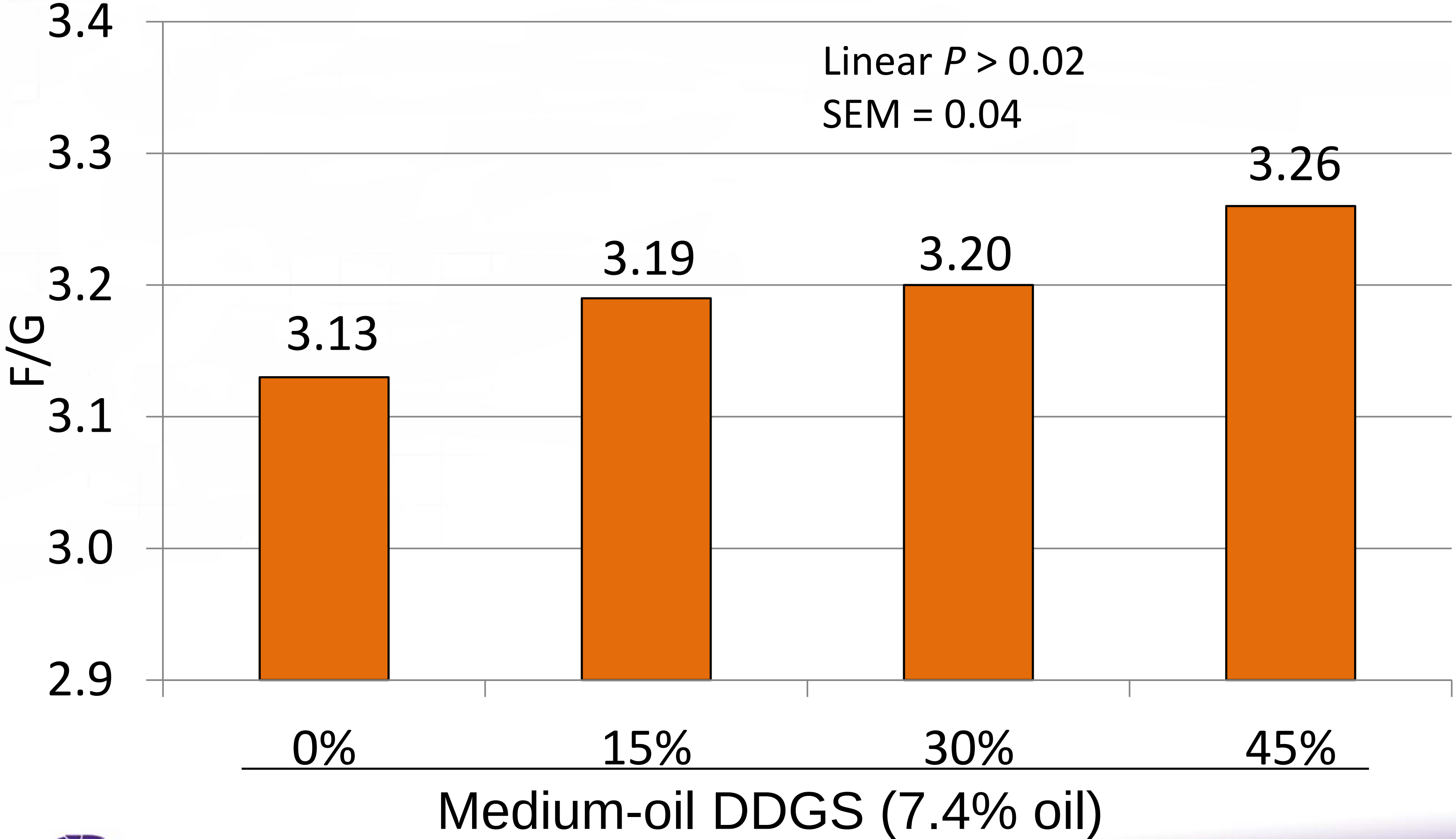
- Feeding high fiber diets containing DDGS and midds decreased growth performance and carcass yield and increased IV compared with those fed a corn-soybean meal diet.
- Withdrawing the high fiber diet and switching to a corn-soybean meal diet for the last 24 d before harvest partially mitigated these negative effects.
- Feeding RAC for the last 24 d before market, regardless of dietary regimen, improved growth performance and carcass yield.

Effect of medium-oil DDGS on pig performance (d 0 to 67; BW 152 to 280 lb)



Graham et al., 2012

Effect of medium oil DDGS on pig performance (d 0 to 67; BW 152 to 280 lb)

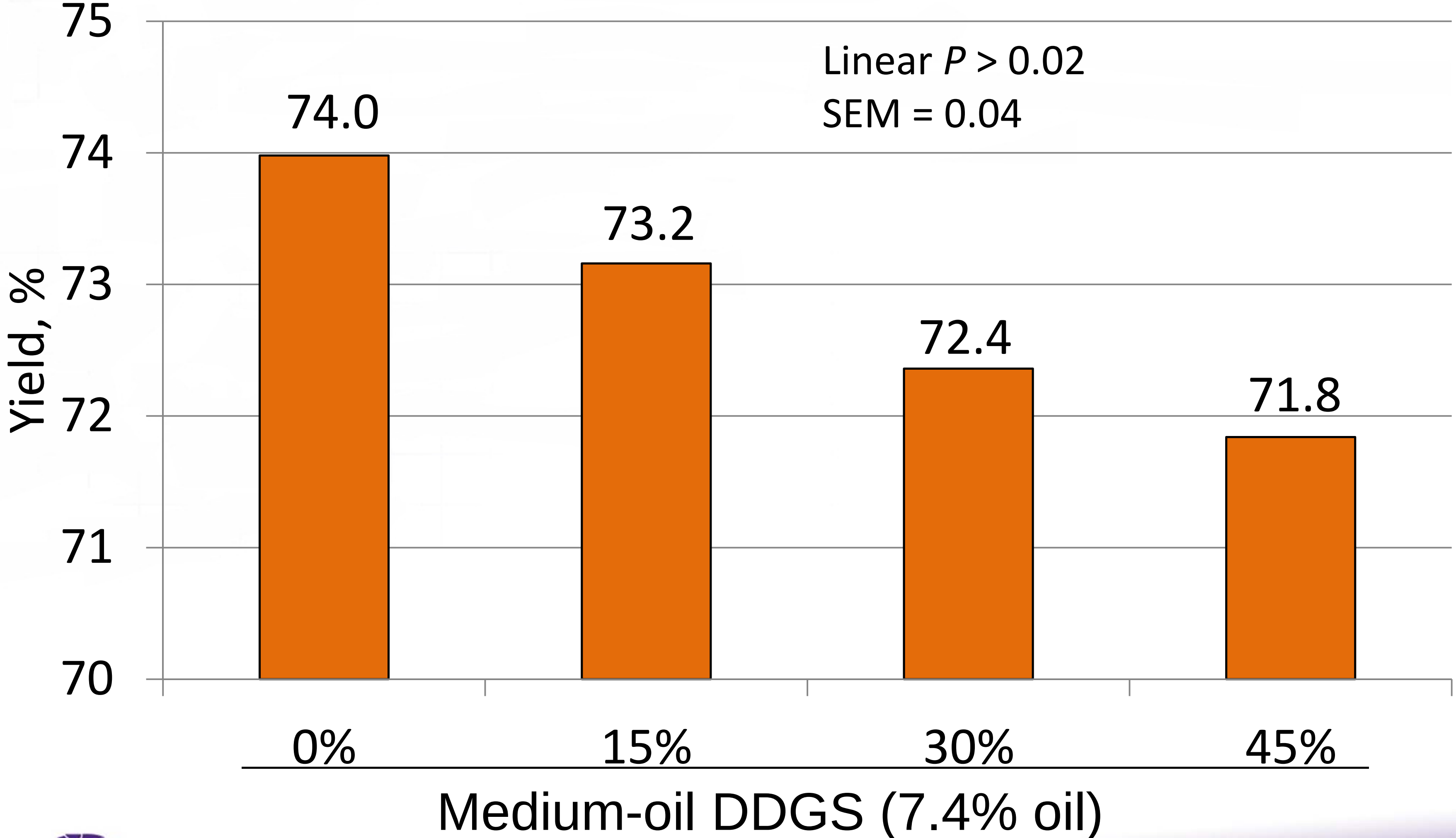


K·STATE Research and Extension

Graham et al., 2012

Knowledge for Life

Effect of medium oil DDGS on pig performance (d 0 to 67; BW 152 to 280 lb)

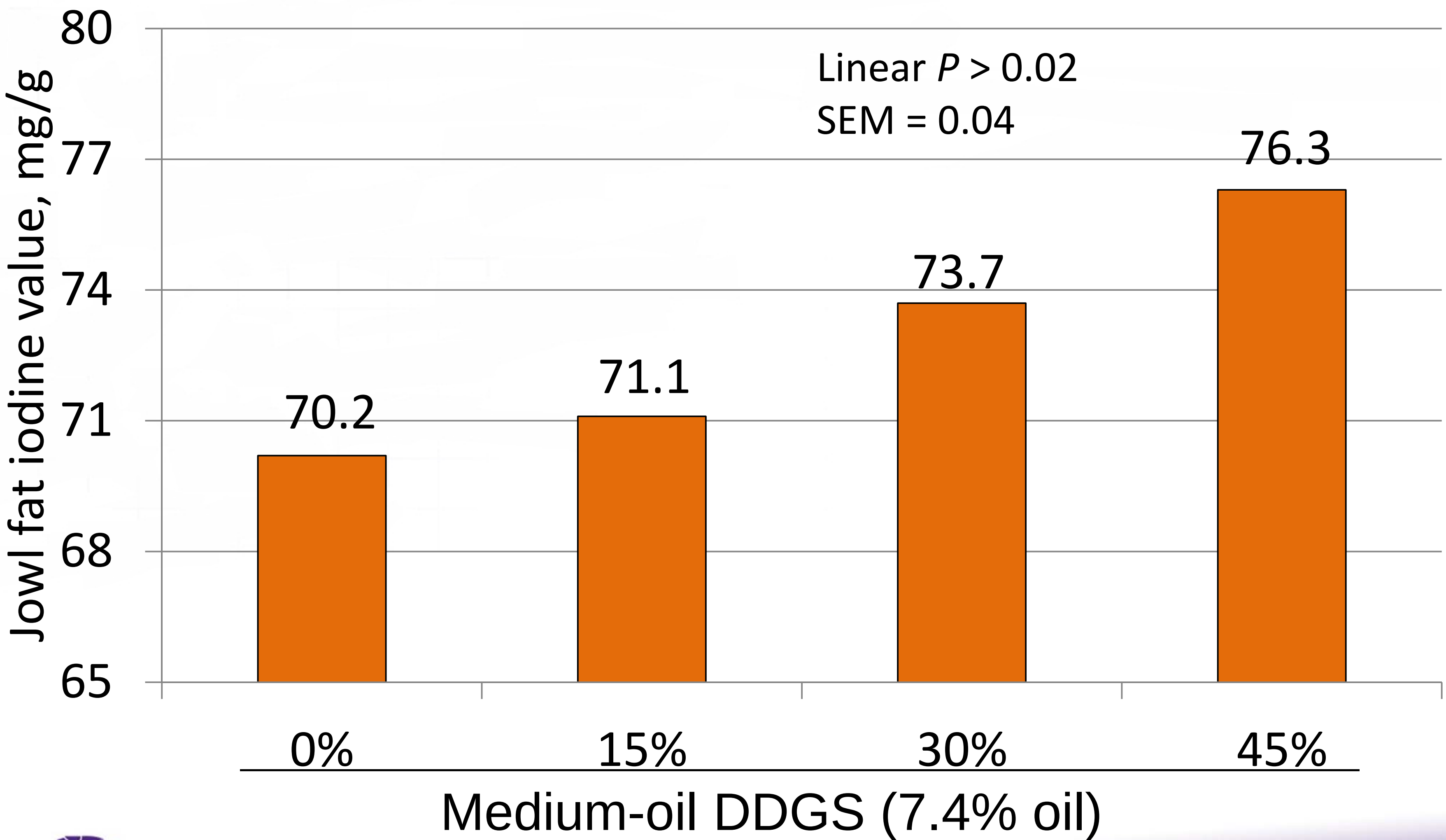


K·STATE Research and Extension

Graham et al., 2012

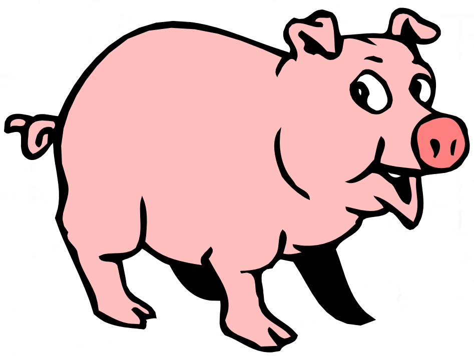
Knowledge for Life

Effect of medium oil DDGS on pig performance (d 0 to 67; BW 152 to 280 lb)



Graham et al., 2012

Energy Systems for Swine



Gross Energy → Feces

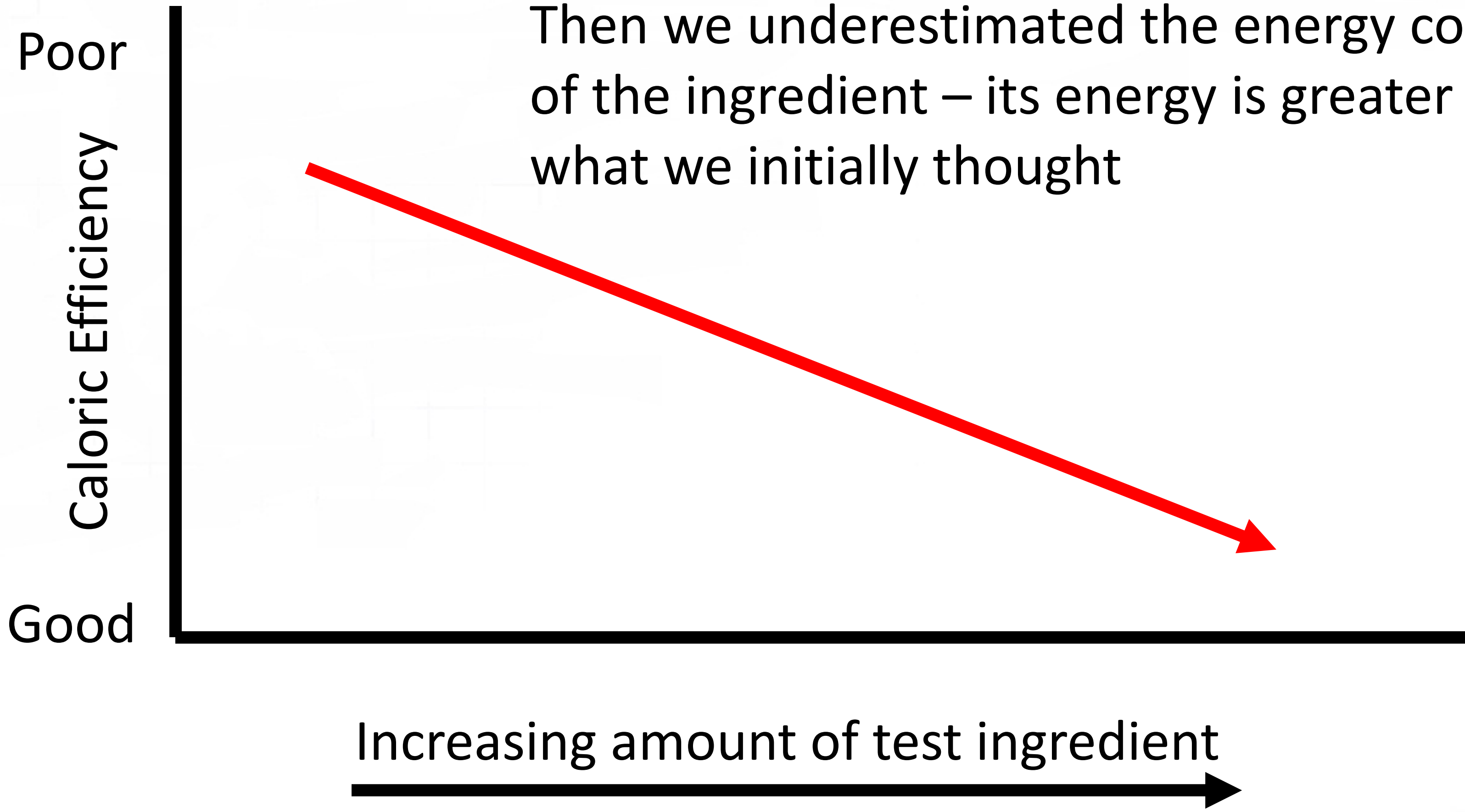
Digestible Energy → Urine & gas

Metabolizable Energy → Heat of digestion

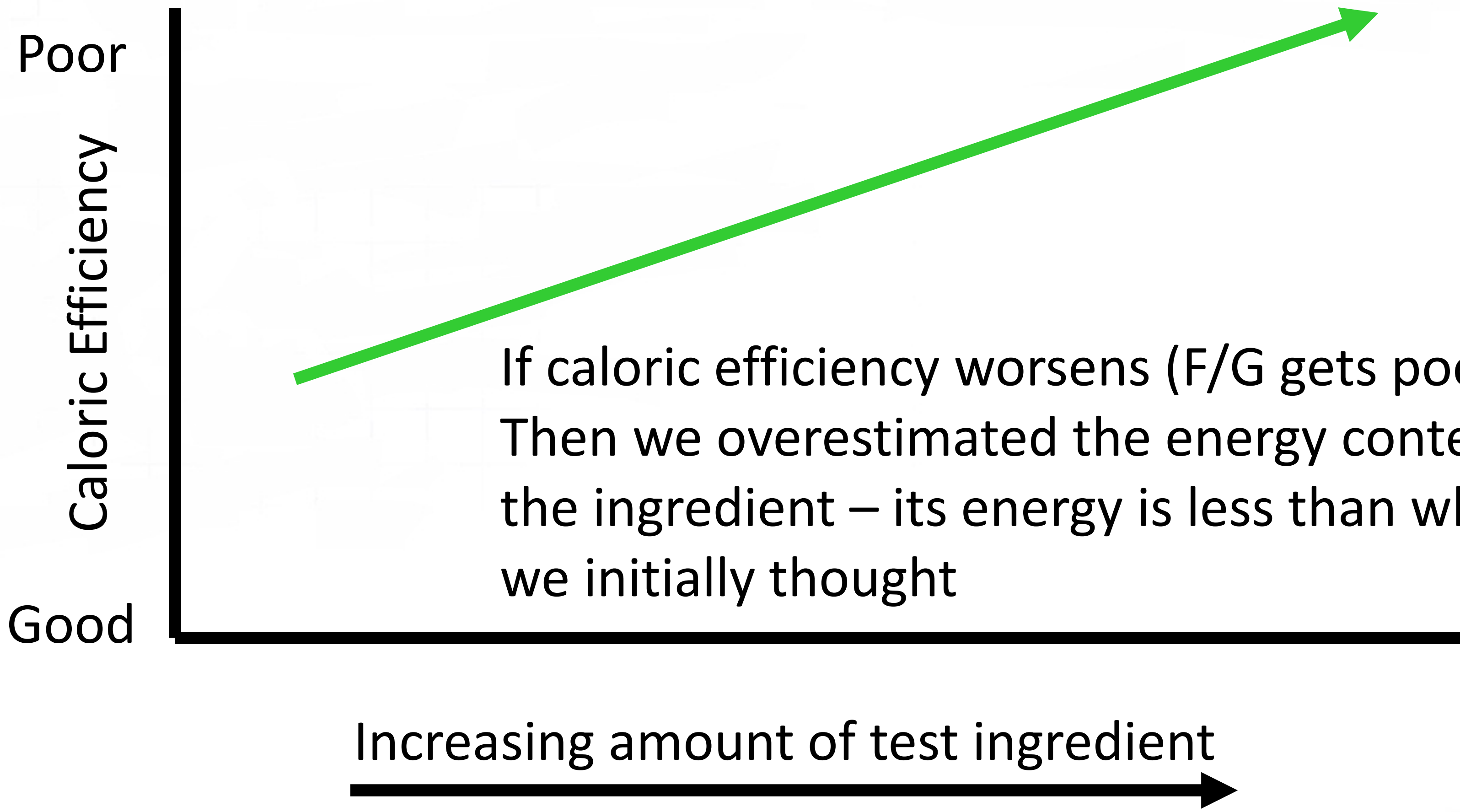
Net Energy

Evaluating Energy in Ingredients

If caloric efficiency improves (F/G gets better)
Then we underestimated the energy content of the ingredient – its energy is greater than what we initially thought

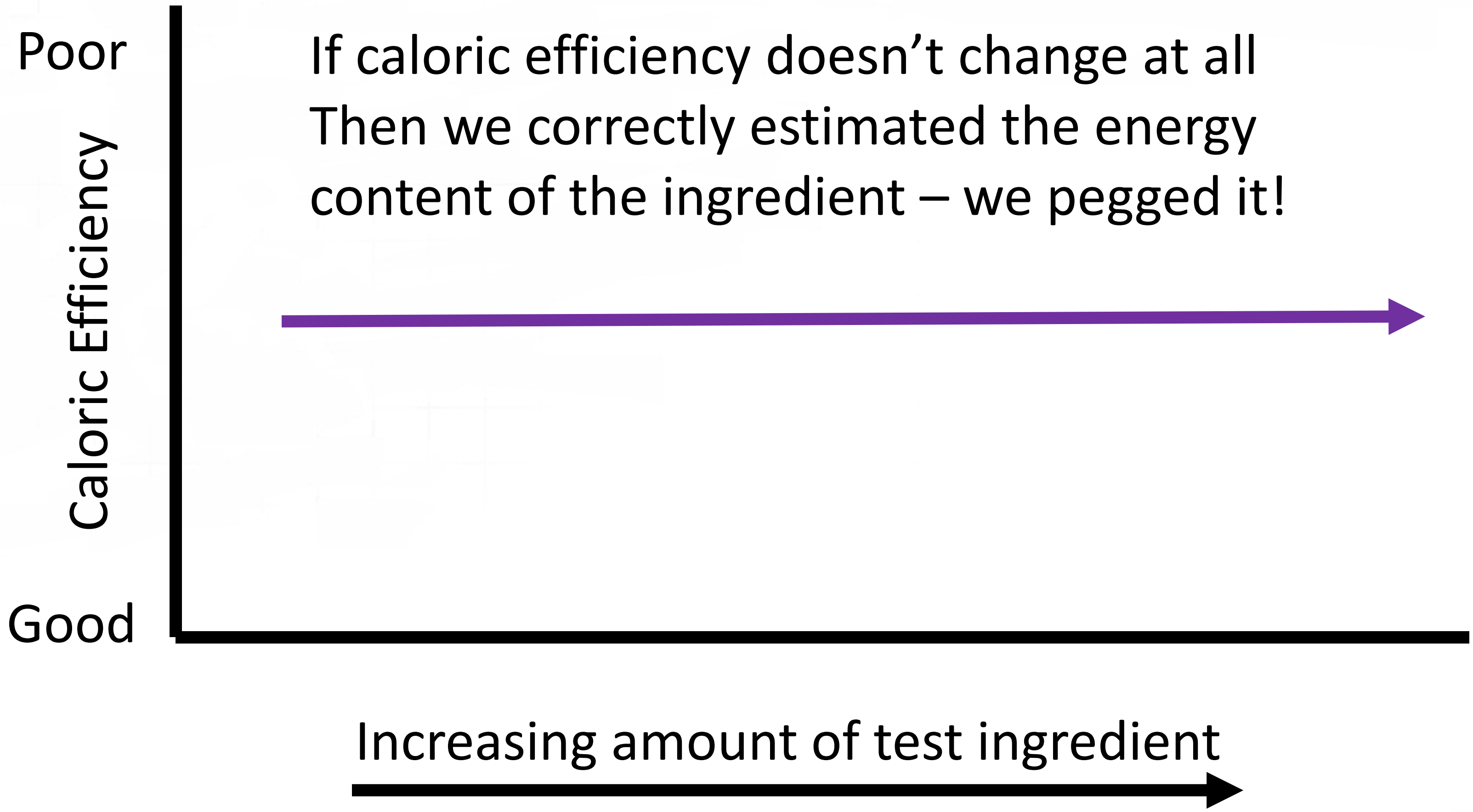


Evaluating Energy in Ingredients

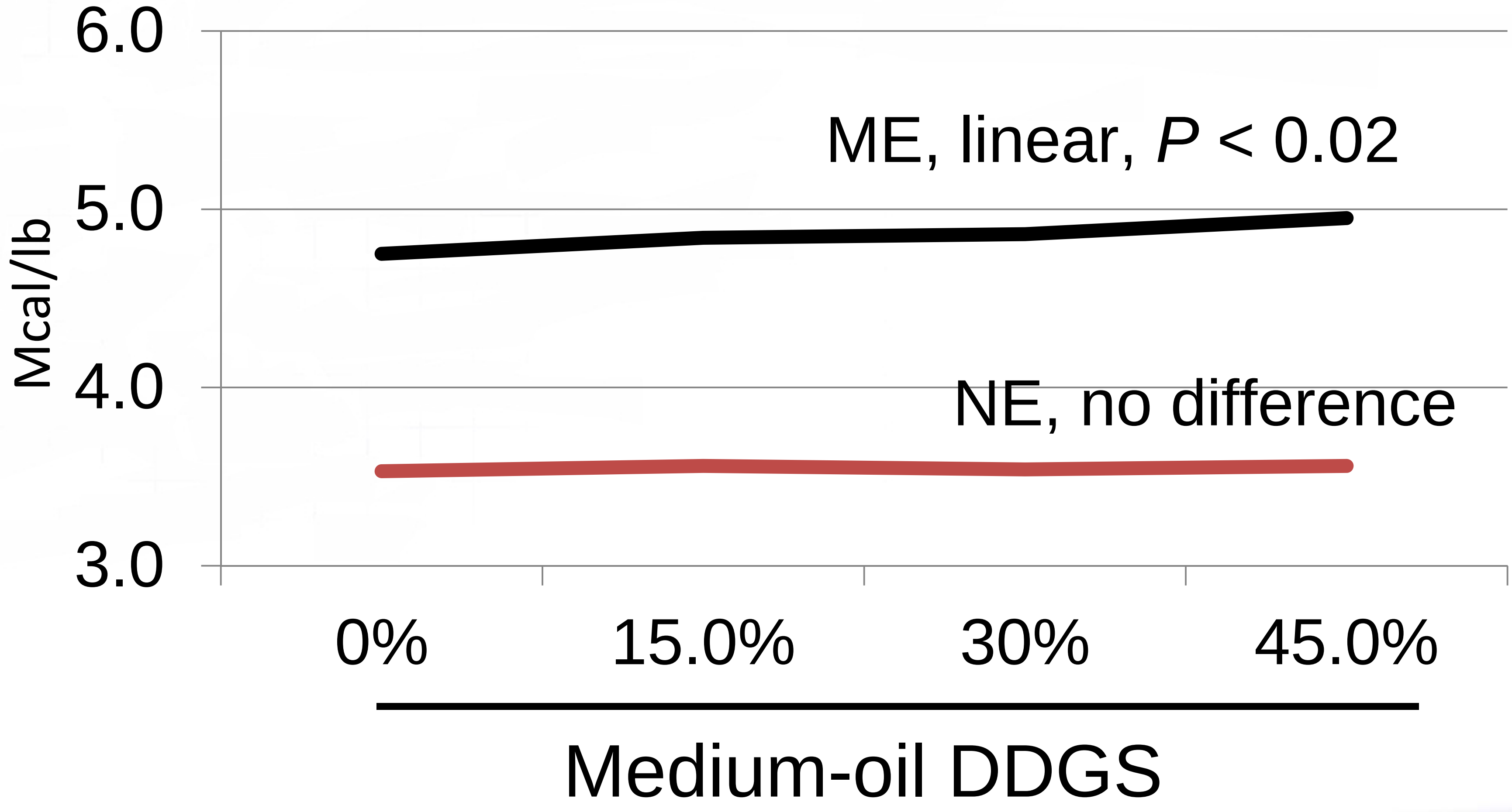


If caloric efficiency worsens (F/G gets poorer) Then we overestimated the energy content of the ingredient – its energy is less than what we initially thought

Evaluating Energy in Ingredients



Effect of medium-oil DDGS on pig performance on caloric efficiency

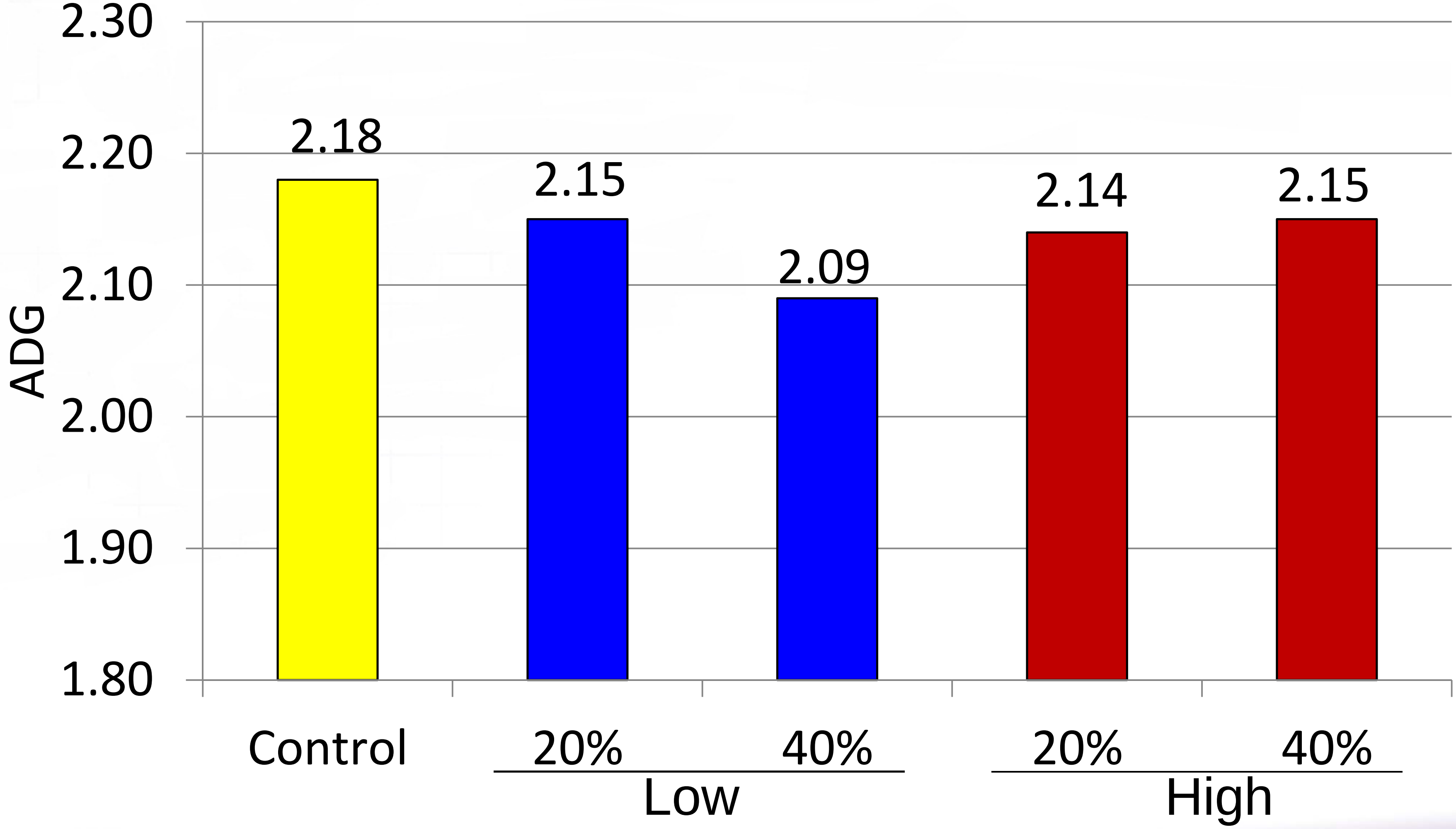


K·STATE Research and Extension

Graham et al., 2012

Knowledge for Life

Preliminary Data: Effect of high- vs low-oil DDGS on finishing pig performance (d 0 to 60; BW 100 to 230 lb)



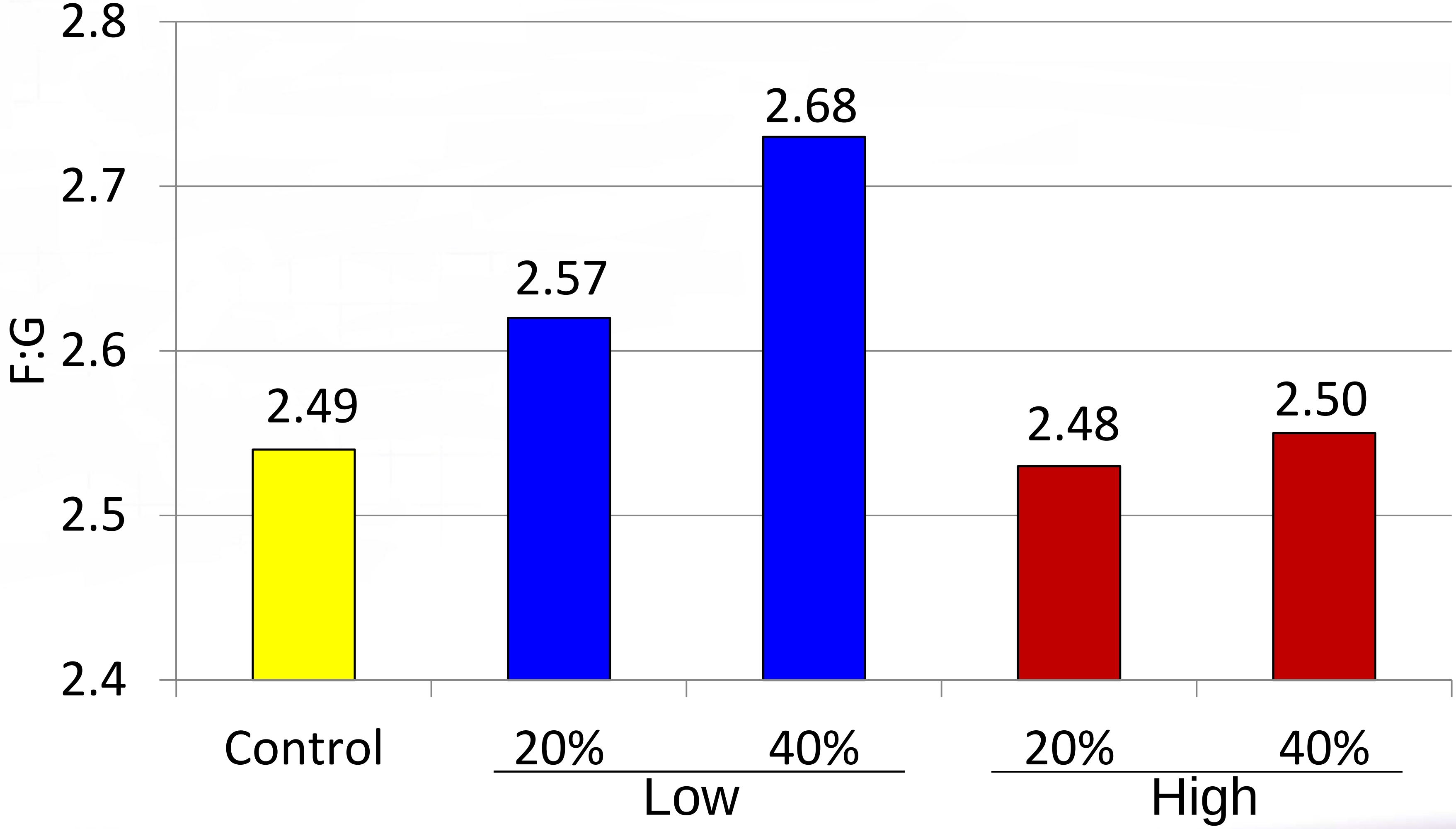
K·STATE Research and Extension

New Horizon Farms LLP

Graham et al., 2013

Knowledge for Life

Preliminary Data: Effect of high- vs low-oil DDGS on finishing pig performance (d 0 to 60; BW 100 to 230 lb)



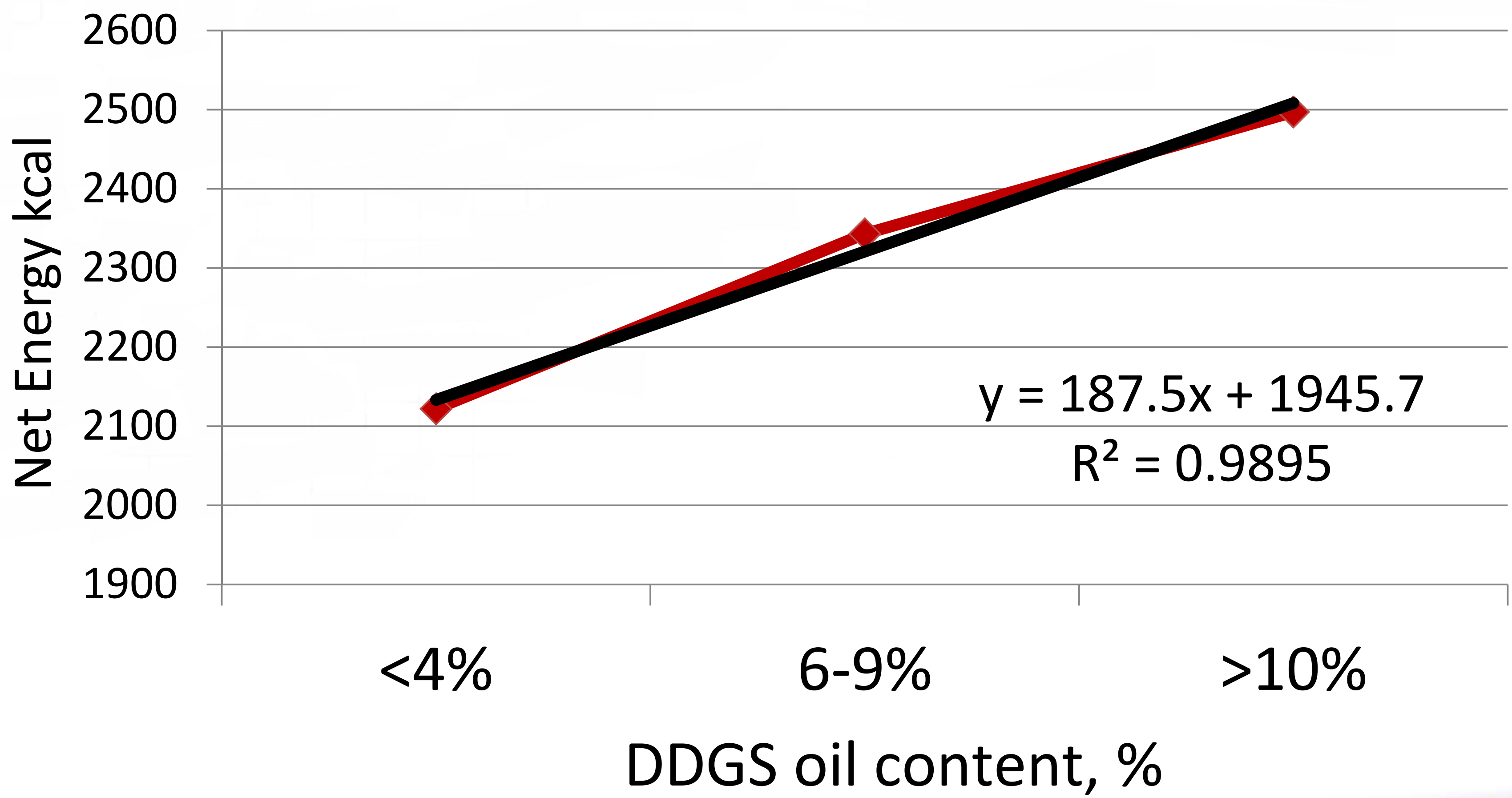
K·STATE Research and Extension

NEW HORIZON FARMS LLP

Graham et al., 2013

Knowledge for Life

Preliminary Estimates of Net Energy values for DDGS Sources with Different Oil Concentrations

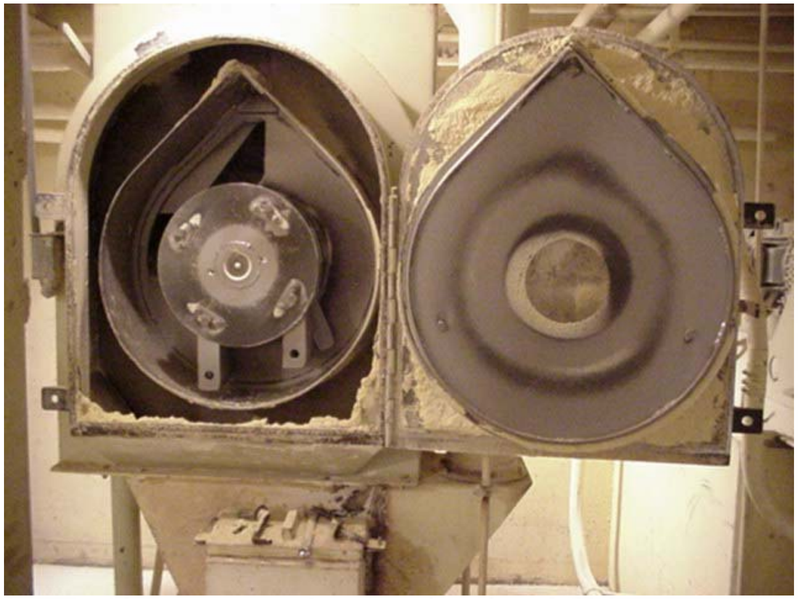


Corn DDGS quality control

- Variability in DDGS quality
  - Main issue is fat level

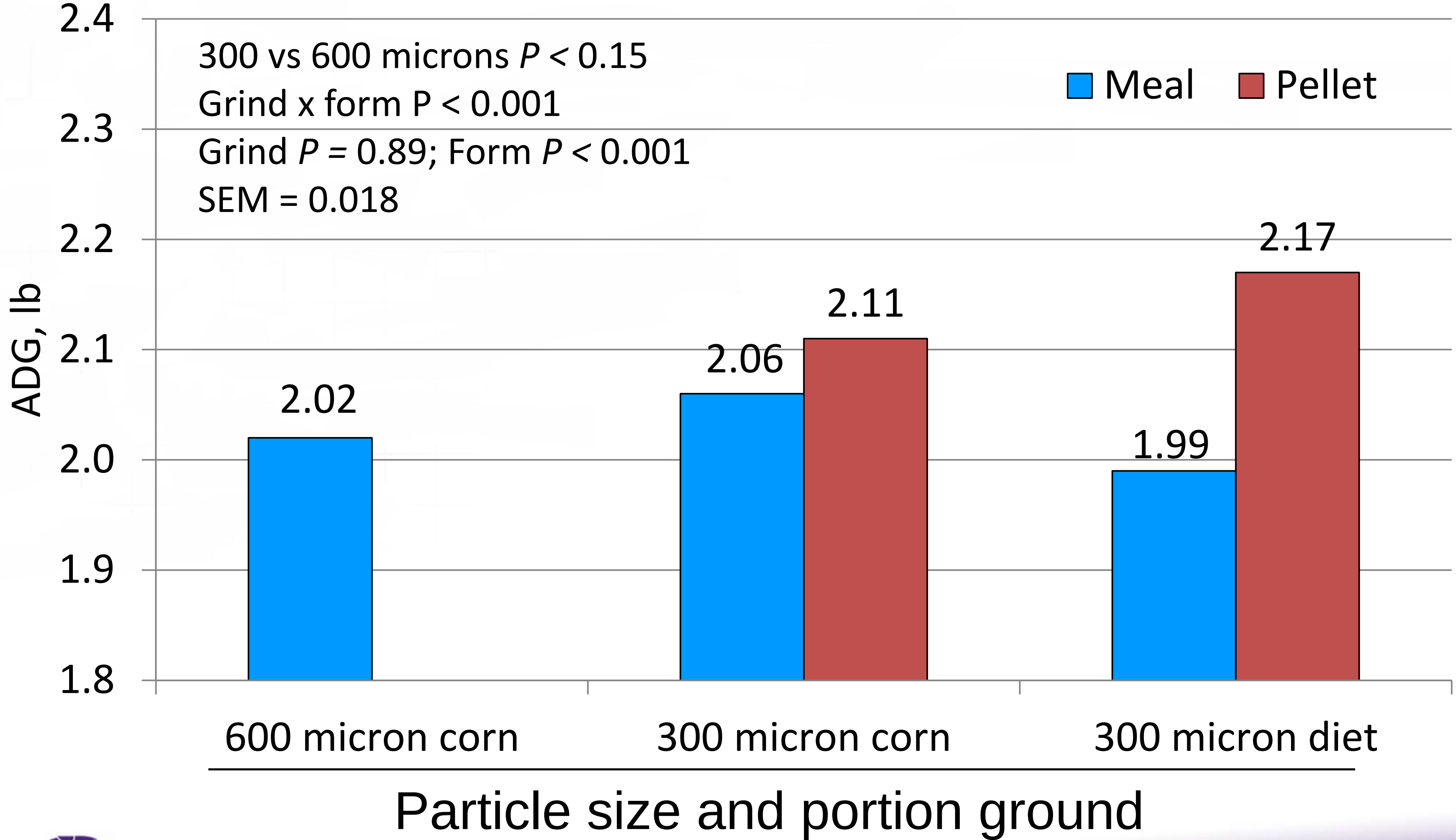
	Fat, %	NE, %
Low = < 5% fat	4.0	80.0%
Medium = 6 to 9% fat	7.5	87.5%
High = > 9% fat	11.0	95.0%

  - Need to monitor DDGS quality or work with company that monitors DDGS quality
  - Ethanol plants guarantee often underestimate the true oil content – guarantee 6% but really 9%



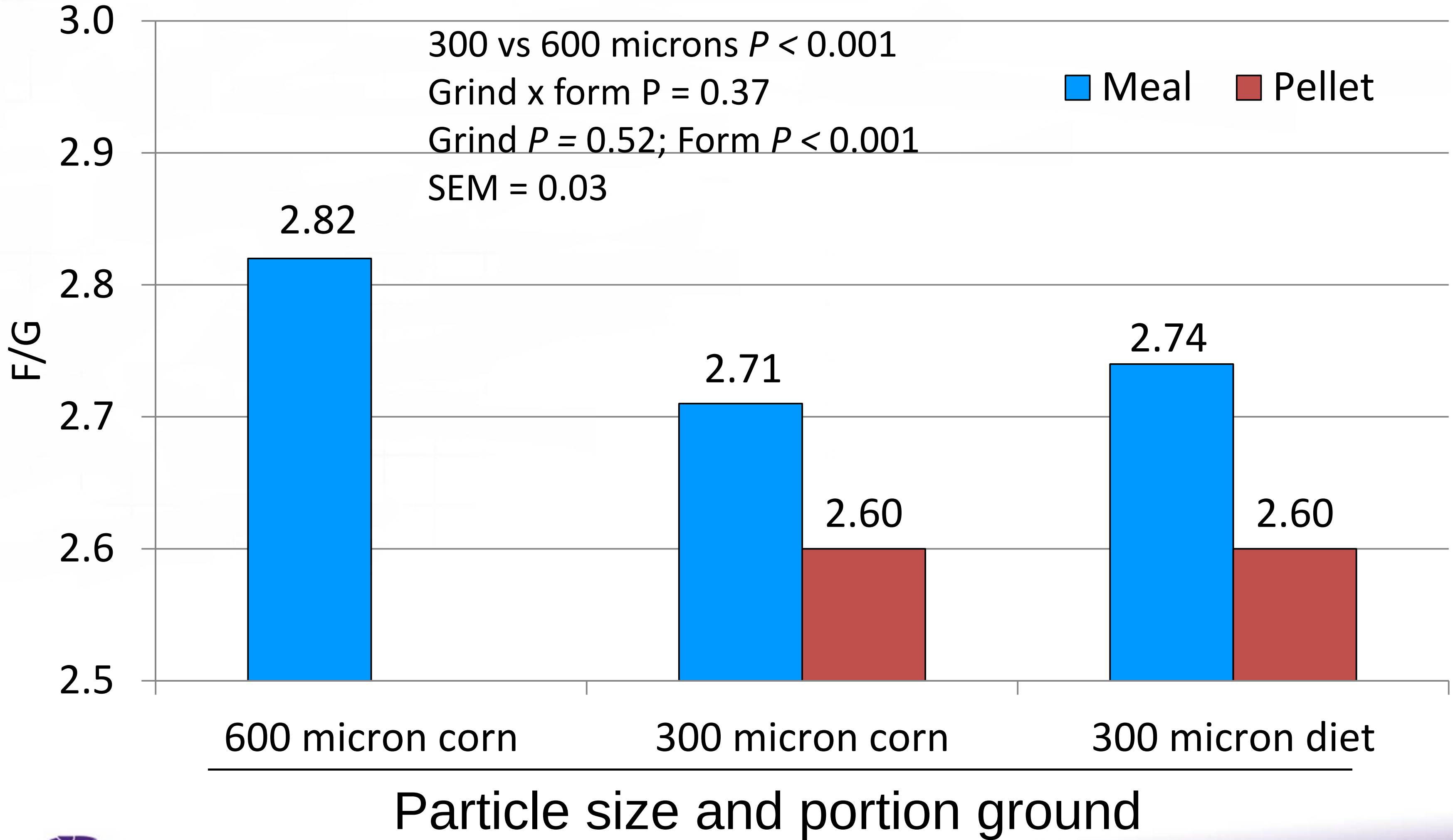
Update on Feed Processing Research

Effect of particle size and diet form on finishing pig performance (d 0 to 111; BW 57 to 288 lb)



De Jong et al., 2012

Effect of particle size and diet form on finishing pig performance (d 0 to 111; BW 57 to 288 lb)



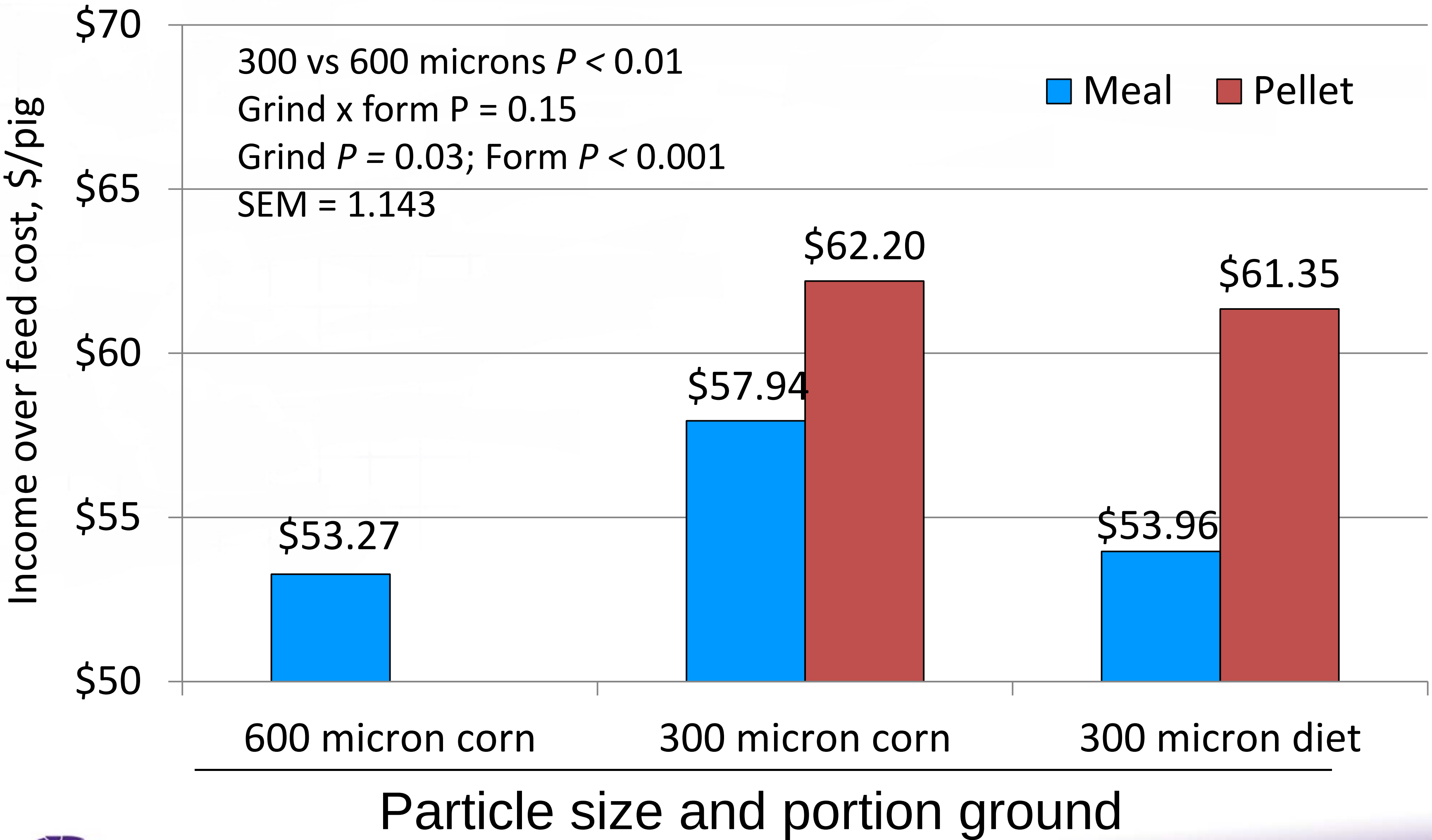
K·STATE Research and Extension

NEW FASHION PORK

De Jong et al., 2012

Knowledge for Life

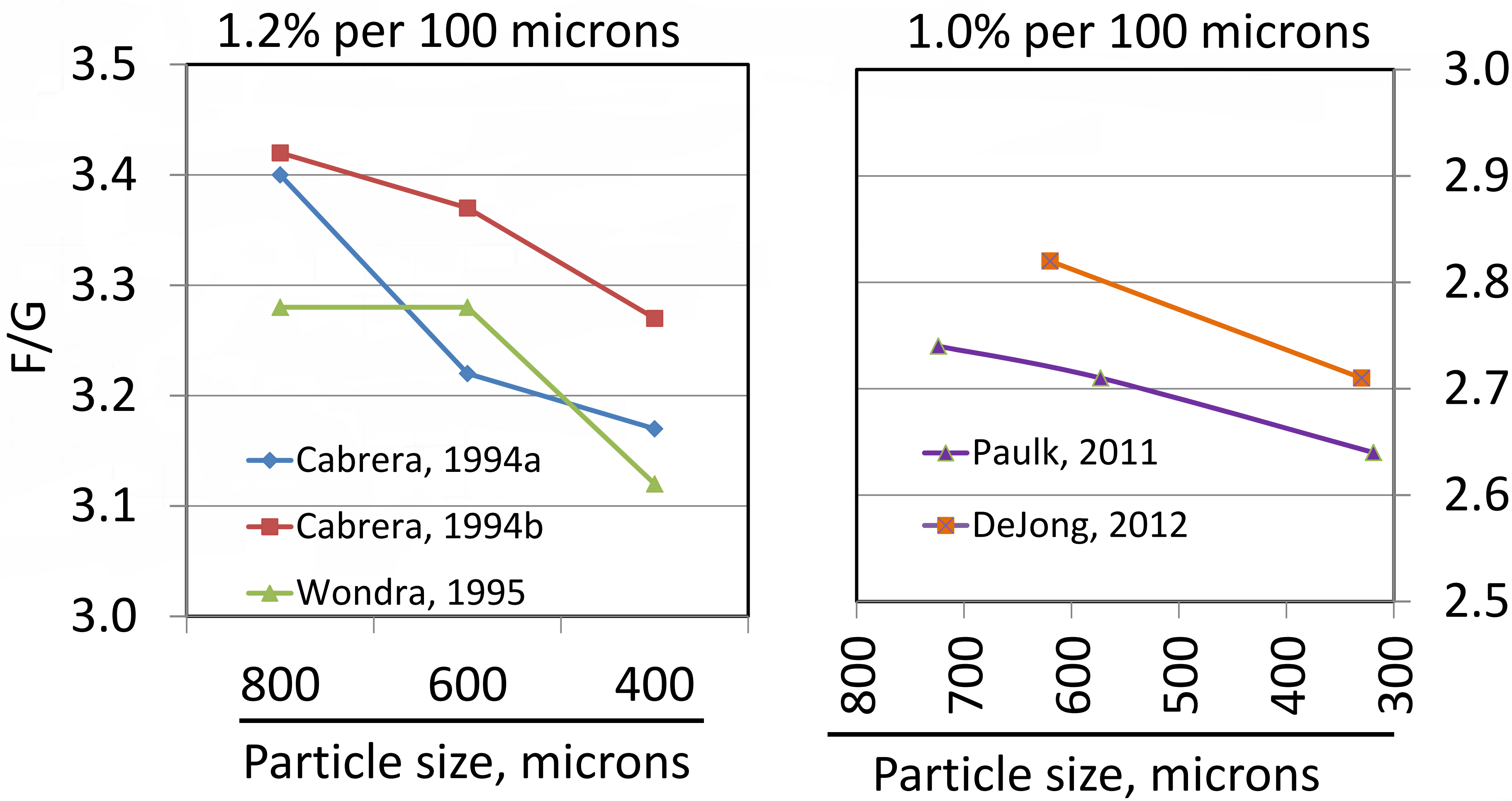
Effect of particle size and diet form on finishing pig performance (d 0 to 111; BW 57 to 288 lb)



De Jong et al., 2012

K-STATE Research and Extension
NEW FASHION PORK
Knowledge for Life

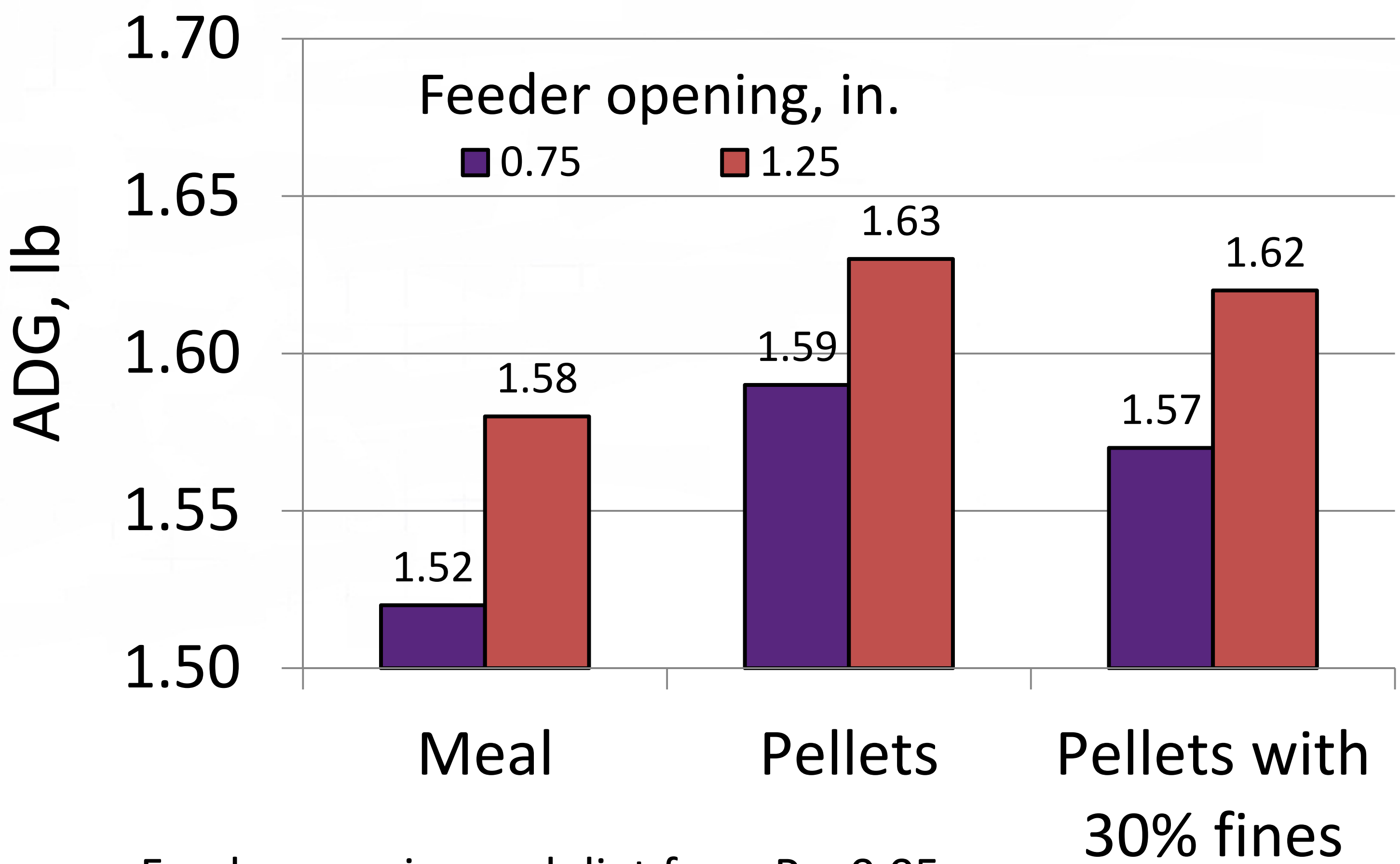
Effects of particle size on feed efficiency



Effects of pelleting on growth performance of grow-finish pigs 2005 to 2011					
	Meal			Pellet	
Reference	ADG	F/G		ADG	F/G
Groesbeck et al. (2005)	0.83	1.25		0.90	1.22
Groesbeck et al. (2005)	0.62	1.43		0.65	1.37
Groesbeck et al.(2006)	0.80	1.25		0.78	1.17
Potter et al. (2009)	1.95	2.12		2.05	2.07
Potter et al. (2009)	1.92	2.83		2.04	2.68
Myers et al. (2010)	1.81	2.76		1.94	2.82
Potter et al. (2010)	1.92	2.86		2.03	2.70
Frobose et al. (2011)	1.46	1.72		1.43	1.63
Frobose et al. (2011)	1.29	1.51		1.38	1.40
Myers et al. (2011)	1.96	2.73		1.97	2.67
Paulk et al. (2011)	2.50	2.75		2.63	2.55
Paulk et al. (2011)	2.31	2.50		2.44	2.40
Average	**1.61**	**2.14**		**1.69**	**2.06**

Average response = 5.0% for ADG and 4.0% for F/G

Effects of feeder adjustment and pellet quality on ADG

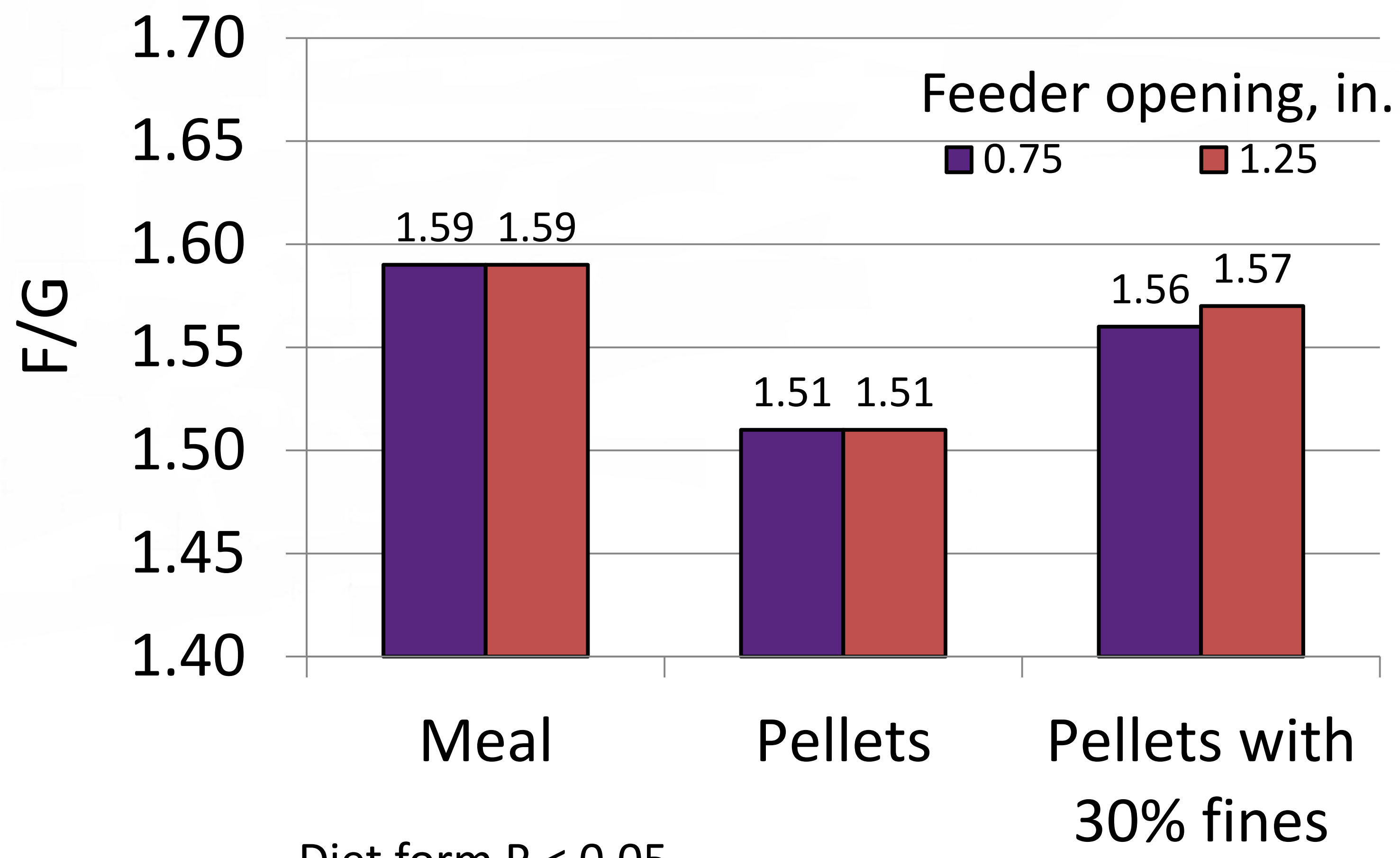


Feeder opening and diet form P < 0.05

Nemecheck et al. 2012

Knowledge for Life

Effects of feeder adjustment and pellet quality on F/G



Diet form $P < 0.05$

K·STATE Research and Extension

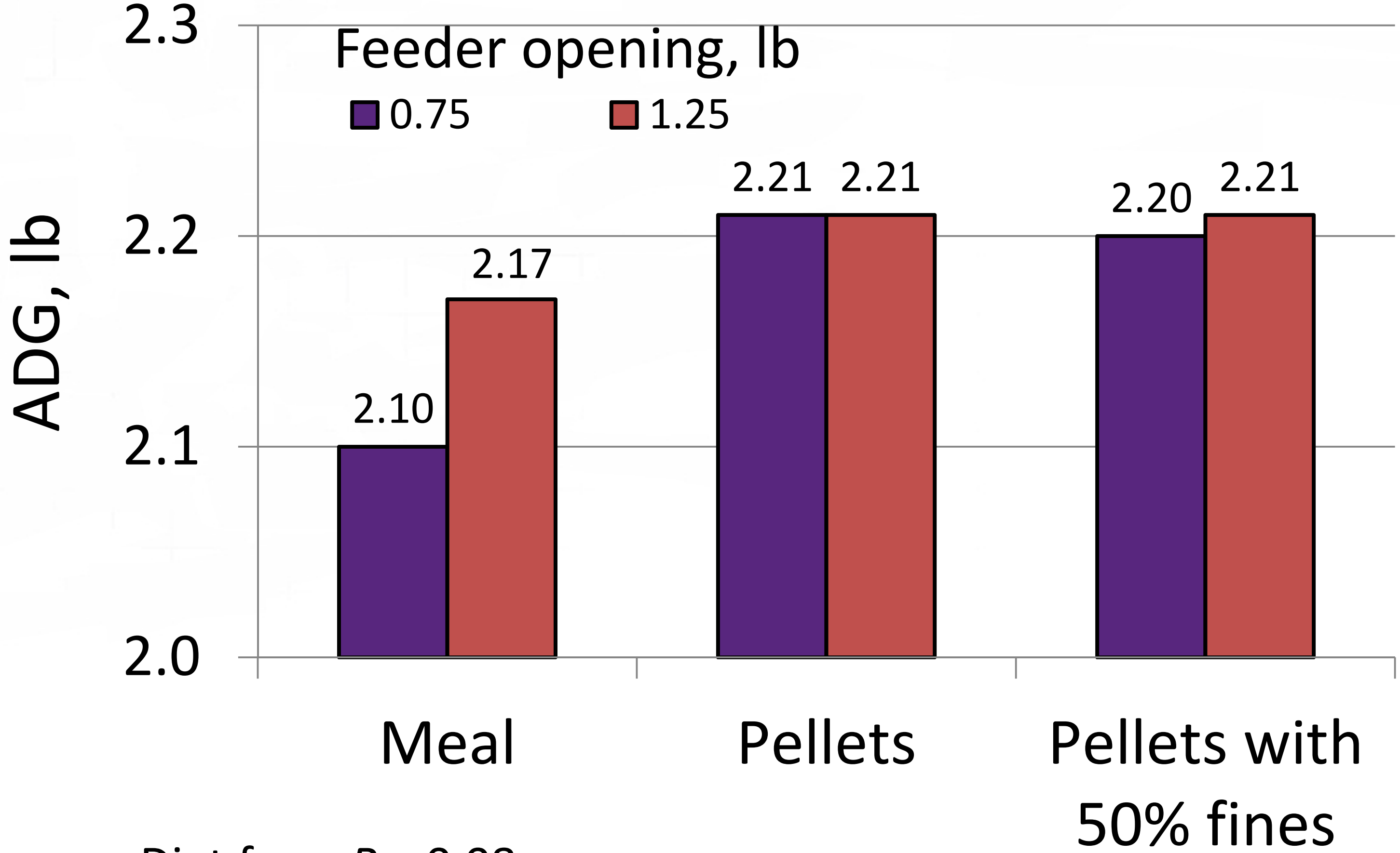
NEW FASHION PORK

HUBBARD

Nemecheck et al. 2012

Knowledge for Life

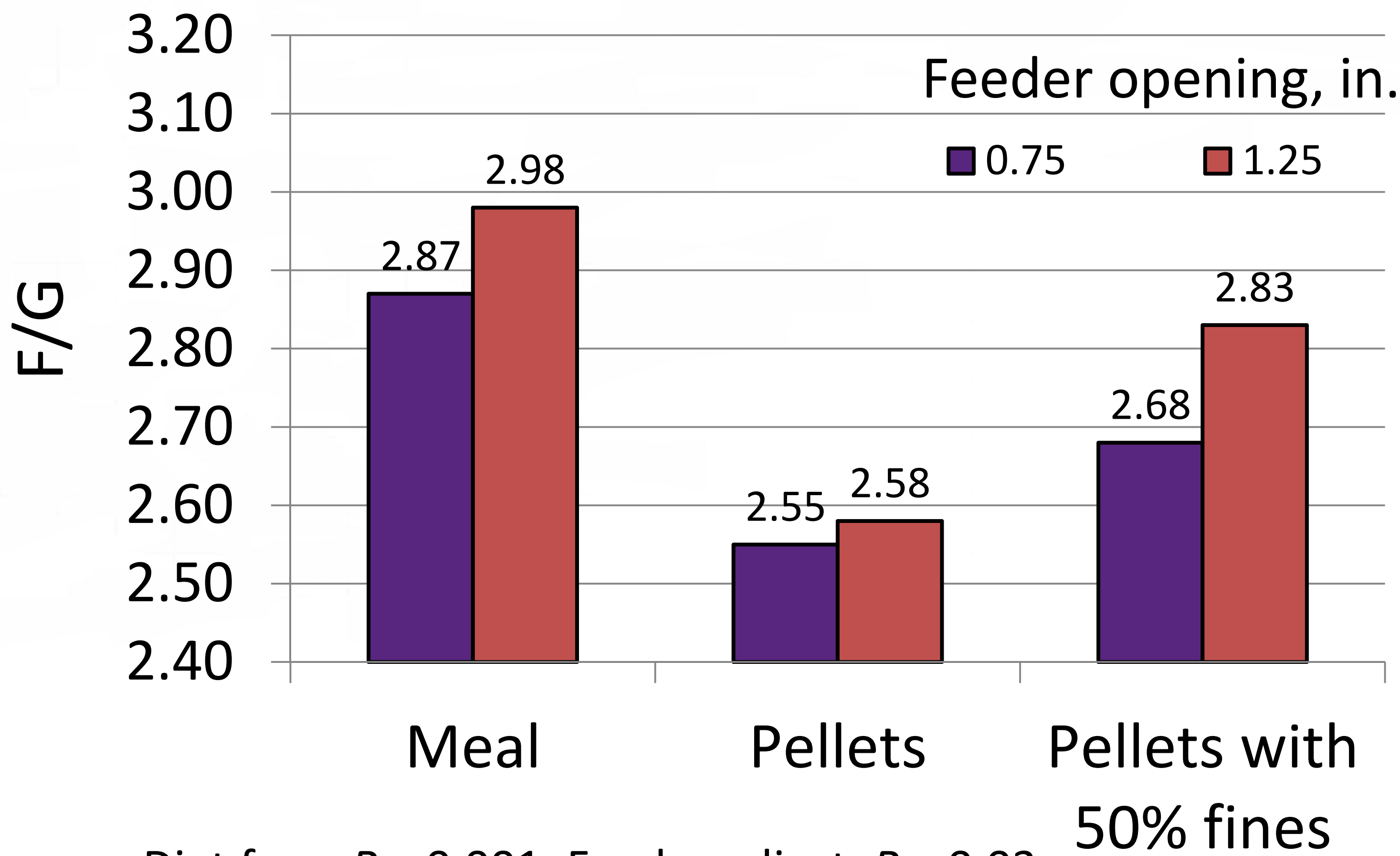
Effects of feeder adjustment and pellet quality on finisher ADG



Diet form P = 0.08

Nemecheck et al. 2012

Effects of feeder adjustment and pellet quality on F/G



Diet form *P* < 0.001; Feeder adjust. *P* < 0.03

K-STATE Research and Extension

NEW FASHION PORK

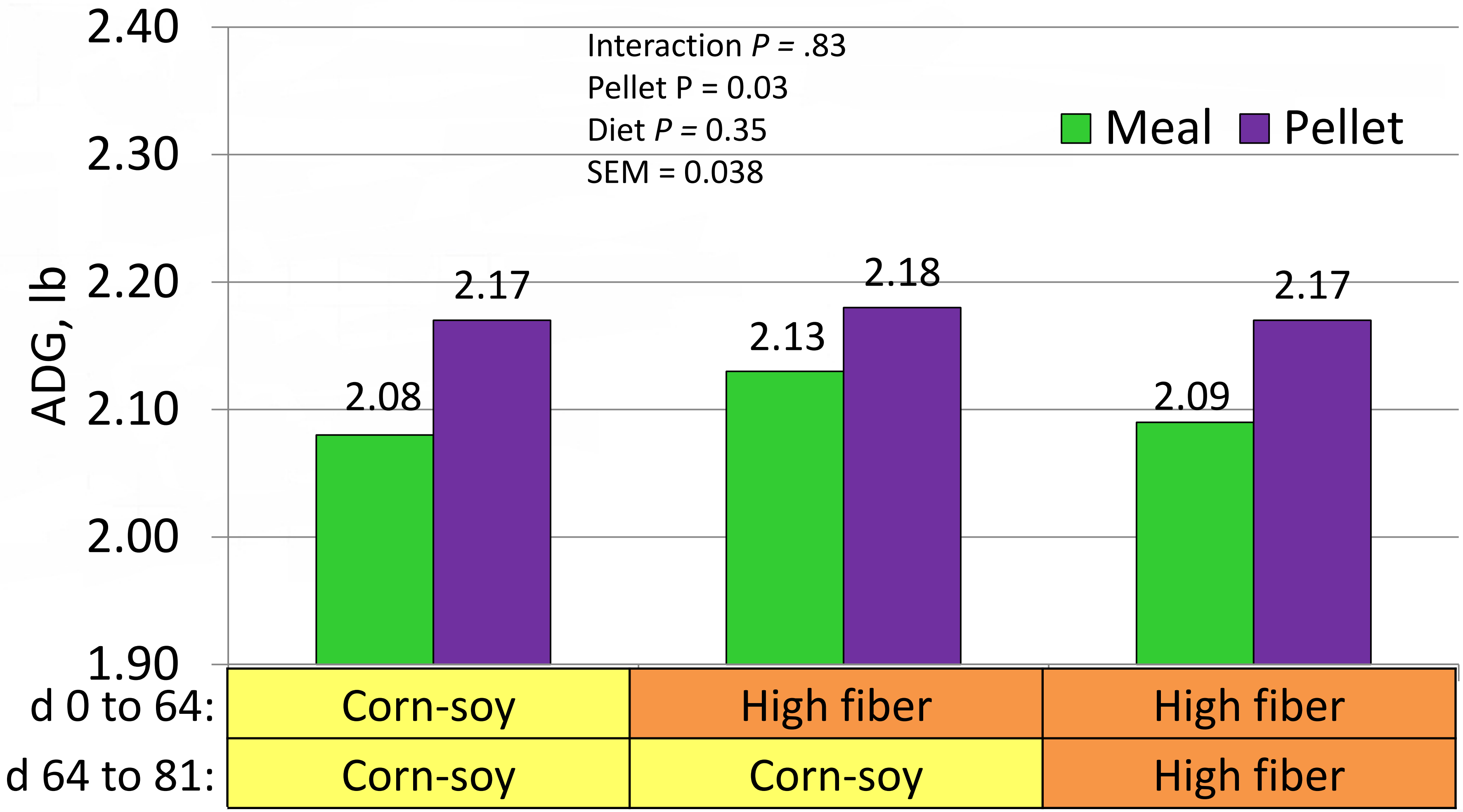
Nemecheck et al. 2012

Knowledge for Life

- Wide feeder adjustment with 50% fines

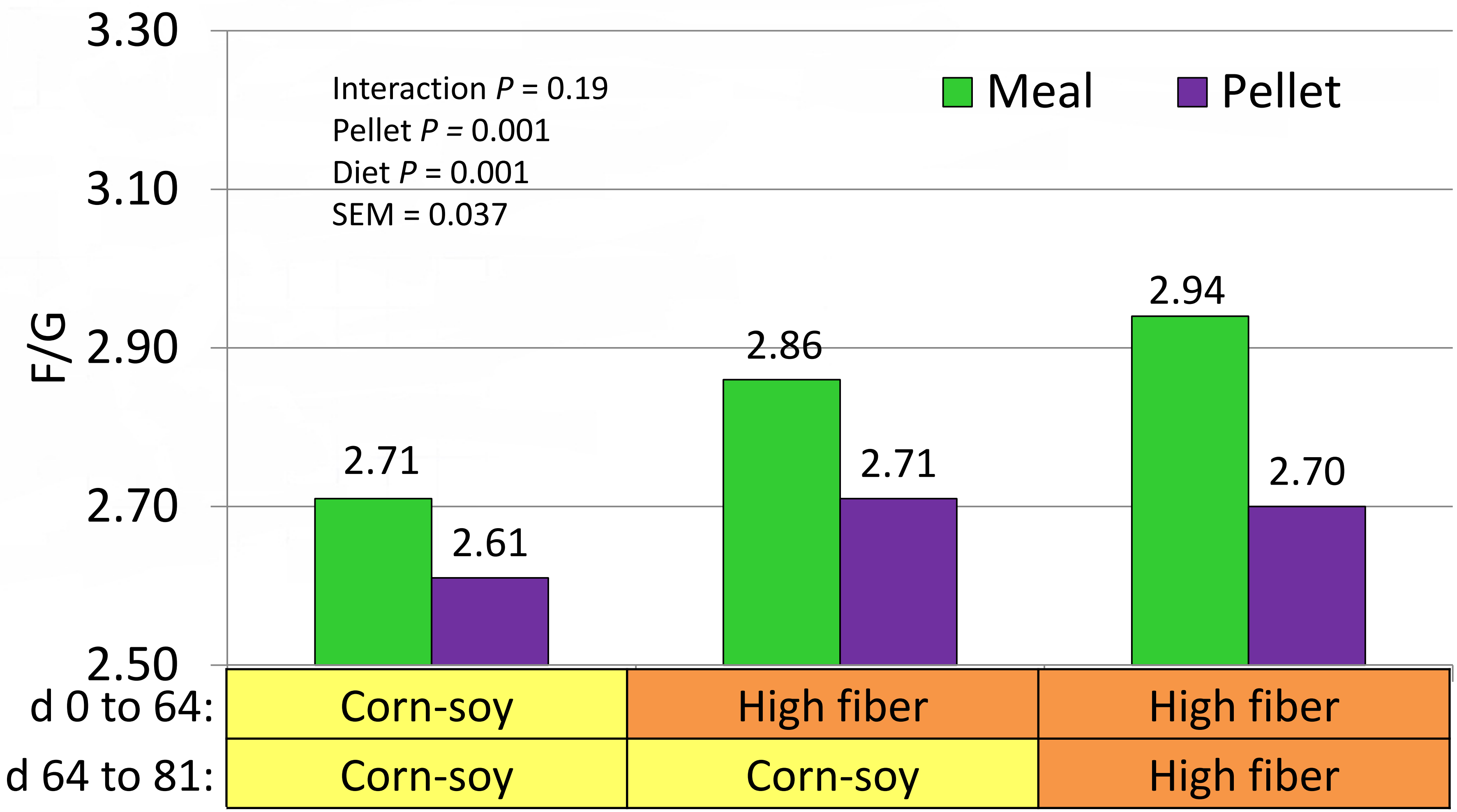
- Wide feeder adjustment with 10% fines

Effect of fiber level and diet form on finishing pig performance (d 0 to 81; BW 109 to 287 lb)



Nemechek et al., 2012

Effect of fiber level and diet form on finishing pig performance (d 0 to 81; BW 109 to 287 lb)

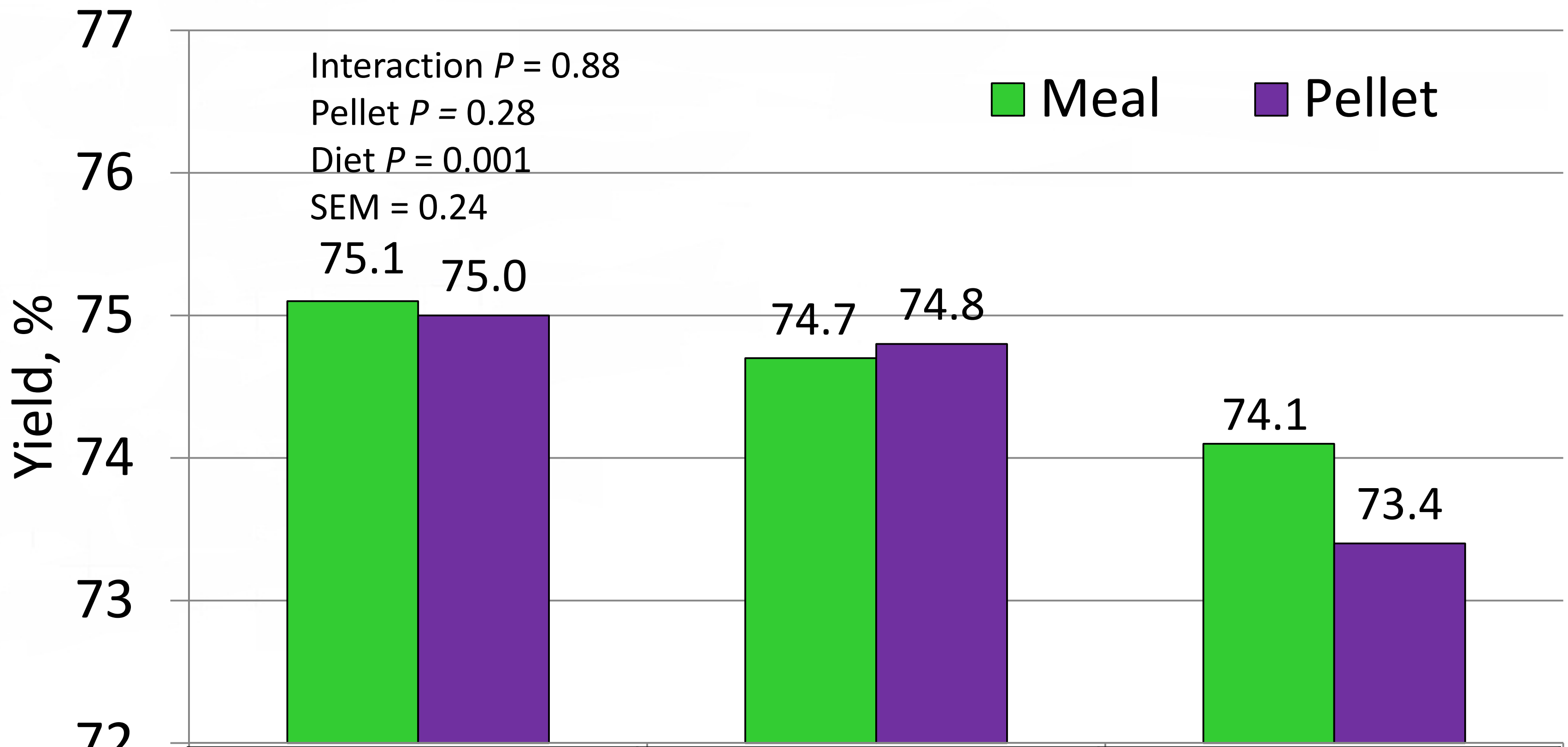


Nemechek et al., 2012

K·STATE Research and Extension

Knowledge for Life

Effect of fiber level and diet form on finishing pig performance (d 81; BW 287 lb)



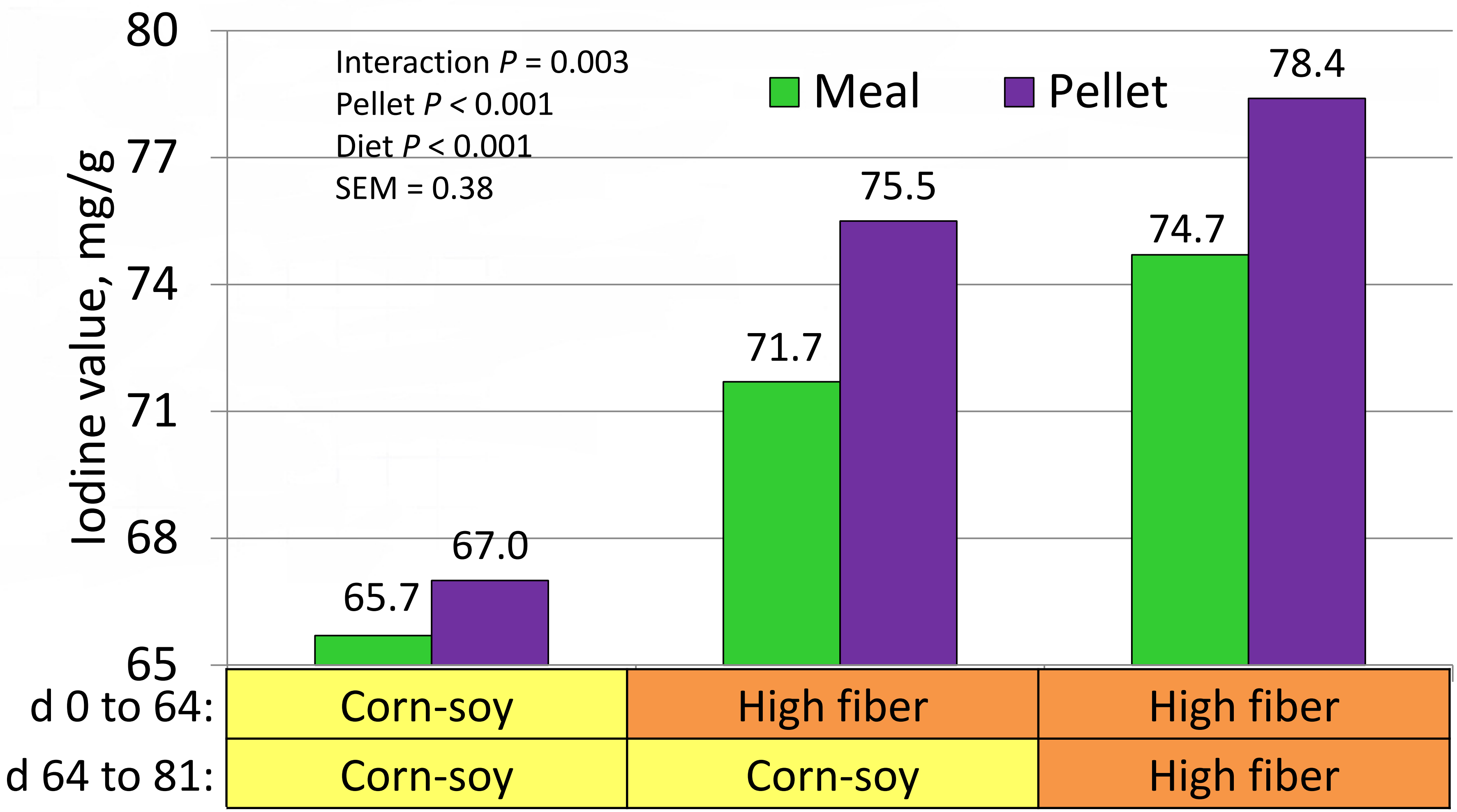
d 0 to 64:	Corn-soy	High fiber	High fiber
d 64 to 81:	Corn-soy	Corn-soy	High fiber

K-STATE Research and Extension

Nemechek et al., 2012

Knowledge for Life

Effect of fiber level and diet form on finishing pig belly fat iodine value (d 81; BW 287 lb)



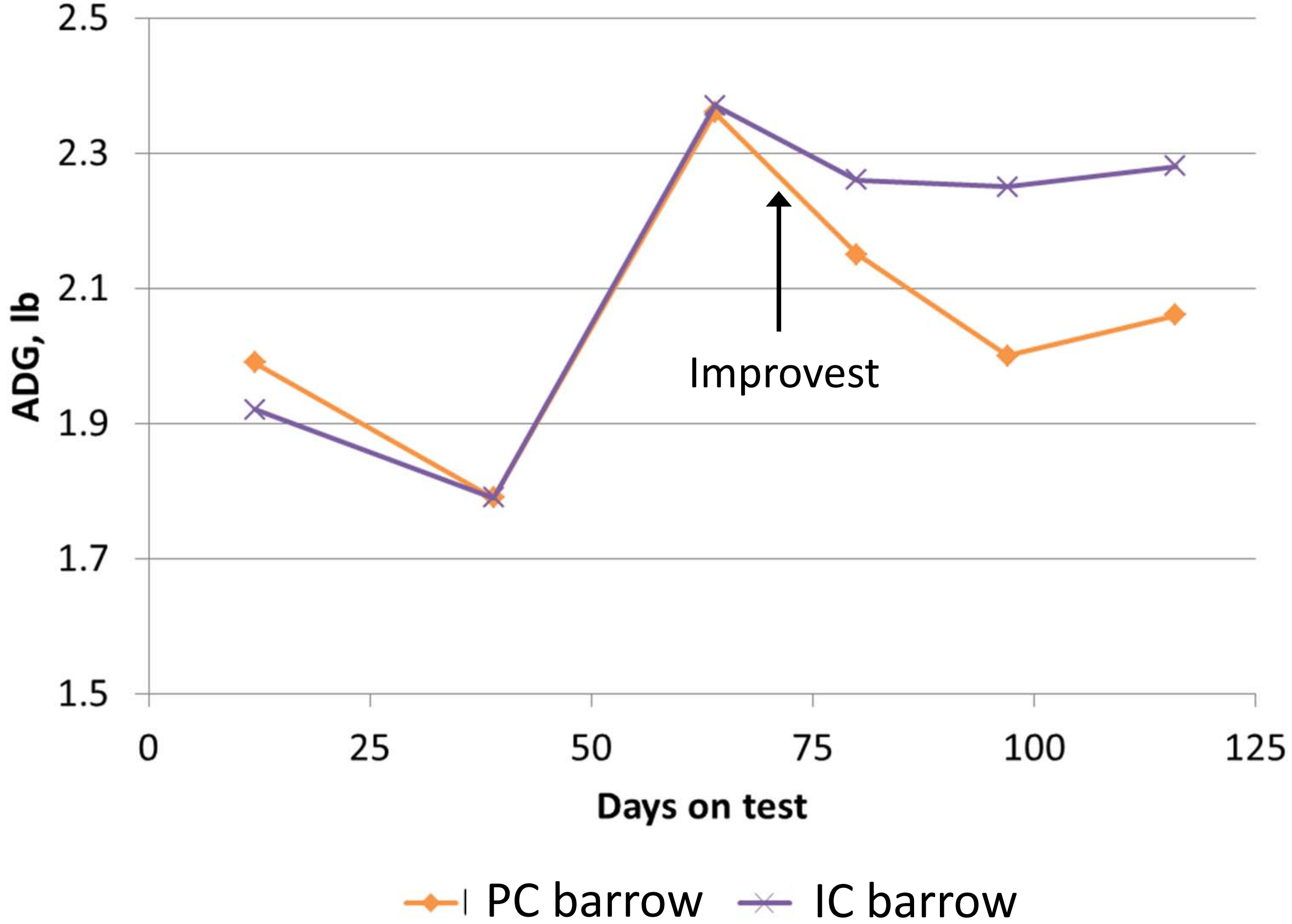
Nemechek et al., 2012

Effect of DDGS withdrawal on IC pigs

- 2 x 3 factorial
  - Physical castrated barrows vs immunocastrates
    - 2 ml primer dose on d 39 (110 d of age)
    - 2 ml second dose on d 74 (145 d of age)
    - Quality assurance check on d 88 (21 of 680 pigs)
  - DDGS duration
    - 0% throughout
    - 30% throughout
    - 30% from d 0 to 74 (200 lb), then 0% from d 74 to 125

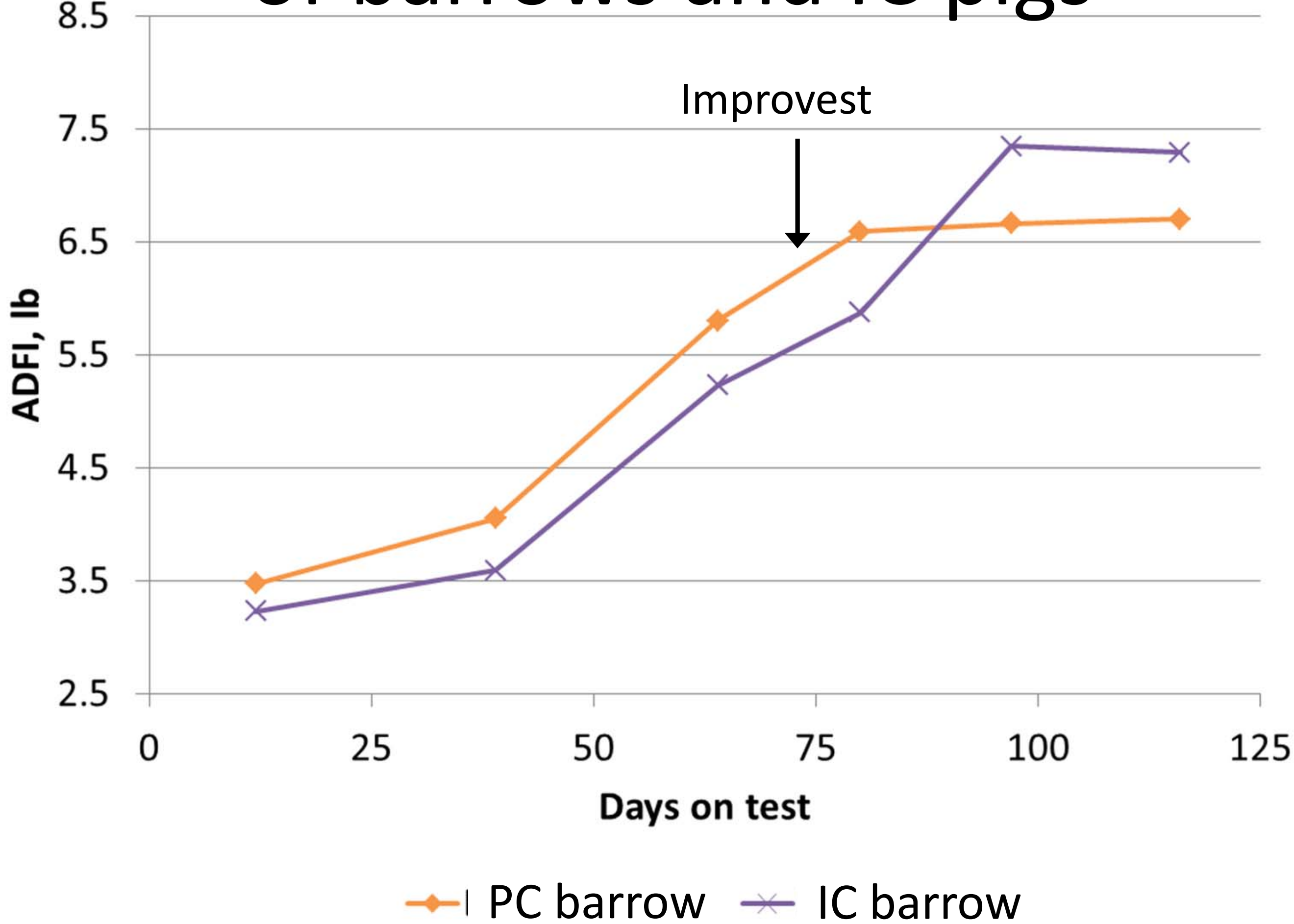
Wt, lb:	53		200	260	300
Day:	0	39	74	107	125

Effect of DDGS removal on performance of barrows and IC pigs



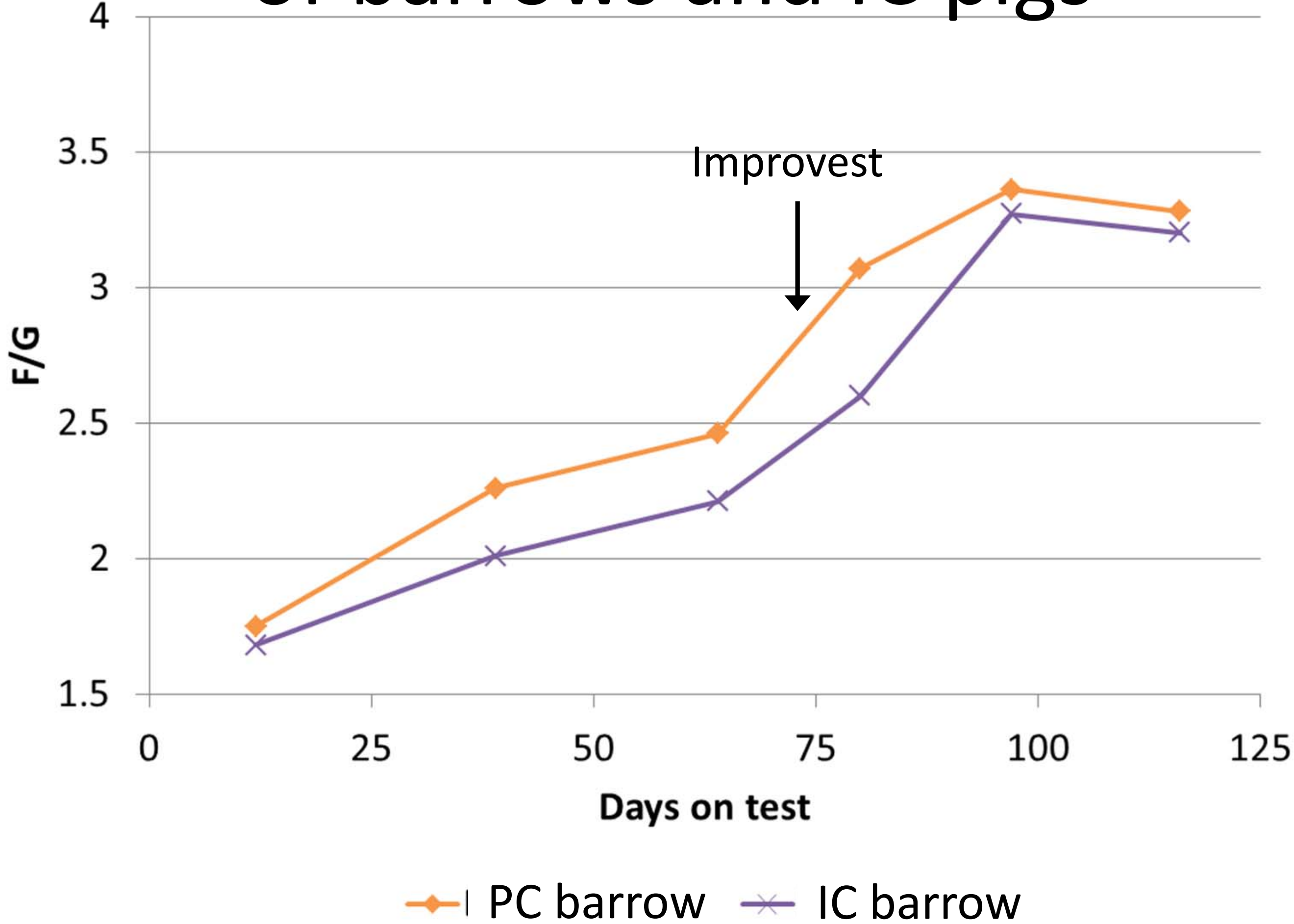
Asmus et al., 2012

Effect of DDGS removal on performance of barrows and IC pigs



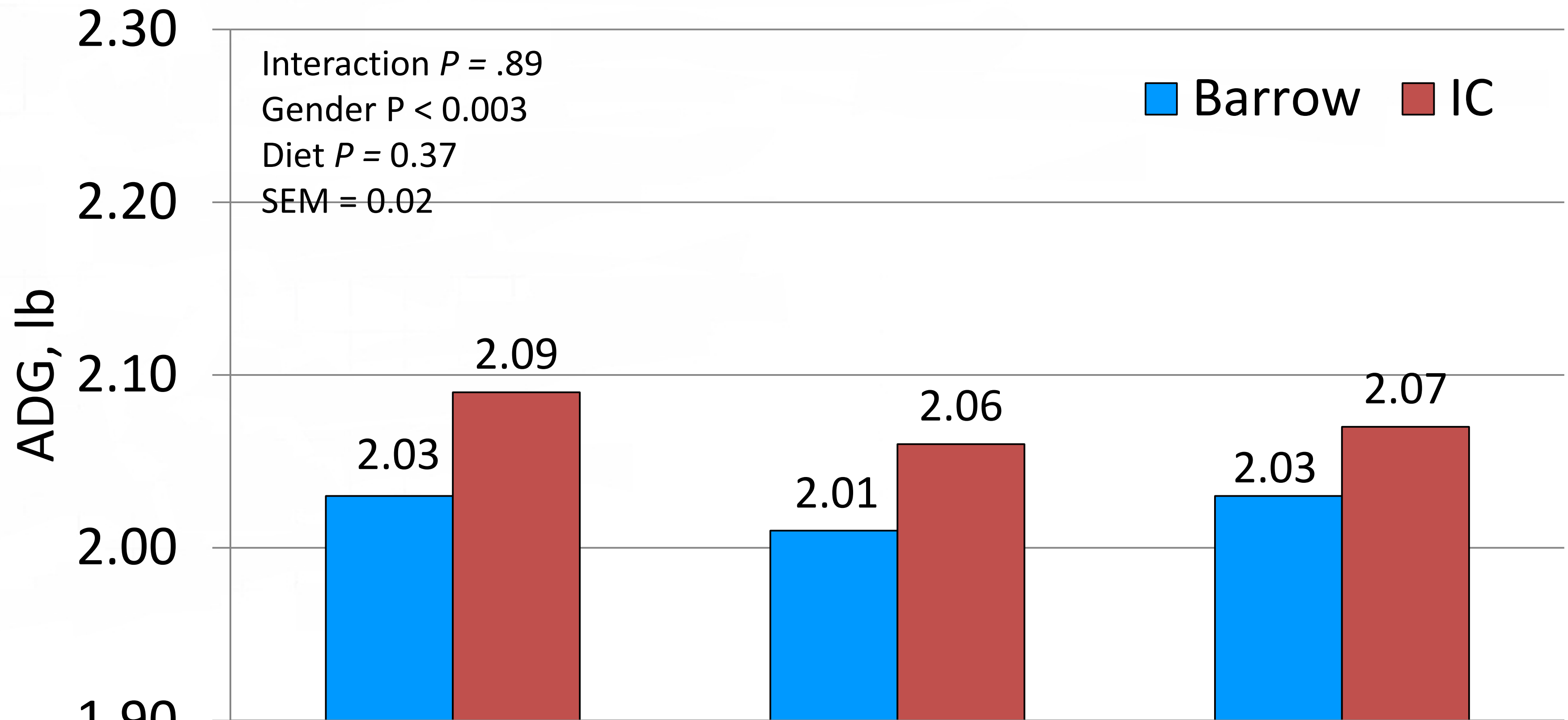
Asmus et al., 2012

Effect of DDGS removal on performance of barrows and IC pigs



Asmus et al., 2012

Effect of DDGS removal on performance of barrows and IC pigs (d 0 to 125; BW 53 to 300 lb)



d 0 to 74:	Corn-soy	30% DDGS	30% DDGS
d 74 to 125:	Corn-soy	Corn-soy	30% DDGS

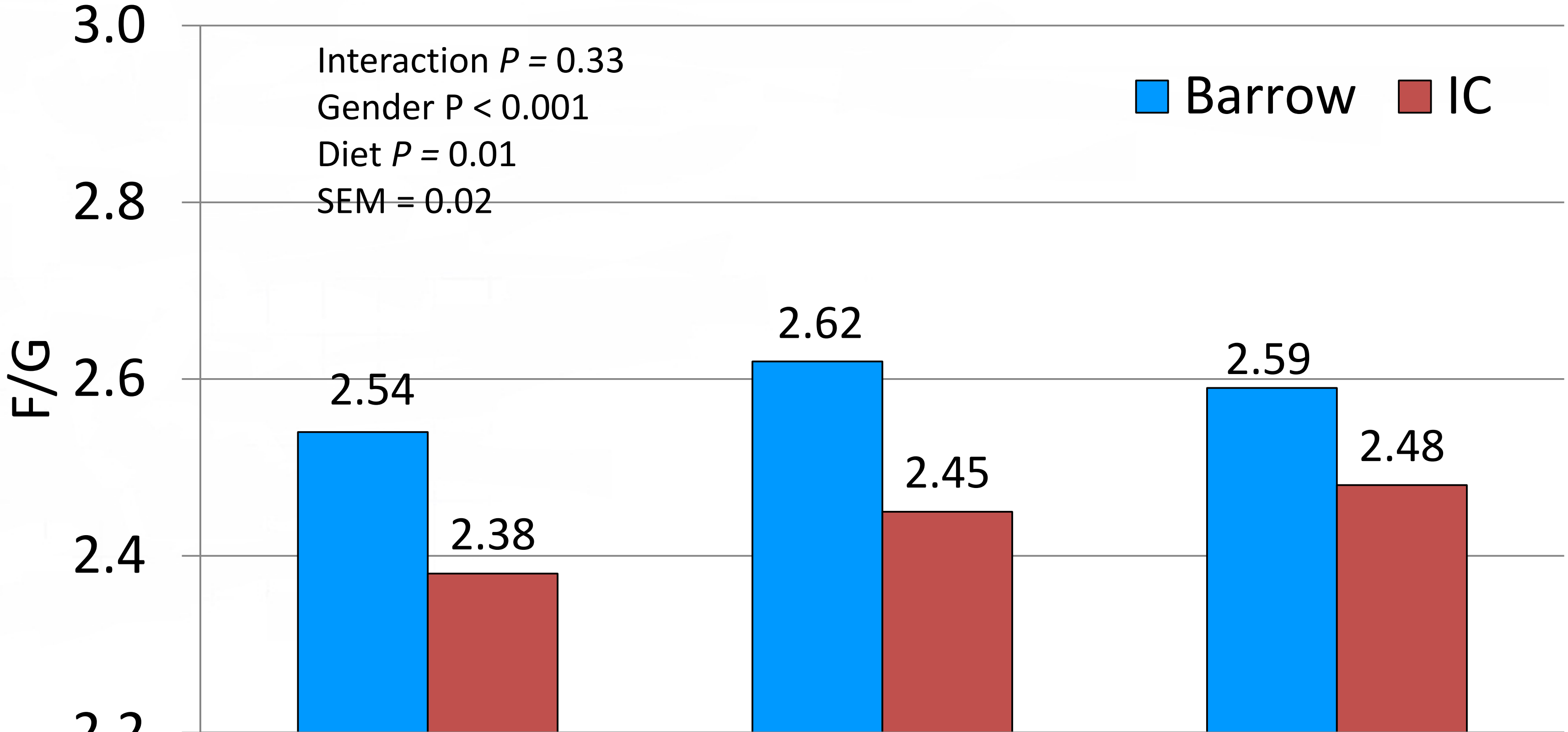
K·STATE Research and Extension

New Horizon Farms LLP

Asmus et al., 2012

Knowledge for Life

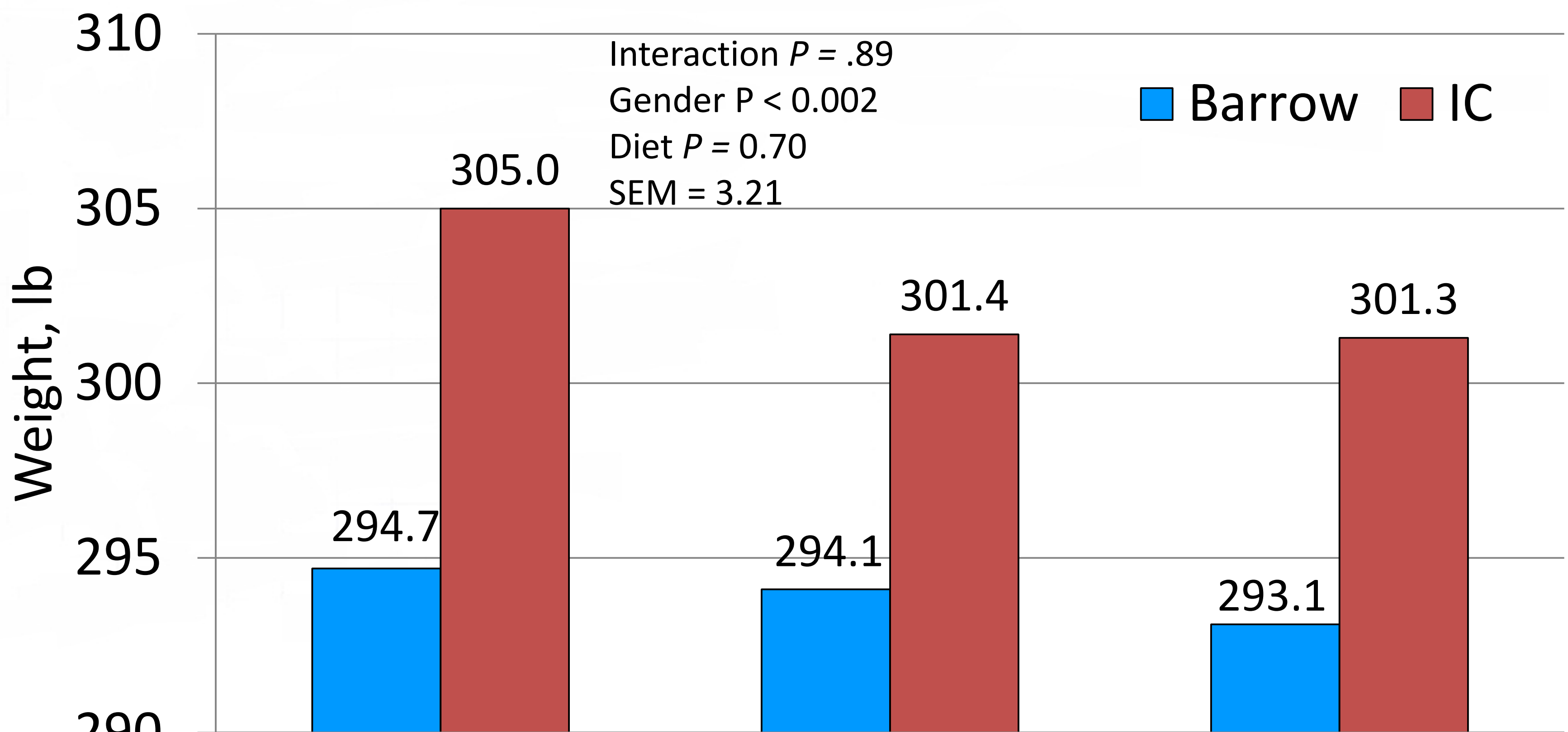
Effect of DDGS removal on performance of barrows and IC pigs (d 0 to 125; BW 53 to 300 lb)



d 0 to 74:	Corn-soy	30% DDGS	30% DDGS
d 74 to 125:	Corn-soy	Corn-soy	30% DDGS

Asmus et al., 2012

Effect of DDGS removal on performance of barrows and IC pigs (d 125; BW 300 lb)



d 0 to 74:	Corn-soy	30% DDGS	30% DDGS
d 74 to 125:	Corn-soy	Corn-soy	30% DDGS

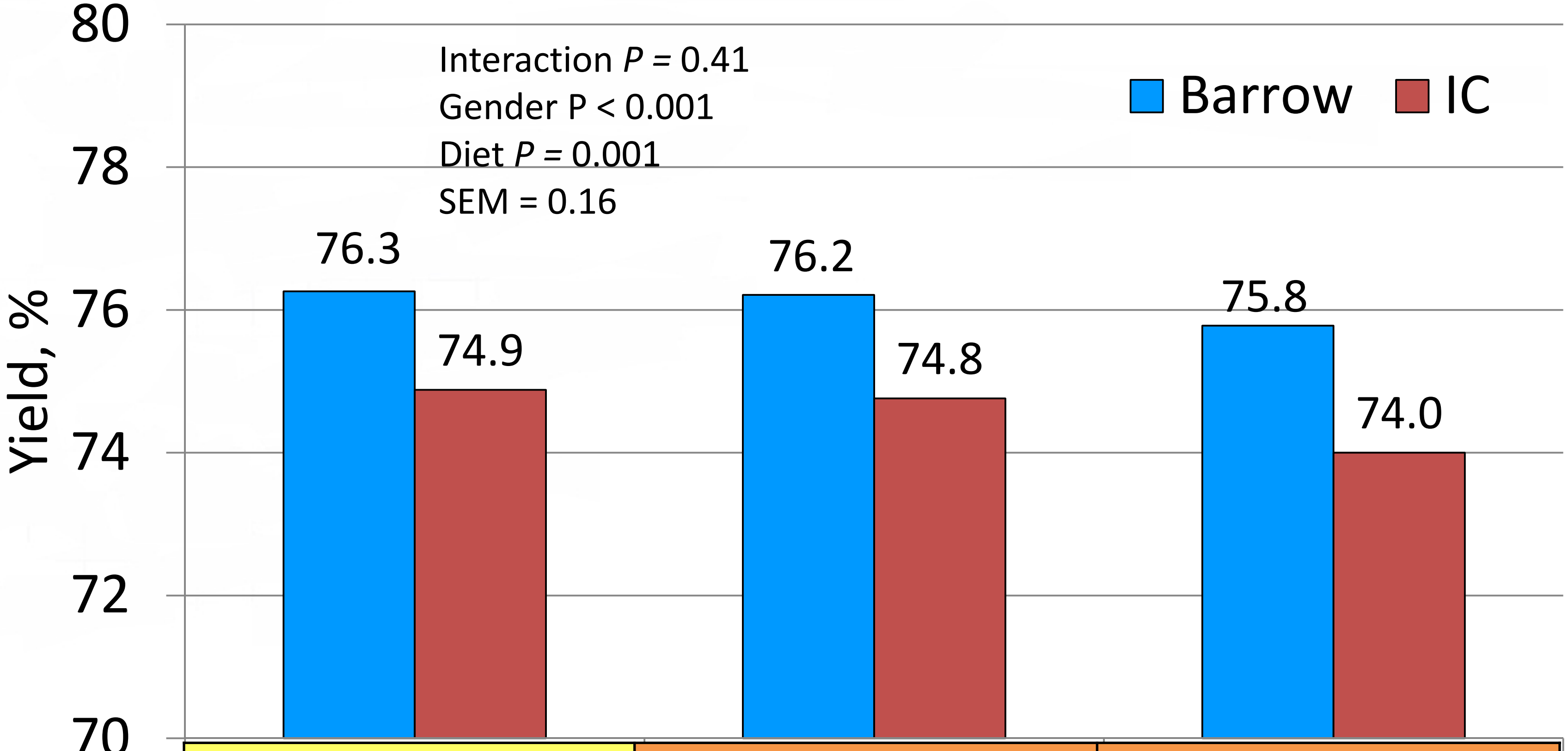
K·STATE Research and Extension

NEW HORIZON FARMS LLP

Asmus et al., 2012

Knowledge for Life

Effect of DDGS removal on performance of barrows and IC pigs (d 125)



d 0 to 74:	Corn-soy	30% DDGS	30% DDGS
d 74 to 125:	Corn-soy	Corn-soy	30% DDGS

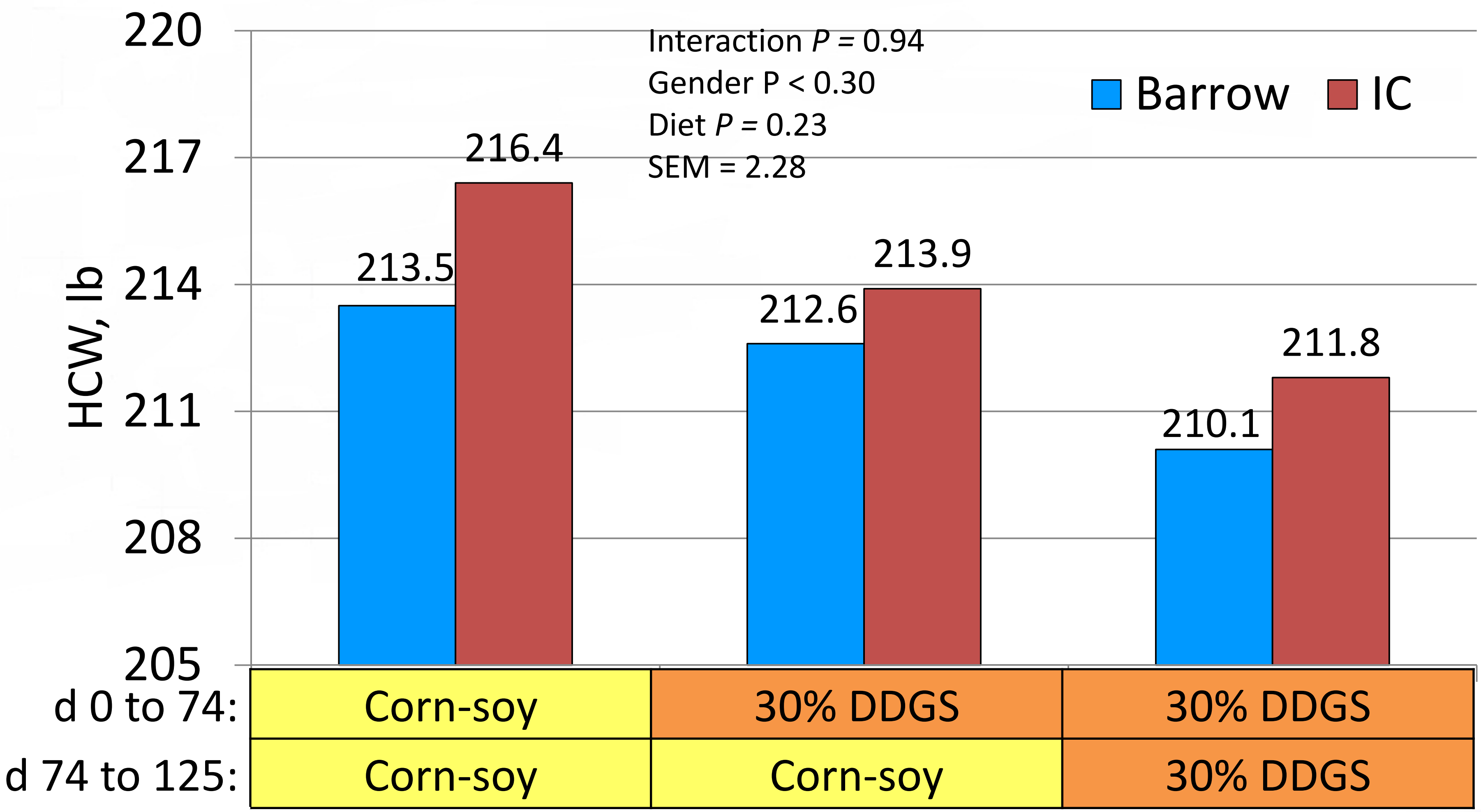
K·STATE Research and Extension

New Horizon Farms LLP

Asmus et al., 2012

Knowledge for Life

Effect of DDGS removal on performance of barrows and IC pigs (d 125)

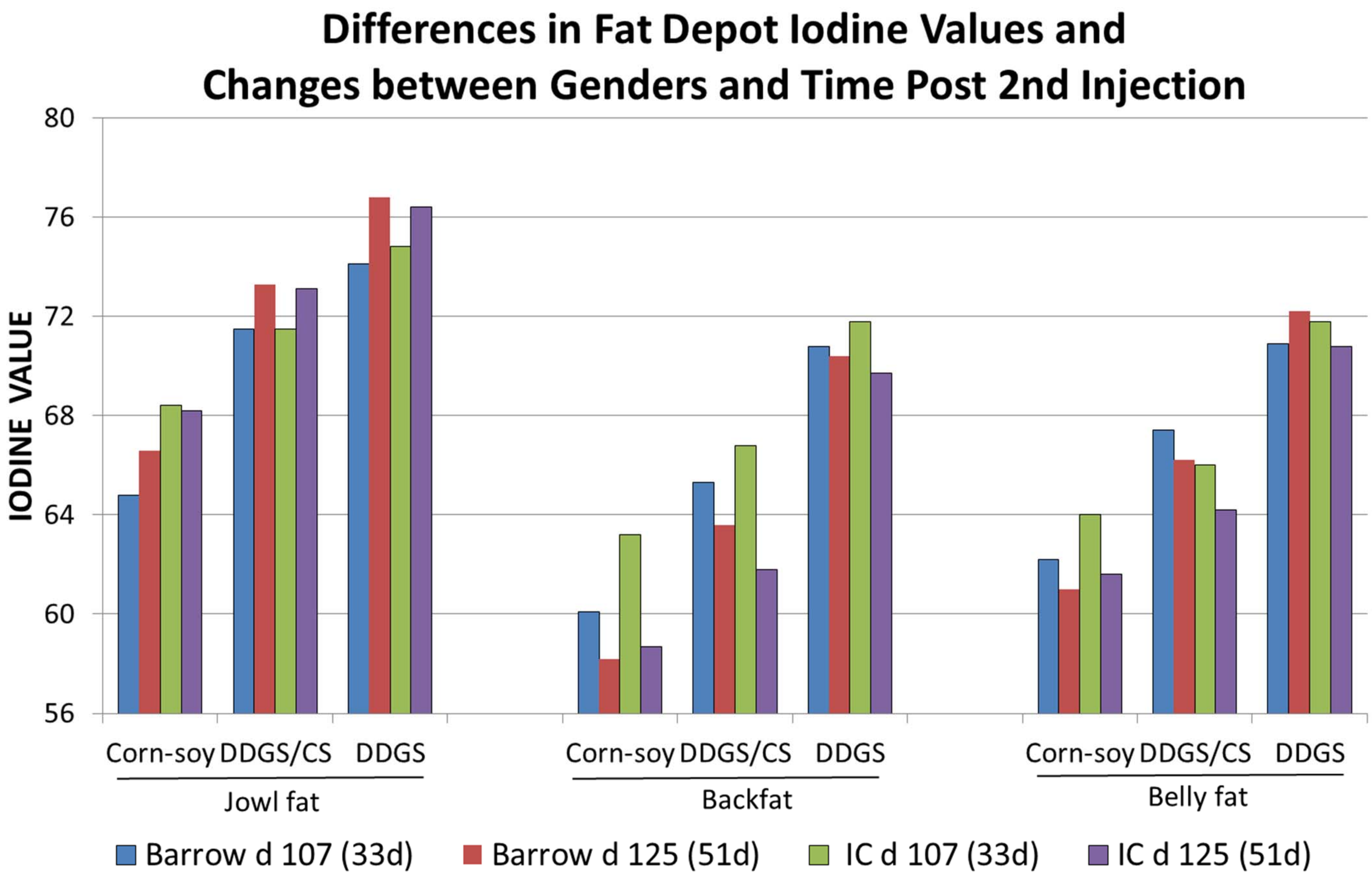


K-STATE Research and Extension

New Horizon Farms LLP

Asmus et al., 2012

Knowledge for Life



K·STATE Research and Extension

NEW HORIZON FARMS LLP

Asmus et al., 2012

Knowledge *for* Life

Effect of DDGS withdrawal on IC barrows

- Response to DDGS withdrawal was similar to our other research.
- Immunocastrates had reduced carcass yield, regardless of diet type; however, they also had lower ADFI and improved ADG, which resulted in improved F/G.
- Although Improvest barrows can increase IV of fat depots when pigs are harvested at 5 wk post 2nd injection, extending the length of feeding duration prior to harvest after the second injection returns IV to values similar to physically-castrated barrows.

Abstract # SO0296

Meta-analysis comparing growth performance, carcass characteristics, and water usage of pigs fed using conventional dry or wet-dry feeder

Sureemas Nitikanchana, Kansas State University

Best Production Medicine Abstract

2012 International Pig Veterinary Society

Introduction

- Recent research at K-State (2010 – 2011) in commercial facility
  - **Bergstorm (6 studies)**

    ↑ ADG, ↑↓ADFI, G:F ??

    ↑ BF, ↓ FFLI, ↓ Loin, ↑ % tough coverage
  - **Myers (2 studies)**

    ↑ ADG, ↑↓ADFI, G:F ??

    ↑ BF, ↓ FFLI, ↓ Yield

    Feeder design x diet type
  - **Nitikanchana (3 studies)**

    ↑ ADG, ↑ADFI, G:F ??

Meta-analysis results (15 experiments)

Items	Dry	Wet-dry	SEM	*P* - value
Initial wt, lb	74.3	74.3	5.9	0.27
Final wt, lb	228.6	235.9	13.8	<0.01
ADG, lb	1.92	2.01	0.046	<0.01
ADFI, lb	5.09	5.36	0.223	<0.01
F/G	2.59	2.59	0.10	0.93
Yield, %	75.8	75.6	0.26	0.57
HCW, lb	201.7	208.1	2.1	<0.01
BF, mm	16.7	18.1	0.23	<0.01
Loin, mm	62.2	61.6	0.68	0.14
Lean, %	51.4	50.8	0.85	<0.01
Water disappearance, L/pig/d	6.4	5.0	0.34	0.02

Nitikanchana et al., 2012

Wet-dry feeder economic analysis
(IOFC, Income over feed cost)

Feed cost = 306 $/ton, Carcass price = 0.88 $/lb, 1.5$/ %lean reduction

	Same F/G	Same F/G Reduction in Lean	Poor F/G	Poor F/G Reduction in lean
Dry	90.81	90.81	88.86	88.86
Wet-Dry	92.42	91.55	88.77	87.81
$/pig	+ 1.61	+0.74	- 0.09	-0.95

K·STATE Research and Extension

Nitikanchana et al., 2012

Knowledge for Life

KANSAS STATE UNIVERSITY

Search web, people, directories

Browse A-Z   Sign in

Animal Sciences and Industry

www.KSUswine.org

Swine Research and Extension

The Kansas State University Swine Extension program takes practical swine nutrition research and works with producers to facilitate rapid adoption of technology by the industry. The program also works with producers in the area of environmental management of swine facilities.

Swine Nutrition Resources

- Premix & Diet Recommendations
- Swine Nutrition Guide, November 2007 Edition
- DDGS, Added Fat, and Amino Acid, Meat and Bone Meal, Phytase, and Feed Budget Calculators
- Feeder Adjustment Cards
- Gestation Feeding Tools
- Particle Size Information
- Marketing Tools
- Aflatoxin fact sheet

Swine Research Index

K-State swine resear[...]cations can be searched at

h[...]//Krex.ksu.edu

Swine Day Publica[...]ons

Swine Day 2012
Swine Day 2011
Swine Day 2010
Swine Day 2009 and Swine Day Presentations

Swine Day 2012

Quick Links

- Pork Information Gateway
- Kansas Pork Association
- National Pork Board (NPB)
- NPB Trucker Quality Assurance
- NPB Pork Quality Assurance
- NPB Pork Science
- KSU Livestock Budgets
- KSU AgManager
- Swine Feed Efficiency

Upcoming Events

2012 KSU Swine Day
KSU Alumni Center
November 15, 2012
2012 Swine Day

Sowbridge Breeding Herd Education Series 2012-2013
Multiple Locations
Multiple Dates
Sowbridge Brochure

Porkbridge
Multiple Locations
Multiple Dates
Porkbridge Brochure

Swine Research Faculty

Dr. Duane L. Davis
Swine Reproductive Physiology

Dr. Joel DeRouchey
Environmental management

KANSAS STATE UNIVERSITY

Search web, people, directories

Browse A-Z | Sign in

K-State home » Animal Sciences and Industry » Species » Swine » Research & Extension

Animal Sciences and Industry

www.KSUswine.org

- Home
- People
- General
- Students & Programs
- Research & Extension
- Services & Sales
- Species
  - Beef
  - Dairy
  - Equine
  - Poultry
  - Sheep & Goats
  - Swine
    - Research & Extension
      - Feeder Adjustment Cards
      - Calculators
      - Gestation Feeding Tools
      - Particle Size Information
      - Premix & Diet
      - Recommendations
      - Swine Nutrition Guide
      - Marketing Tools
    - Teaching
    - People
    - Swine Day
    - Swine Profitability Conference
    - Swine Unit

Swine Research and Extension

The Kansas State University Swine Extension program takes practical swine nutrition research and works with producers to facilitate rapid adoption of technology by the industry. The program also works with producers in the area of environmental management of swine facilities.

Swine Nutrition Resources

- Premix & Diet Recommendations
- Swine Nutrition Guide, November 2007 Edition
- DDGS, Added Fat, and Amino Acid, Meat and Bone Meal, Phytase, and Feed Budget Calculators
- Feeder Adjustment Cards
- Gestation Feeding Tools
- Particle Size Information
- Marketing Tools
- Aflatoxin fact sheet

Marketing tools

Swine Research Index

K-State swine research publications can be searched at

http://Krex.ksu.edu

Swine Day Publications

Swine Day 2012
Swine Day 2011
Swine Day 2010
Swine Day 2009 and Swine Day Presentations

Quick Links

- Pork Information Gateway
- Kansas Pork Association
- National Pork Board (NPB)
- NPB Trucker Quality Assurance
- NPB Pork Quality Assurance
- NPB Pork Science
- KSU Livestock Budgets
- KSU AgManager
- Swine Feed Efficiency

Upcoming Events

2012 KSU Swine Day
KSU Alumni Center
November 15, 2012
2012 Swine Day

Sowbridge Breeding Herd Education Series 2012-2013
Multiple Locations
Multiple Dates
Sowbridge Brochure

Porkbridge
Multiple Locations
Multiple Dates
Porkbridge Brochure

Swine Research Faculty

Dr. Duane L. Davis
Swine Reproductive Physiology

Dr. Joel DeRouchey
Environmental management

Feed efficiency and marginal cost near market weight

Values specific for your situation can be entered in any of the yellow cells.

If this spreadsheet suggests that pigs be marketed below the packers optimal weight window, please refer to the "KSU Market Weight Predictor" under marketing tool at www.KSUswine.org.

Cost of late finisher diet, $/ton	$310.00
Finisher ADG, lb	1.85
Facility cost, $/pig/day	$0.10
Carcass value, $/lb	$0.80
Finishing mortality, %	3.5%
Average days on feed	120
Yield, %	74.0%
Number of pigs	1000

Finishing closeout data	
Initial wt, lb	50
Final wt, lb	275
Feed/gain	2.80

				Marginal costs				Cumulative loss, $/group* *Does not consider packer discounts		
Carcass weight, lb	Live wt, lb	Cummulative feed, lb	Incremental F/G	Feed cost, $/cwt gain	Mortality, $/cwt gain	Feed and mortality, $/cwt gain	Feed, mortality, & facilities, $/cwt gain	Over feed cost	Over feed and mortality cost	Over feed, mortality, & facilities cost
155.4	210	470.3								
159.1	215	486.3	3.21	$49.71	$2.01	$51.72	$57.12			
162.8	220	502.6	3.25	$50.34	$2.05	$52.39	$57.80			
166.5	225	519.0	3.29	$50.97	$2.10	$53.07	$58.48			
170.2	230	535.7	3.33	$51.60	$2.15	$53.75	$59.15			
173.9	235	552.5	3.37	$52.23	$2.19	$54.43	$59.83			$32
177.6	240	569.6	3.41	$52.86	$2.24	$55.10	$60.51			$97
181.3	245	586.8	3.45	$53.50	$2.29	$55.78	$61.19			$196
185.0	250	604.3	3.49	$54.13	$2.33	$56.46	$61.86			$330
188.7	255	622.0	3.53	$54.76	$2.38	$57.14	$62.54			$497
192.4	260	639.8	3.57	$55.39	$2.43	$57.81	$63.22			$698
196.1	265	657.9	3.61	$56.02	$2.47	$58.49	$63.90			$933
199.8	270	676.2	3.65	$56.65	$2.52	$59.17	$64.58			$1,201
203.5	275	694.6	3.70	$57.28	$2.57	$59.85	$65.25		$32	$1,504
207.2	280	713.3	3.74	$57.91	$2.61	$60.53	$65.93		$99	$1,841
210.9	285	732.2	3.78	$58.54	$2.66	$61.20	$66.61		$199	$2,211
214.6	290	751.3	3.82	$59.17	$2.71	$61.88	$67.29		$333	$2,615
218.3	295	770.6	3.86	$59.80	$2.75	$62.56	$67.96	$30	$501	$3,054
222.0	300	790.1	3.90	$60.44	$2.80	$63.24	$68.64	$92	$702	$3,526

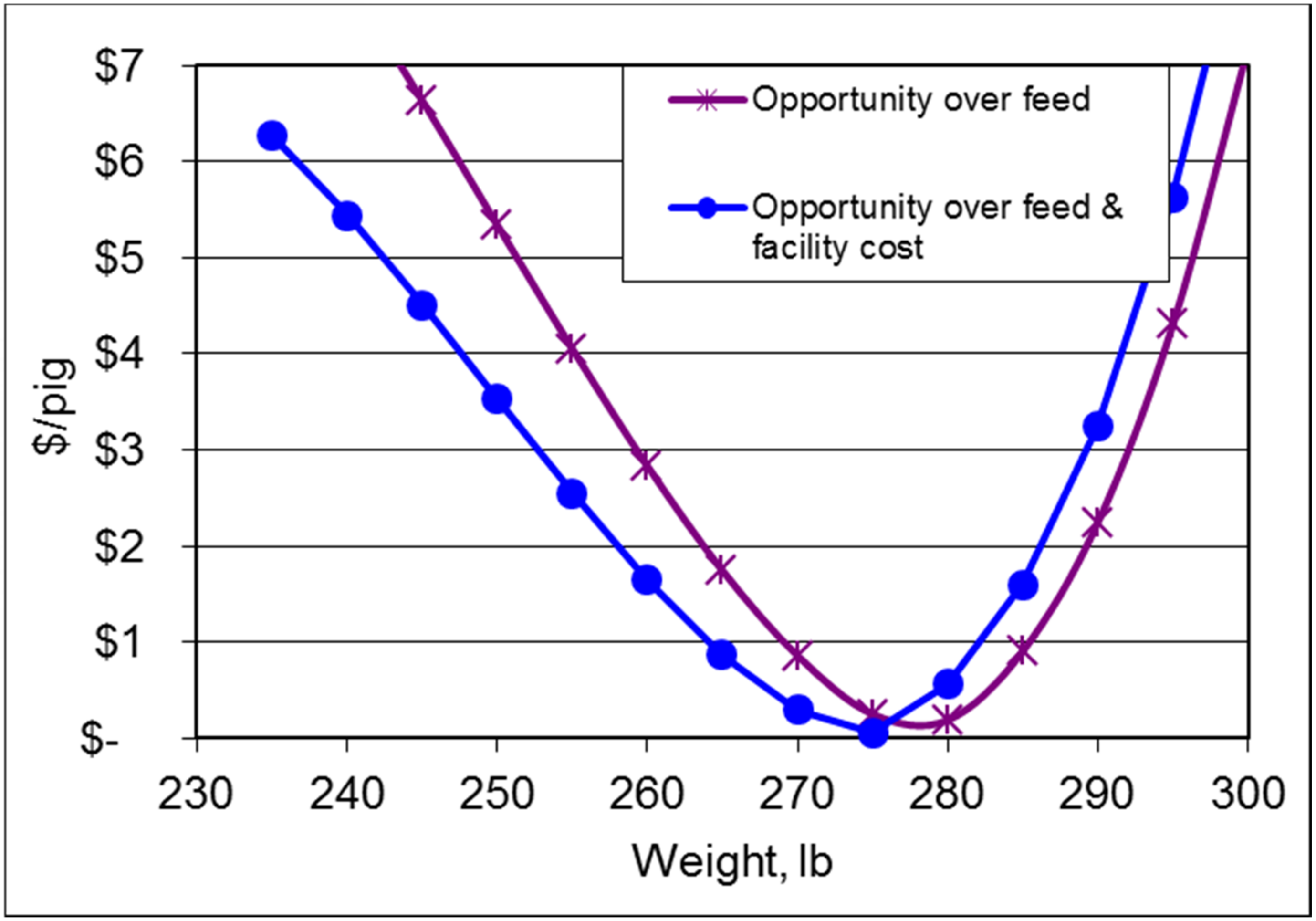
For demonstration purposes only

Any cells with red font indicates that marginal cost exceeds market price at that weight

K·STATE Research and Extension

Carcass base, $/cwt	Feed cost $/ton	Est. live base price, $/cwt
$ 80.00	$ 300.00	$ 60.80

Excel optimal weight



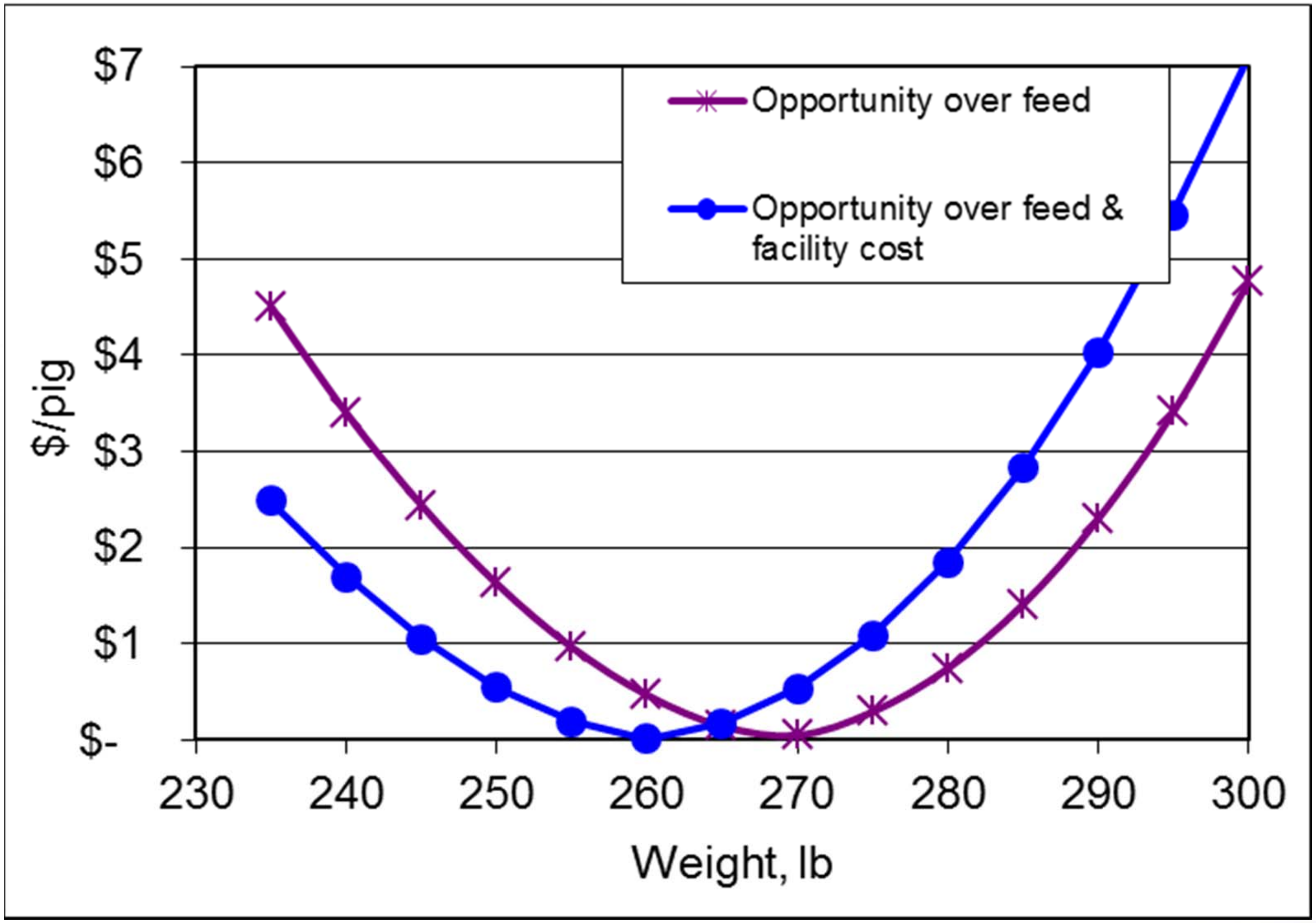
K·STATE
Research and Extension

www.KSUswine.org

Knowledge for Life

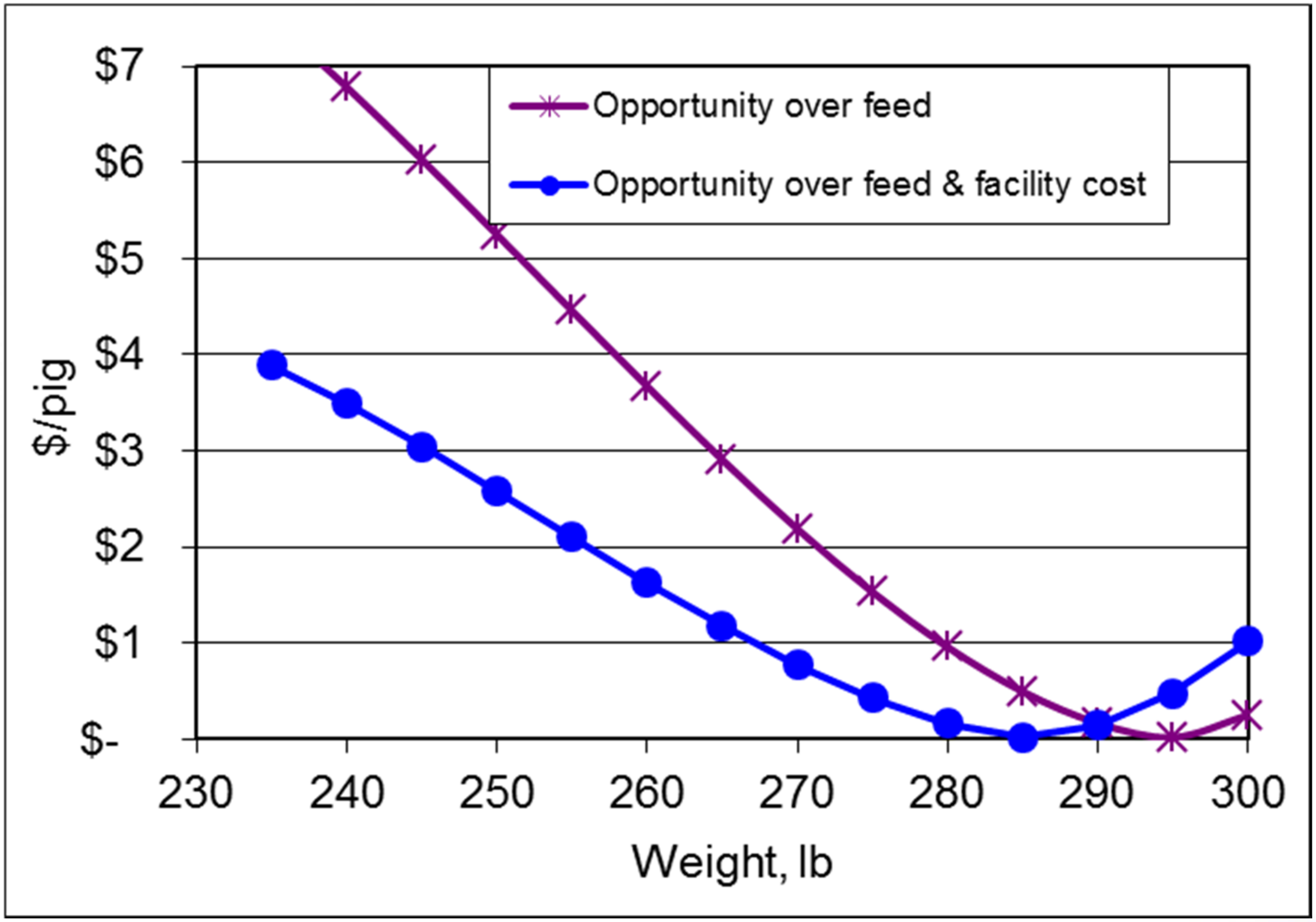
Triumph non-owner

Carcass base, $/cwt	Feed cost $/ton	Est. live base price, $/cwt
$ 80.00	$ 300.00	$ 60.80



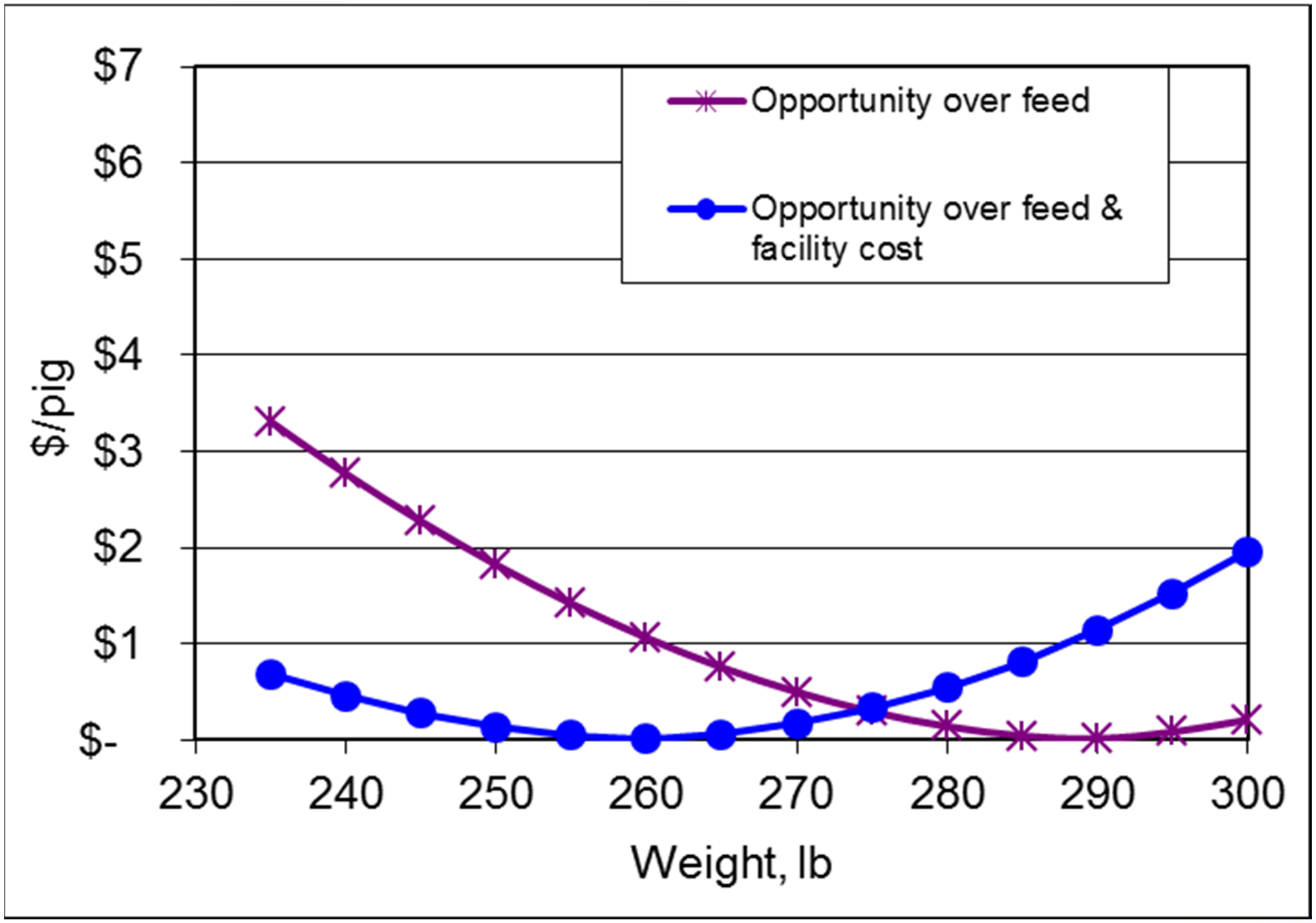
Carcass base, $/cwt	Feed cost $/ton	Est. live base price, $/cwt
$ 80.00	$ 300.00	$ 60.80

Triumph owner



Carcass base, $/cwt	Feed cost $/ton	Est. live base price, $/cwt
$ 80.00	$ 300.00	$ 60.80

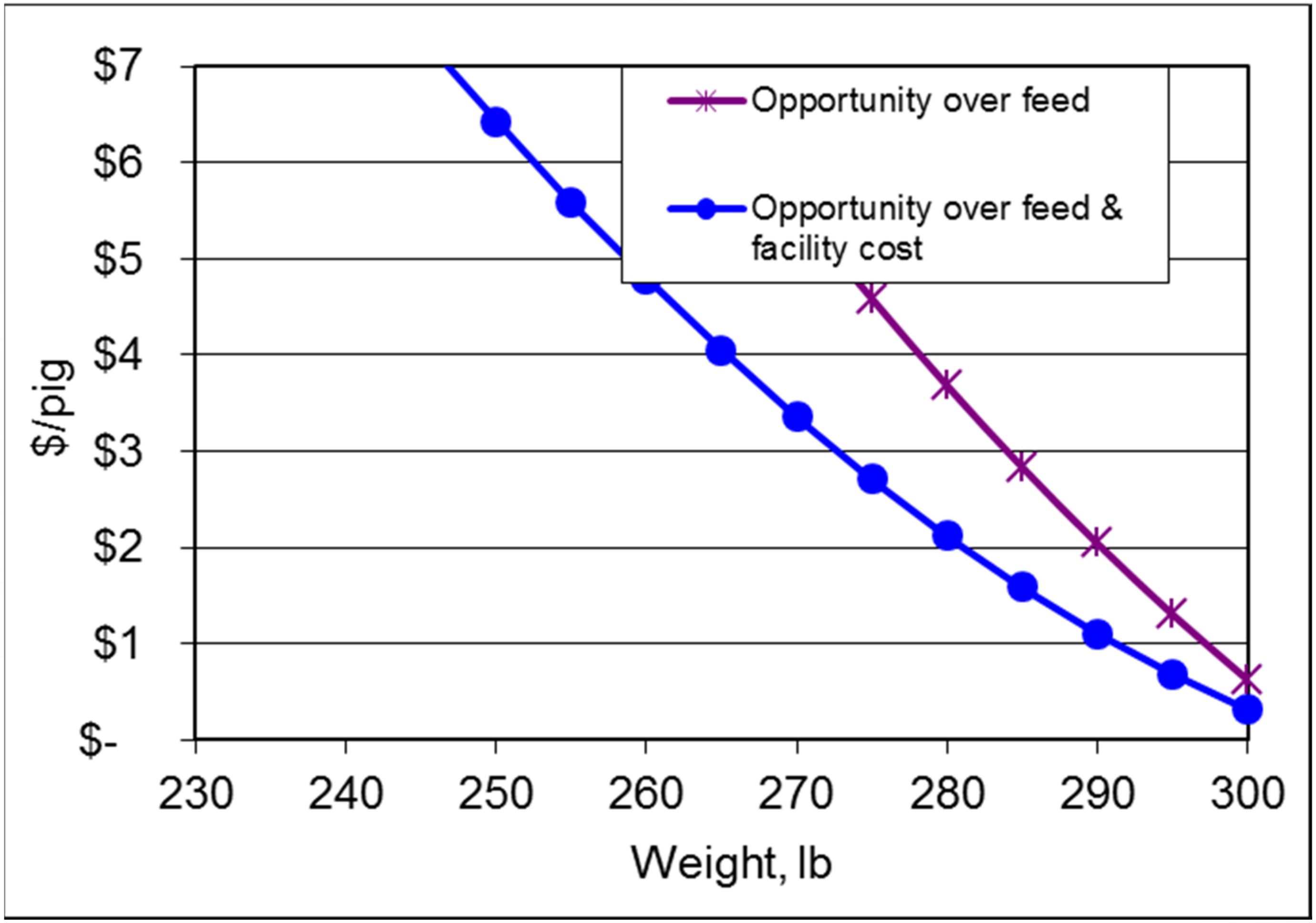
Triumph barn dump



Carcass base, $/cwt	Feed cost $/ton	Est. live base price, $/cwt
$ 100.00	$ 300.00	$ 76.00

Triumph barn dump

June/July Futures



Feed efficiency and marginal cost near market weight

Values specific for your situation can be entered in any of the yellow cells.

Finishing closeout data	
Initial wt, lb	50
Final wt, lb	275
Feed/gain	2.80

Cost of late finisher diet, $/ton	$310.00
Finisher ADG, lb	1.85
Facility cost, $/pig/day	$0.10
Carcass value, $/lb	$1.00
Finishing mortality, %	3.5%
Average days on feed	120
Yield, %	74.0%
Number of pigs	1000

If this spreadsheet suggests that pigs be marketed below the packers optimal weight window, please refer to the "KSU Market Weight Predictor" under marketing tool at www.KSUswine.org.

				Marginal costs				Cumulative loss, $/group* *Does not consider packer discounts		
Carcass weight, lb	Live wt, lb	Cummulative feed, lb	Incremental F/G	Feed cost, $/cwt gain	Mortality, $/cwt gain	Feed and mortality, $/cwt gain	Feed, mortality, & facilities, $/cwt gain	Over feed cost	Over feed and mortality cost	Over feed, mortality, & facilities cost
155.4	210	470.3								
159.1	215	486.3	3.21	$49.71	$2.51	$52.22	$57.62			
162.8	220	502.6	3.25	$50.34	$2.57	$52.91	$58.31			
166.5	225	519.0	3.29	$50.97	$2.63	$53.60	$59.00			
170.2	230	535.7	3.33	$51.60	$2.68	$54.29	$59.69			
173.9	235	552.5	3.37	$52.23	$2.74	$54.97	$60.38			
177.6	240	569.6	3.41	$52.86	$2.80	$55.66	$61.07			
181.3	245	586.8	3.45	$53.50	$2.86	$56.35	$61.76			
185.0	250	604.3	3.49	$54.13	$2.92	$57.04	$62.45			
188.7	255	622.0	3.53	$54.76	$2.98	$57.73	$63.14			
192.4	260	639.8	3.57	$55.39	$3.03	$58.42	$63.83			
196.1	265	657.9	3.61	$56.02	$3.09	$59.11	$64.52			
199.8	270	676.2	3.65	$56.65	$3.15	$59.80	$65.21			
203.5	275	694.6	3.70	$57.28	$3.21	$60.49	$65.89			
207.2	280	713.3	3.74	$57.91	$3.27	$61.18	$66.58			
210.9	285	732.2	3.78	$58.54	$3.33	$61.87	$67.27			
214.6	290	751.3	3.82	$59.17	$3.38	$62.56	$67.96			
218.3	295	770.6	3.86	$59.80	$3.44	$63.25	$68.65			
222.0	300	790.1	3.90	$60.44	$3.50	$63.94	$69.34			

For demonstration purposes only

Any cells with red font indicates that marginal cost exceeds market price at that weight

K-STATE Research and Extension

KANSAS STATE UNIVERSITY

Search web, people, directories

Browse A-Z Sign in

K-State home » Animal Sciences and Industry » Species » Swine » Research & Extension

Animal Sciences and Industry

www.KSUswine.org

- Home
- People
- General
- Students & Programs
- Research & Extension
- Services & Sales
- Species
  - Beef
  - Dairy
  - Equine
  - Poultry
  - Sheep & Goats
  - Swine
    - Research & Extension
      - Feeder Adjustment Cards
      - Calculators
      - Gestation Feeding Tools
      - Particle Size Information
      - Premix & Diet Recommendations
      - Swine Nutrition Guide
      - Marketing Tools
    - Teaching
    - People
    - Swine Day
    - Swine Profitability Conference
    - Swine Unit

Swine Research and Extension

The Kansas State University Swine Extension program takes practical swine nutrition research and works with producers to facilitate rapid adoption of technology by the industry. The program also works with producers in the area of environmental management of swine facilities.

Swine Nutrition Resources

- Premix & Diet Recommendations
- Swine Nutrition Guide, November 2007 Edition
- DDGS, Added Fat, and Amino Acid, Meat and Bone Meal, Phytase, ... d Budget Calculators
- Feeder Adjustment Cards
- Gestation Feeding Tools
- Particle Size Informatio...
- Marketing Tools
- Aflatoxin fact sheet

Swine Research Inde...

K-State swine research publications can be searched at

http://Krex.ksu.edu

Swine Day Publications

Swine Day 2012
Swine Day 2011
Swine Day 2010
Swine Day 2009 and Swine Day Presentations

Quick Links

- Pork Information Gateway
- Kansas Pork Association
- National Pork Board (NPB)
- NPB Trucker Quality Assurance
- NPB Pork Quality Assurance
- NPB Pork Science
- KSU Livestock Budgets
- KSU AgManager
- Swine Feed Efficiency

Swine feed efficiency

Upcoming Events

2012 KSU Swine Day
KSU Alumni Center
November 15, 2012
2012 Swine Day

Sowbridge Breeding Herd Education Series 2012-2013
Multiple Locations
Multiple Dates
Sowbridge Brochure

Porkbridge
Multiple Locations
Multiple Dates
Porkbridge Brochure

Swine Research Faculty

Dr. Duane L. Davis
Swine Reproductive Physiology

Dr. Joel DeRouchey
Environmental management

home page

National Program for Swine Feed Efficiency

Home Page | About | Research | Decision Tools | Publications | Links | Events | Partners | Contact Us

Home Page

November 2012

There is an immediate and urgent interest in improving feed efficiency. The average feed cost has increased by more than $100 per ton in the last year alone. Concurrently, the value of one point in feed conversion has increased from about 30¢ to about 45¢.

Our long term goal is to increase nutrient utilization and feed efficiency in the pig, to strengthen the competitiveness of the pork industry and to reduce its demand on grains and proteins. We will use a truly multi-disciplinary approach in this project, including nutrition, physiology, microbiology, behavior, immunology, quantitative genetics, swine genomics, proteomics, transcriptomics, bioinformatics and statistics. Through this grant, we will develop new knowledge and new tools to benefit our pork industries and agriculture in general.

Recent updates

October 2012

Tool for Measuring Optimum Market Weight
M. Tokach - Kansas State University presenting on K State Radio Network

The physiological basis of differences in efficiency, metabolism and energy partitioning between lines of pigs selected for residual feed intake
N. K. Gabler - Iowa State University presented at Joint Annual Meeting 2012

A Critical Look at the Science Underlying Feed Efficiency
J. F. Patience - Iowa State University presenting at Leman Conference 2012

www.swinefeedefficiency.com

Appearances

November 2012

Dr. Jack Dekker, Animal Genomics Principal Investigator Meeting

IOWA STATE UNIVERSITY

K-STATE Research and Extension

USDA United States Department of Agriculture National Institute of Food and Agriculture

Thank You!

K·STATE
Research and Extension