Moving to Heavier Market Hogs

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Government of Alberta

Alberta
Freedom To Create. Spirit To Achieve.

Packers want heavier carcasses …

- Dilutes their costs, … ***what happens to yours?***
- You will need more finishing space
- You will **feed** hogs for longer
- Barn turnover rate ↓
- So… **more costs !!**
- ***Will the extra kgs of pork pay back $$?***

Stocking Density

Space allocation = k*BW^0.667

Hogs per pen

k	BW, kg	BW, lb	m2/hog	ft2/hog	1 x 2.5 m 3.3 x 8.2 ft	2.5 x 6 m 8.2 x 19.7 ft	4 x 9 m 13 x 29.5 ft
0.035	**30**	66	0.34	3.7	7	**44**	105
0.035	**40**	88	0.41	4.5	6	**36**	87
0.035	**50**	110	0.48	5.2	5	**31**	75
0.035	**60**	132	0.54	5.9	5	**28**	66
0.035	**70**	154	0.60	6.5	4	**25**	60
0.035	**80**	176	0.66	7.1	4	**23**	55
0.035	**90**	198	0.71	7.7	4	**21**	50
0.035	**100**	220	0.77	8.2	3	**20**	47
0.035	**110**	242	0.82	8.8	3	**18**	44
0.035	**120**	264	0.87	9.3	3	**17**	42
0.035	**130**	287	0.91	9.8	3	**16**	39

Crowding

Gonyou et al., 2006

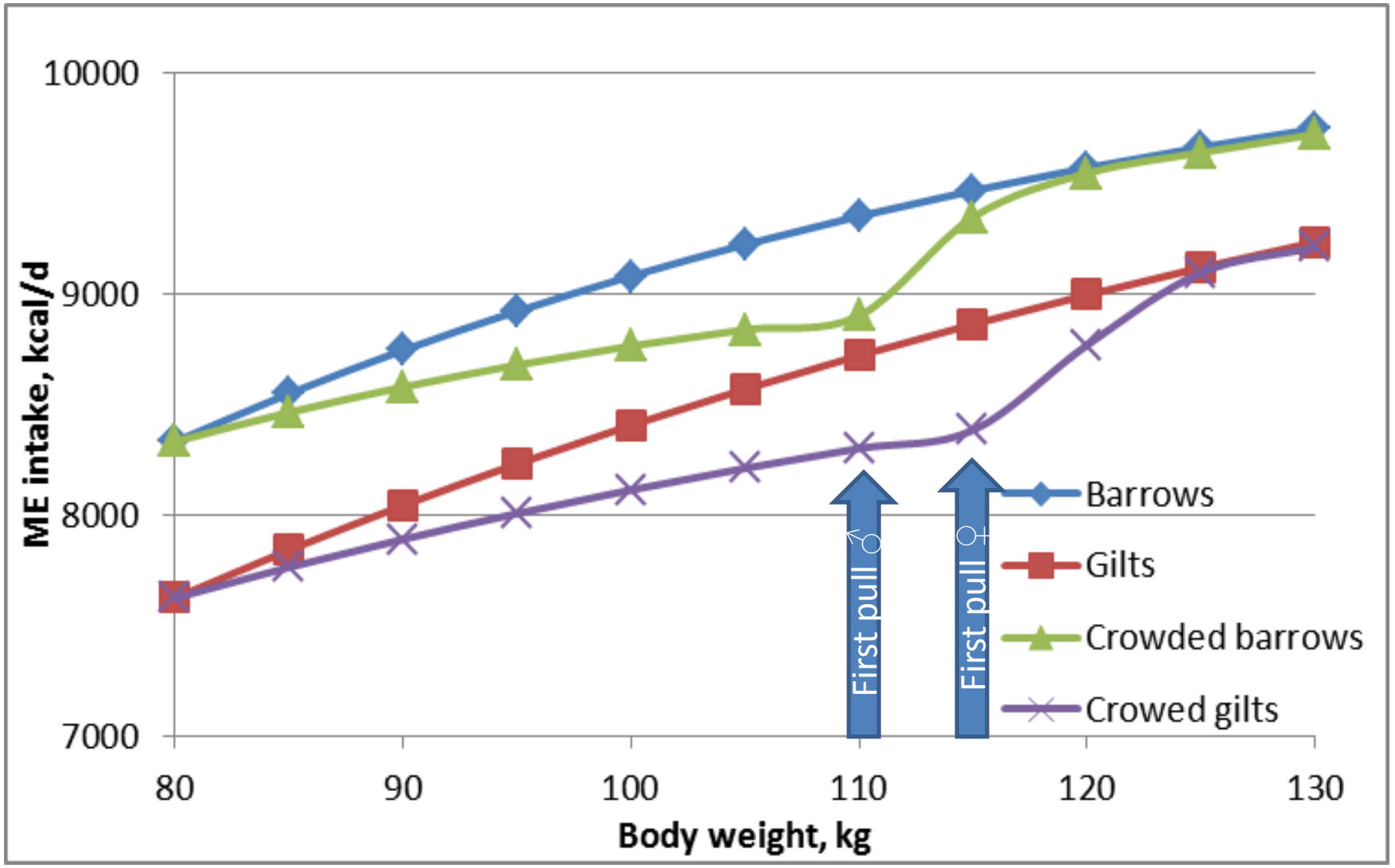
Crowding

1. **Feed intake** ↓0.75% for every 3% below 'k'

   RESTRICTED floor space + limited feeder space = **additive** effects

2. **Weight gain** ↓1% for every 3% below 'k'
3. Feed conversion –unchanged
   - Feeding fibrous diets??
4. Loin depth -unchanged
5. **Backfat ↓**
   - Reflects feed restriction

Crowded Gilts vs. Barrows



Extra Days in the Barn

Carcass, kg	79% dressed	Weight gain, kg	EXTRA DAYS IN THE BARN				
	Live, kg		Assuming kg gain / day				
95	120.0		0.80	0.85	0.90	0.95	1.0
100	126.5	6.5kg	**7.9d**	**7.5d**	**7.0d**	**6.7d**	**6.3d**

crowding

- Gilts grow slower, stay longer than barrows
- ↑ $/pig place = ↓ barn utilization
- ↓turn around = wash, disinfect, **repairs**

Feed Cost to Achieve 6.5kg Heavier Live Market Weights

$/1000 kg feed	Kg feed/kg gained				
	3.25	3.50	3.75	4.00	4.25
200	$ 4.11	$ 4.43	$ 4.75	$ 5.06	$ 5.38
225	$ 4.63	$ 4.98	$ 5.34	$ 5.70	$ 6.05
250	$ 5.14	$ 5.54	$ 5.93	$ 6.33	$ 6.72
275	$ 5.66	$ 6.09	$ 6.53	$ 6.96	$ 7.40
300	$ 6.17	$ 6.65	$ 7.12	$ 7.59	$ 8.07

Worse!!

- **Adjust feeders as pigs are removed from pens**

Packers Want Barrows

Yield Class Number	Estimated Lean Yield Percentage	0 - 67.9 kg	68 - 72.9 kg	73 - 77.9 kg	78 - 82.9 kg	83 - 87.9 kg	88 - 92.9 kg	93 - 97.9 kg	98 - 102.9 kg	103 - 107.9 kg	108 - 111.9 kg	112 - 116.9 kg	117 - 999 kg
1	64.3 - 100	10	10	50	75	95	95	100	100	100	100	100	50
2	63 - 64.29	10	10	50	75	95	103	109	109	107	105	100	50
3	61.8 - 62.99	10	10	50	75	95	108	113	113	111	107	100	50
4	60.7 - 61.79	10	10	50	75	95	110	116	116	113	109	100	50
5	59.6 - 60.69	10	10	50	75	95	110	116	116	113	109	100	50
6	58.6 - 59.59	10	10	50	75	95	109	114	114	111	108	95	50
7	57.7 - 58.59	10	10	50	75	95	103	109	109	107	105	90	50
8	56.9 - 57.69	10	10	50	60	85	95	104	104	95	90	80	50

Backfat depth accounts for **over 90% of the variation** in the lean yield percentage calculation. https://www.westernhogexchange.com/gradinggrids

Focus on Backfat

	Scenario 1		Scenario 2		Scenario 3	
Live, kg	121.8	128.2	121.8	128.2	121.8	128.2
Carcass, kg	95	100	95	100	95	100
Dress, %	0.78	0.78	0.78	0.78	0.78	0.78
Lean, mm	**60**	**60**	**62**	**62**	**62**	**62**
Fat, mm	**22**	**20**	**20**	**18**	**18**	**16**
Yield, %	59.0	59.9	60.0	60.9	60.9	61.8
Class	**6**	**5**	**5**	**4**	**4**	**3**
Index	114	116	116	116	116	113
100 index $/kg	1.5	1.5	1.5	1.5	1.5	1.5
$/hog	$162.45	$174.00	$165.30	$174.0	$165.30	$169.50
Difference	**$11.55**		**$8.70**		**$4.20**	

vs. $1 feed/day x 6.5d
+ housing $0.15 x 6.5d
= **$7.50**

Payback
??

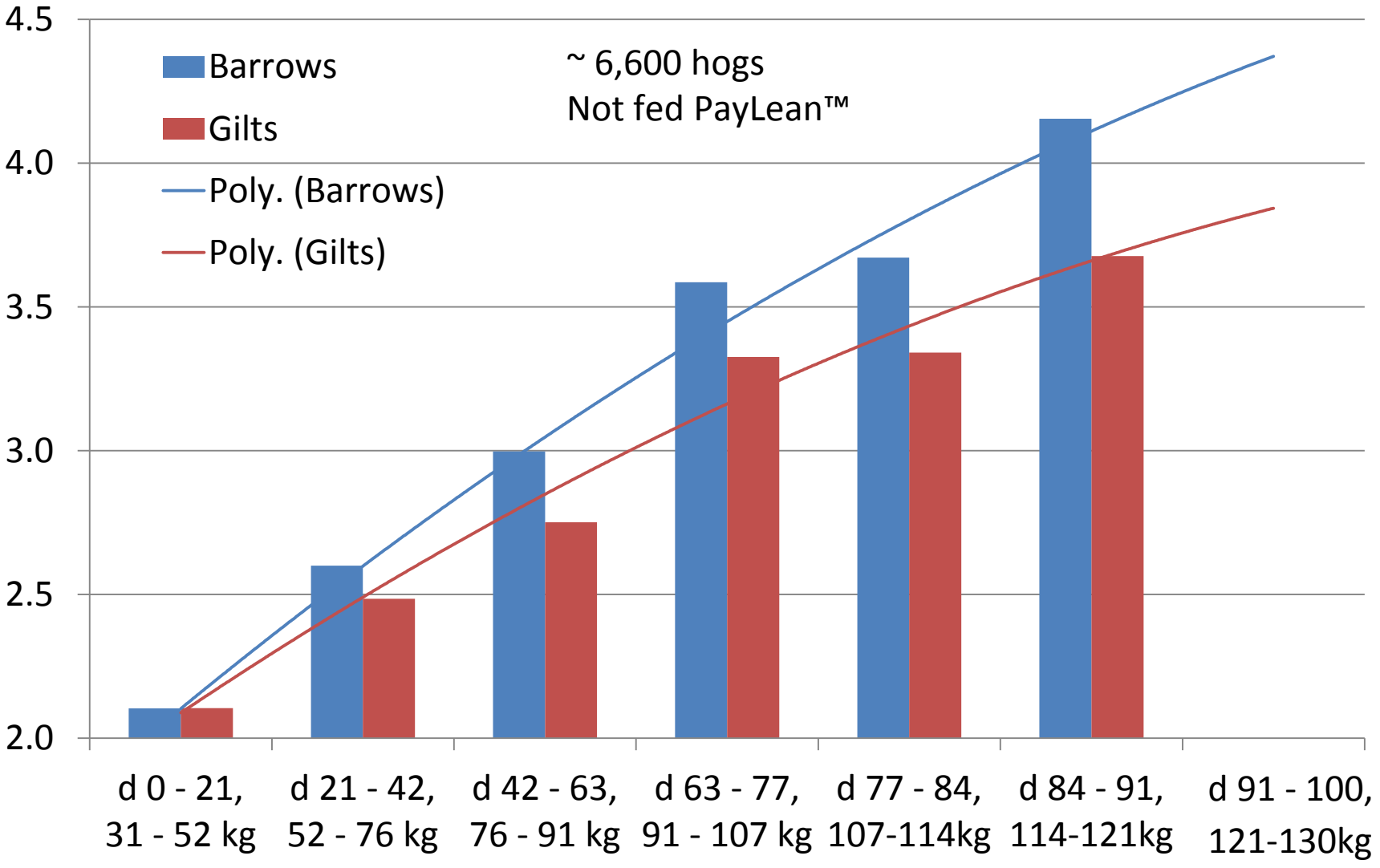
Topping Out Pigs

- **Model** => changing pig space allotment on ROE
  - Reduce breeding herd size was the least preferred
  - Reduce pig flow by selling weaners was not good
  - Pricing grid had **a huge impact** on marketing light pigs

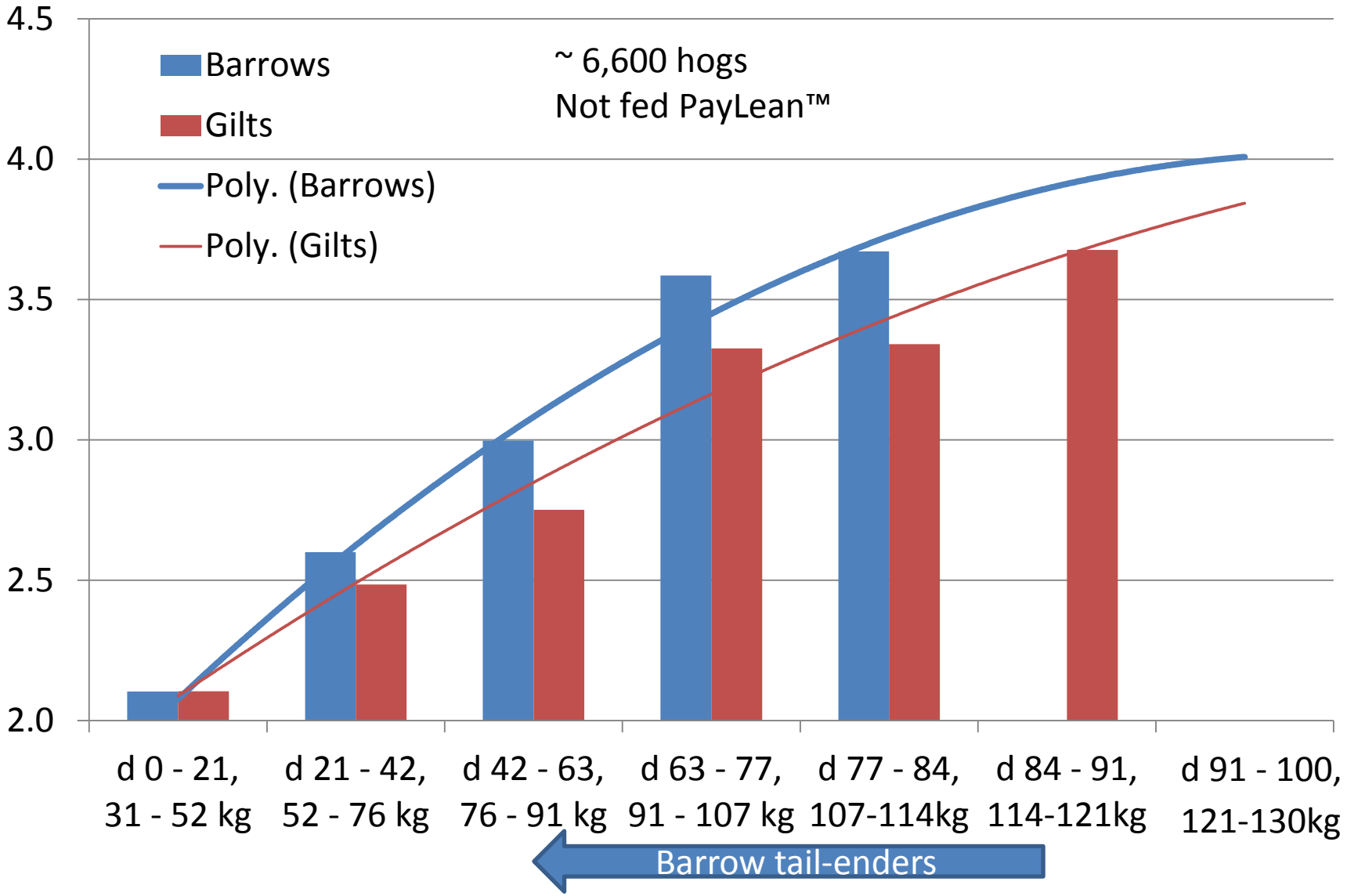
Scenarios assuming 2600 sows	As pigs reach 262 lbs mkt wt	Market 1 pig at 'k'	Market 2 pig at 'k'	Market 4 pig at 'k'	Sell weaners to reduce 'k'	Reduce sow inventory to meet 'k'	Construct finishing space to meet 'k'
Return on equity	15%	12%	11%	7%	9%	1%	13%
Profit margin	7%	5.5%	5%	3.5%	4.3%	0.6%	7%
Finishing barns/y	17	17	17	17	17	17	20

Buhr, University of Minnesota

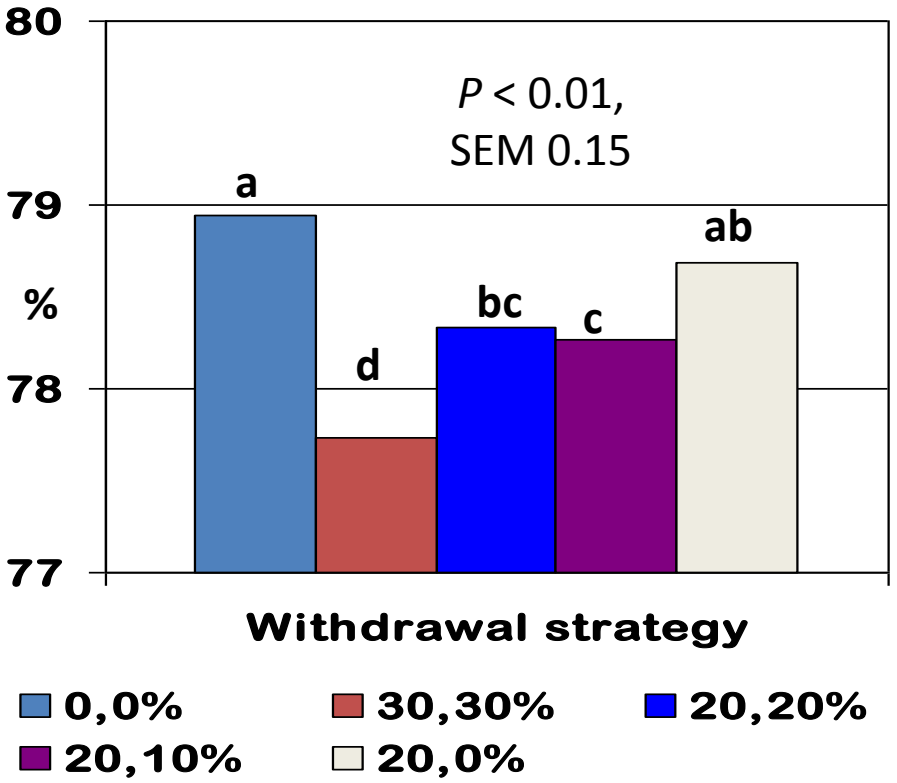
Feed Conversion at Heavier Weights



FC Without Barrow Tail-Enders



DDGS Withdrawal on Dressing %



- Reduce or withdraw fibrous feedstuffs from finisher diet

Fibrous Feedstuffs on Dressing %

Live weight constant:

Live pig, kg	Dressing	Carcass, kg	$	1.70	110 index /kg pork
125	79%	98.75	$	167.88	difference
125	78.5%	98.13	$	166.81	$ -1.06
125	77%	96.25	$	163.63	$ -3.19

Carcass weight constant:

Live pig, kg	Dressing	Carcass, kg	Extra days in barn	4 kg/feed/day $ 0.25	/kg feed
125	79%	98.75			difference
126	78.5%	98.75	1.5		-$ 1.50
128	77%	98.75	4		-$ 4.00

•Add pig space occupied for 4d longer x 0.15 = **$0.60**

Gut Feed Content

M. Schoonderwoerd©

Feed Withdrawal

- Fasting + lairage 16 – 18h
- Lairage at abattoir
- Reduce contamination
- Hunger-related drinking

Cost $ of undigested feed in gut at slaughter					
	$/tonne of finisher				
	200	**225**	**250**	**275**	**300**
3 kg	**0.60**	0.68	0.75	0.83	0.90
6 kg	1.20	1.35	1.50	1.65	1.80
9 kg	1.80	2.03	2.25	2.48	2.70
12 kg	2.40	2.70	3.00	3.30	**3.60**

Fasting on farm, short lairage

vs.

No fasting on farm, long lairage

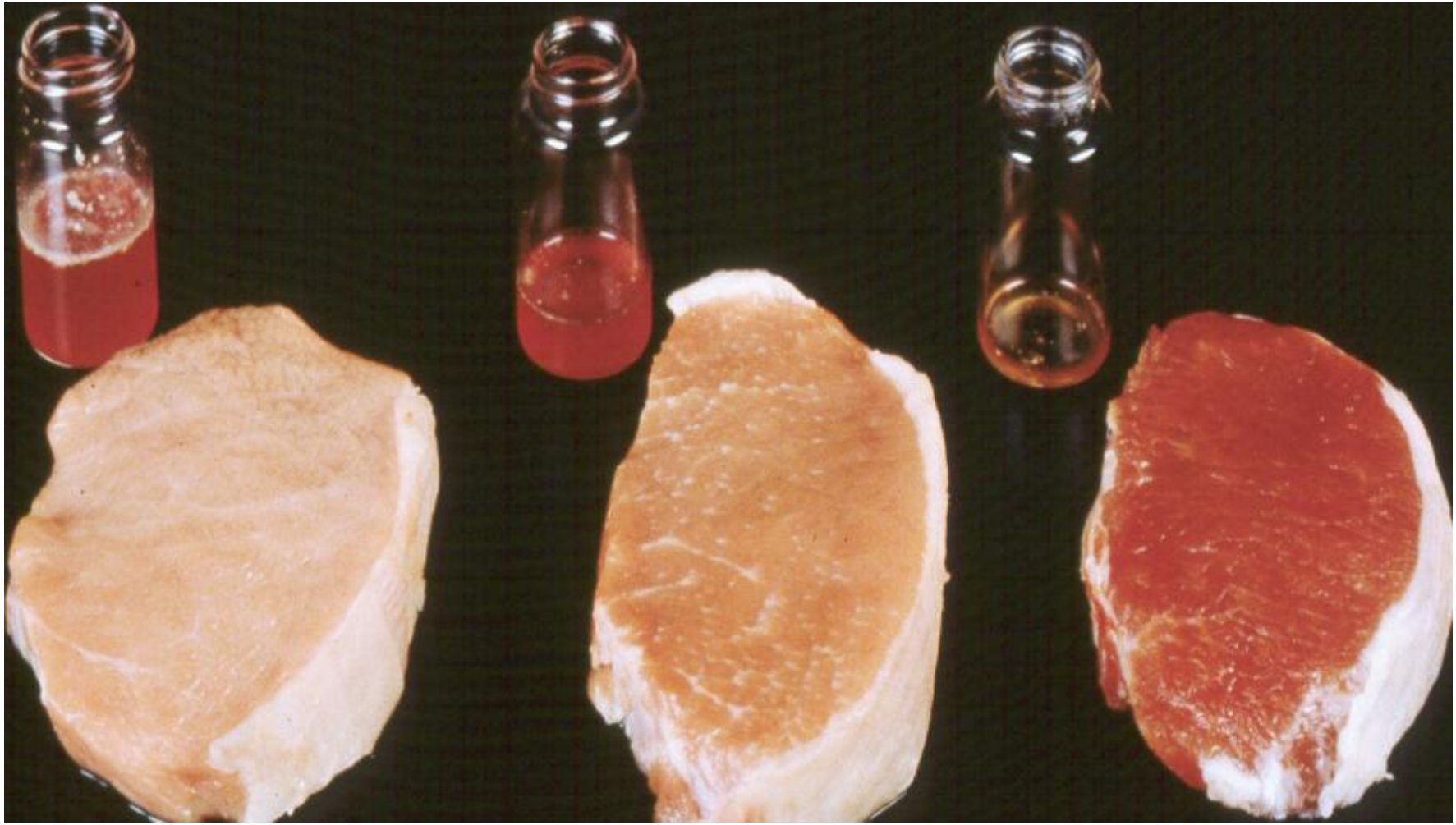
- ***You are in control*** !
- Keep hogs from the same pen together in loadout and truck
- Mixing and fighting minimized until hogs get to the abattoir

- Hogs have a long haul …
- You have no way of fasting hogs on farm
- Death and injury increase with extended lairage at abattoir
- ***You have NO control*** when hogs will be slaughtered.
  - Could be more than 24h.
  - Carcass traits will be affected

Know Your Packer's Hog Receiving Policy

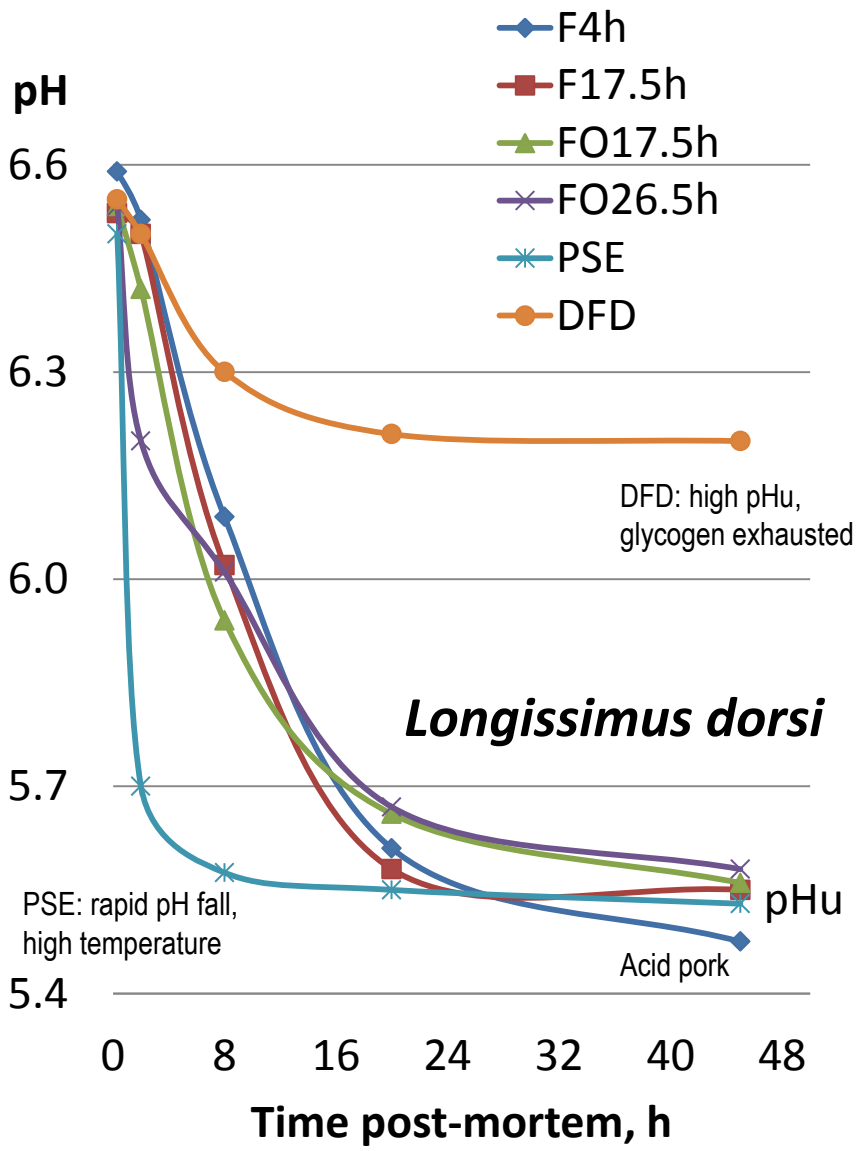
- *Delivered by what time to slaughter that day ???*
- *What's their minimum required lairage time ???*
- *Federal Regulations required hogs to be fed >24h*
- *Fasting a contract obligation*

Think Pork Exports !!



http://labs.ansci.illinois.edu

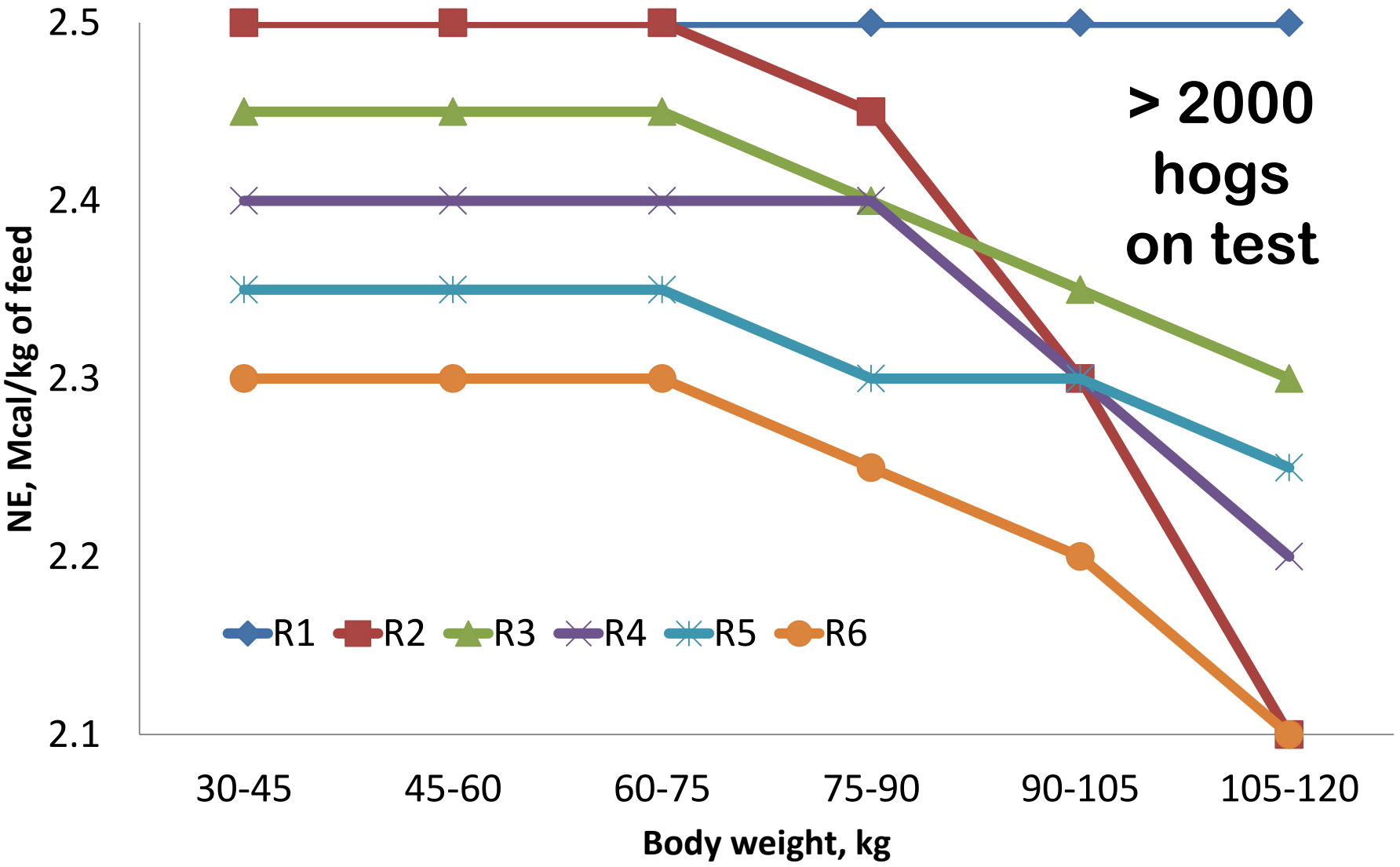
Fasting on Pork Quality



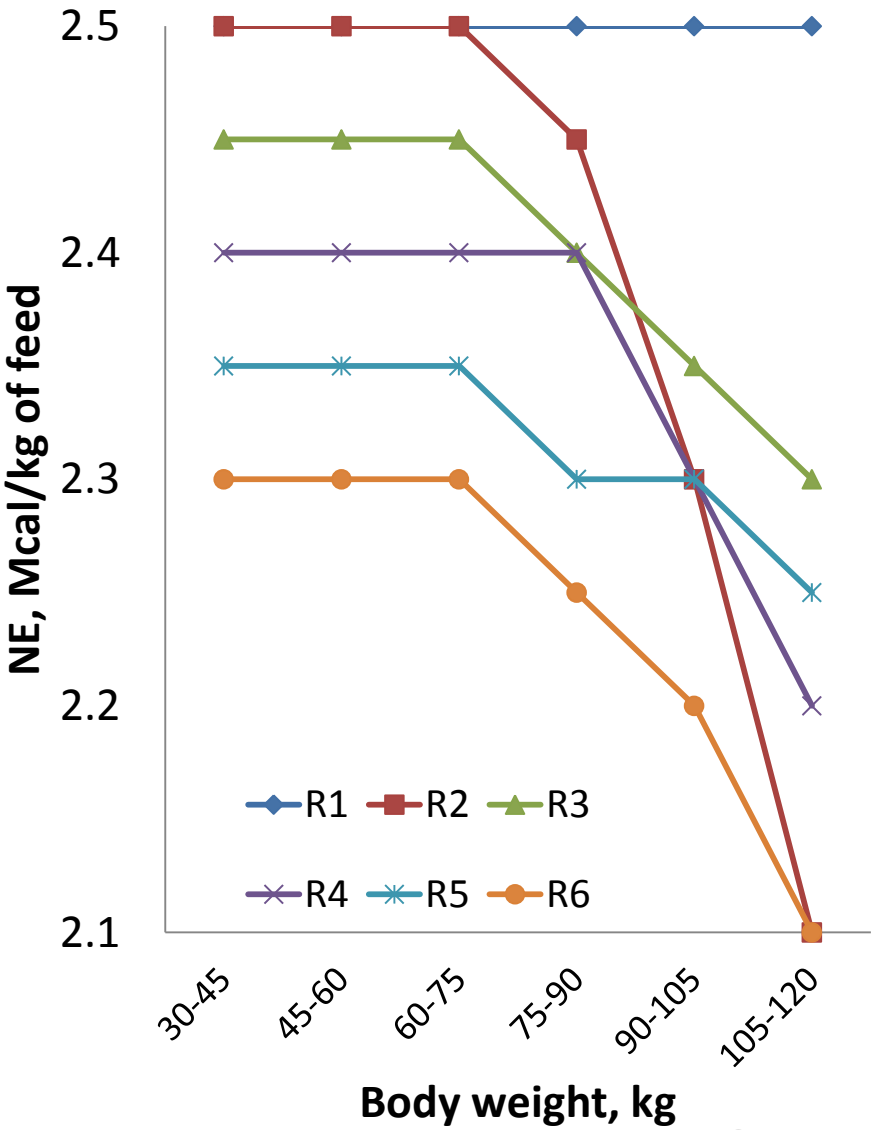
- **Fasting of hogs …**
  - ✓**reduced drip loss (♂ lower than ♀)**
  - ✓**darker colour (♂ lighter than ♀)**
  - ✓**improved tenderness (♂ juiciness than ♀)**
- **Liver glycogen depleted by 18h**
- **Fighting accelerates glycogen depletion**
- **Carcass wt reduced >24h**

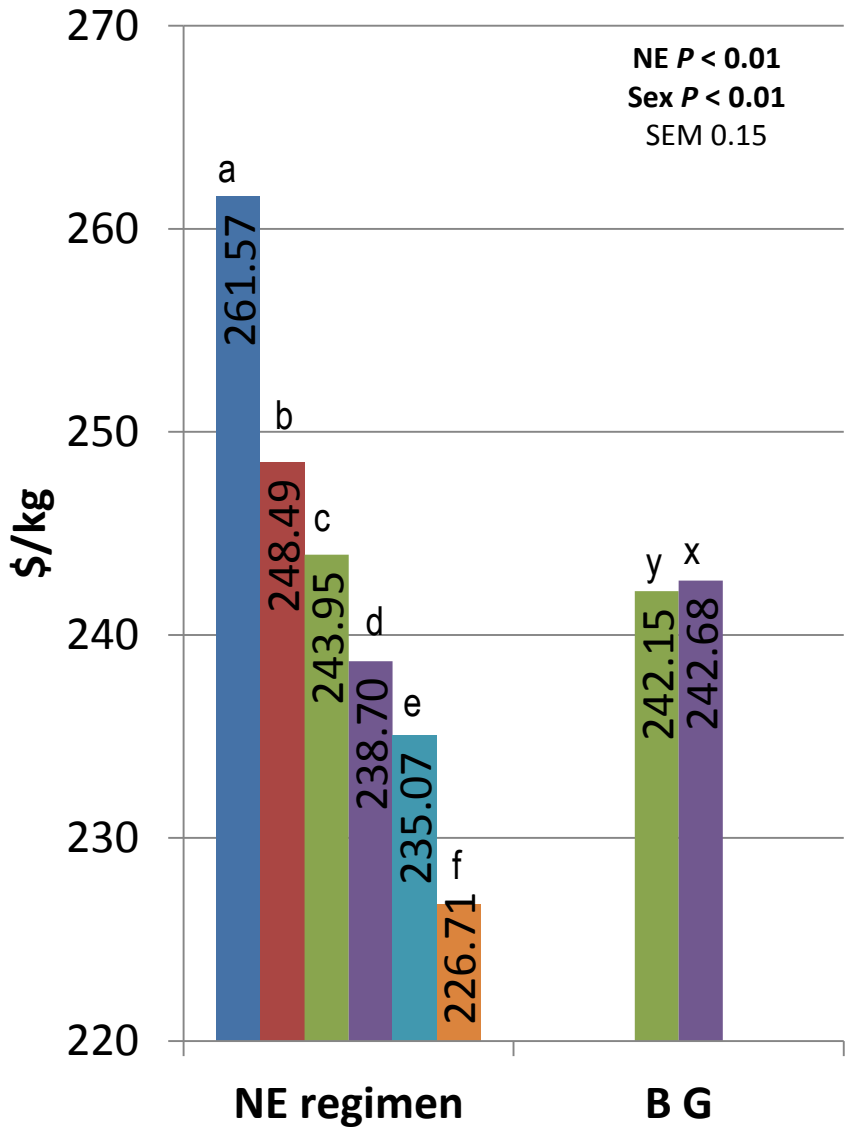
Sterten et al. 2010. Meat Science 84:93-100
Sterten et al. 2009. Meat Science 83:351-357

Dietary Energy

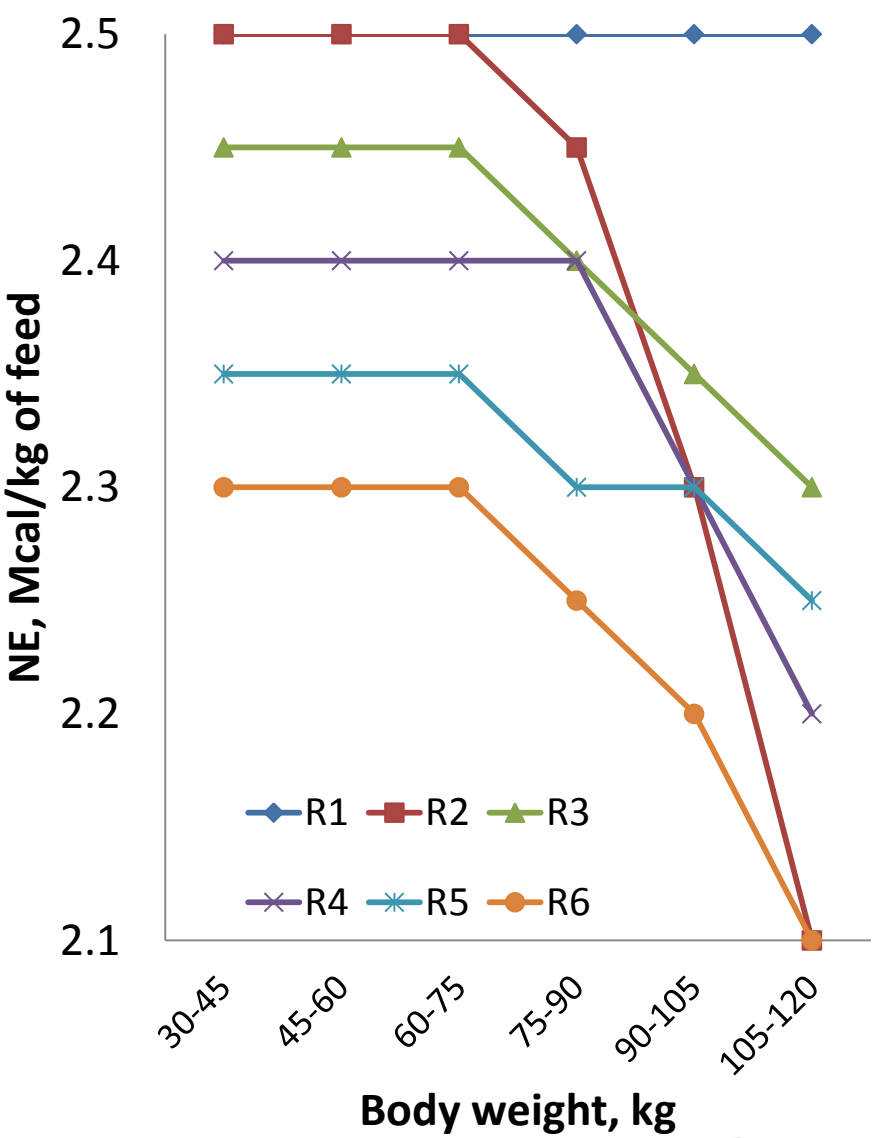


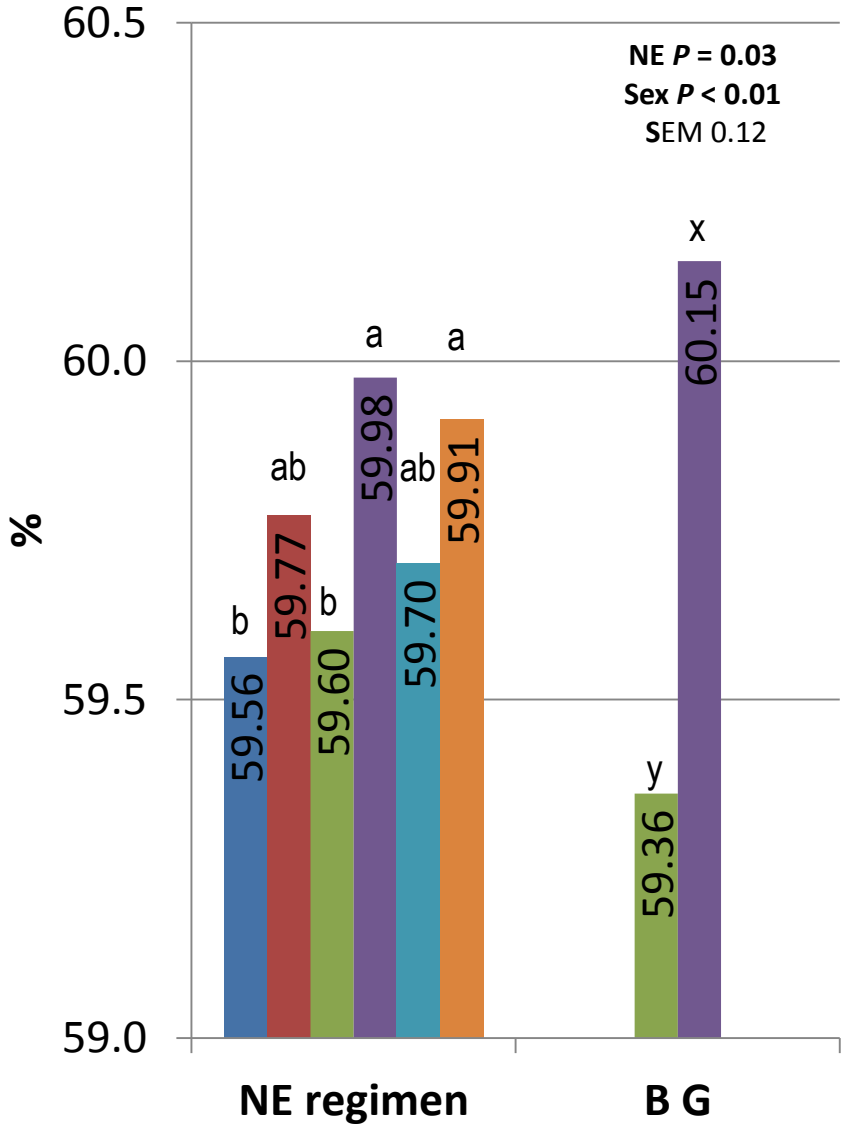
Average Diet Cost

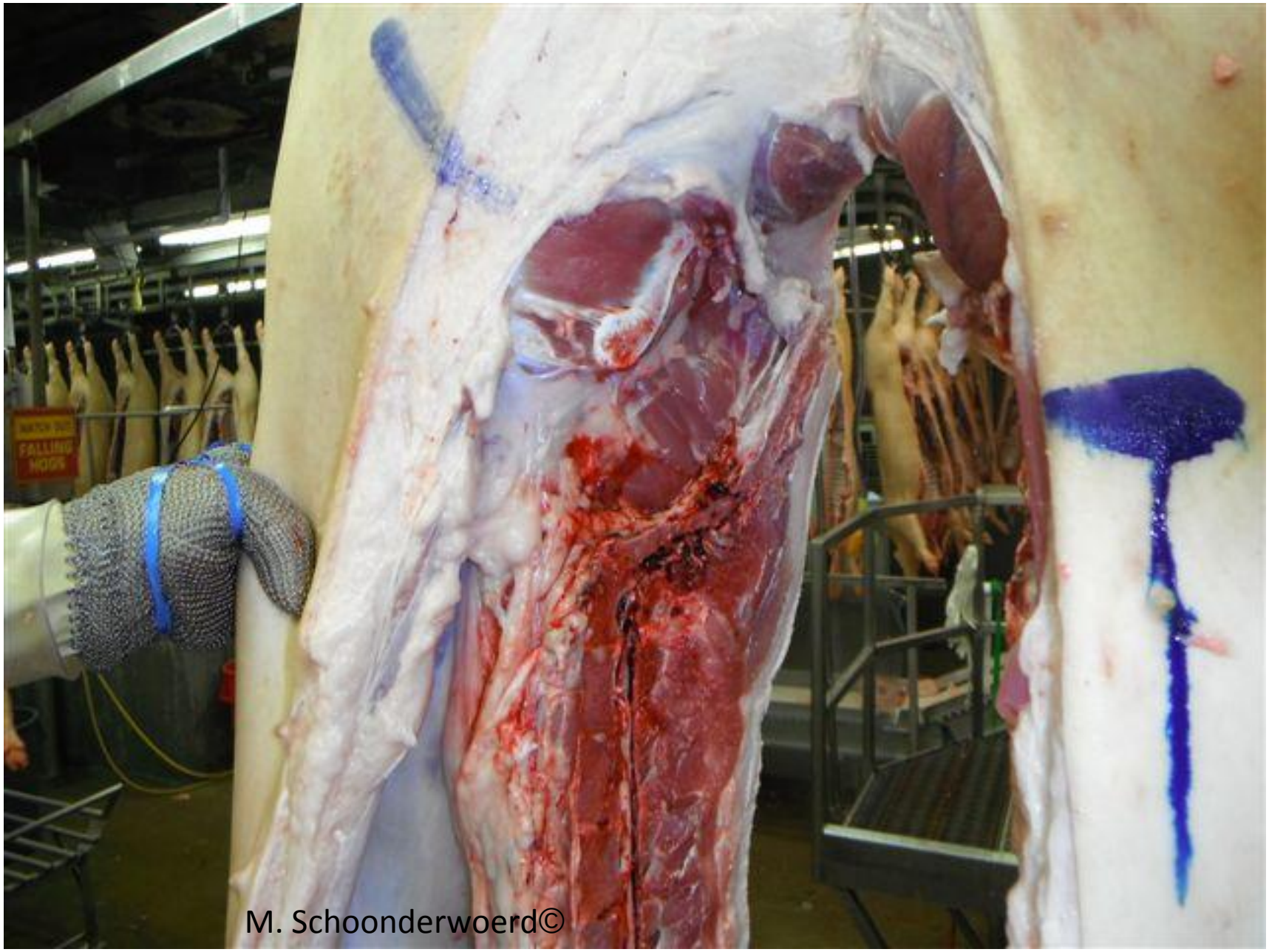




Estimated Pork Carcass Yield







Pathological Fractures

What to do ???

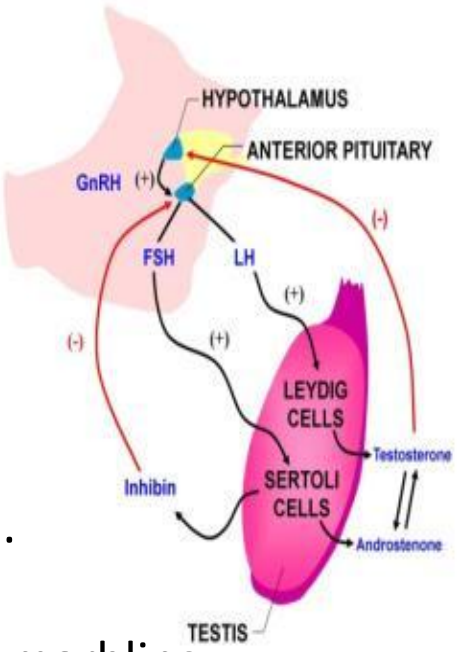
1. Monitor condemnations, trimmings
2. Track if the incidence is increasing, constant, decreasing
3. Communicate with packer until the incidence diminishes
4. Be gently moving pigs, loading hogs. **Avoid prod use !!**
5. Review vit D, phosphate and limestone inclusions => Nutritionist
6. Discuss with Veterinarian. Other causes may compound occurrence
7. Assurance of confidentiality

Feeding Ractopamine

- Allowed vs. trade barrier
- Dose 5 or 10 mg/kg ??
- Feeding it… how long ??
- Barrows, gilts, mixed
- Do crowded hogs benefit?
- Feeding in relation to 1st pull
- Not feeding it to tail-enders
- **Most important…**
  - **Where are you without feeding it?**
  - **What are you trying to achieve??**

Anti-GnRH Immunization

- Would the pork industry benefit from immunocastrating boars (2001)?
- 4th year UofA students did a survey of packers and industry
- **Conclusions:**
  - Consumers want pork with greater marbling. Packers current carcass grids reflect this fact.
  - Dressing % lower due to sexual glands.
  - Despite ↑feed efficiency, the cost of the vaccine, on-farm procedures, training and audits are unknown.
  - Consumers focus on product safety, quality and cost. Surgical castration remains acceptable to most of them.
  - Given the cost of implementation and that consumers are NOT willing to pay for leaner pork but want greater marbling, **implementation of this technology is unlikely at this time. THERE IS DISCONNECT WITH WHAT PACKER WANT NOW.**
  - Producers may eventually be forced to adopt this technology due to welfare. Thus, understand it, think about future implementation, remain open-minded.



Shipping Heavier Hogs

- **Short-term:**
  1. Implement proper fasting prior to slaughter
  2. Top 1st pull of hogs at lighter wt column within core
  3. Adjust feeders as pigs are removed from pens
- **Mid-term:**
  4. Compare scenarios: extra feed cost + extra days in barn vs. extra revenue => ***it should payback!!***
  5. Light grid choices or ship to local abattoir often
  6. Fibrous feedstuffs (↓ dressing vs. ↑ days in barn)
  7. Review energy density of diets; Paylean protocol
- **Long-tem:**
  8. Build on-farm lariage pens with drinkers
  9. Build more on-site finishing pens
  10. Minimize 'crowding days' to 1st pull to slaughter