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Feeding & Management of rearing gilts

AHDB 2017

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Longevity and Economy

Cost of gilt	Litters (n)	Cost per Litter	Cost per piglet
£250	2	£125	£10
	4	£62.5	£5
	6	£31.25	£2,5

Background Research

Kummer et al. 2006 (Brasil)

- Insemination of gilts with a growth rate of more than 700g/day is possible between 185-209days (min weight 127 kg)
- No negative effects on farrowing and culling rate and total born over three parities compared with gilts mated > 210 days

W.S. Amaral Filha et al. 2010

- No advantage in FR and with GR > 770 and BF> 17 mm
- (600-700)/10-15mm - Lower born alive -0.5
- (701-770)/16-17mm - The Ideal gilt
- 771- 870)/18-23mm - More stillborn, lower birth weights and higher birth weight variance

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Background Research

Kummer et al. 2006

- Gilts with a high growth rate be mated earlier without any negative effects on reproduction, up to third parity

Crenshaw 2003 and Ytrehus et al. 2004

- Confirmed that more rapid growth in rearing did not impair skeletal integrity compared with slower growing pigs
- Older research is saying something else

Williams et al. 2005

- Minimum weight at first farrowing should be 180kg to minimize protein loss in lactation
- To achieve this gilts should weigh minimum 135kg at insemination

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Background Research

Foxcroft et al. 2005

- For modern gilts with high lean growth potential target weight at insemination is more important than back fat
- Once too heavy always too heavy (Personal experience)

Wettere, 2011

- Moderate feed restriction pre-puberty impairs follicle development

Replacement gilts

Life time performance in sows : Weight at first weaning

		<150 kg	170 - 190 kg
First ins.	Age	274	274
	BW, kg	141	150
Parity 1	BW farrowing, kg	193	213
	Live born	11.1	11.1
	BW weaning, kg	140	178
Parity 2	Live born	9.9	11.6
Parity 5	Live born	10.9	13.2
Longevity		3.8	5.5

Source : Hoving et al., 201

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Defining the IDEAL gilt

- Strong bone and ligament structure
- Feet and leg soundness
- Highly developed intestinal track for maximum intake during lactation
- If ESF systems are used make sure the gilt is trained adequately.
- Perfect udder quality with a minimum of 14 teats
- Easy to handle

The **‘Rearing Gilt’** is different to the finisher gilt

Why is it different?

	Rearing gilt	Finisher Gilt
Longevity (Bone development)	√	×
Reproductive performance	√	×
Future milk production	√	×
Ave Daily Gain	×	√
FCR	×	√
Meat quality	×	√
Cost per kg/gain	×	√

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The **‘Rearing Gilt’** is different to the finisher gilt

Minerals and Vitamins - important for bone development

		Rearing Gilt	Finisher Gilt
Calcium	%	0.7	0.5
Digestible Phosphor	%	0.25	0.18
Biotin	ppb	400	50
Manganese	mg	60	40
Magnesium	mg	2500	1500
Copper	mg	25	15
Zink	mg	125	50
Selenium	mg	0.4	0.3
Vit D	IU	2000	1000

- Recommendations from 80-130Kg

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Bones and Hooves (Claws)

Management

- Rearing on plastic slats (not >25 kg)
- Wet, slippery floors
- Growth rates vs. Health
- 1,0 m^2 per gilts for good development of bones and muscles

Nutrition

- Minerals and vitamins
  - Prevent from over and under supply
  - Keep - interactions in mind
  - Organics
  - Analyse to verify
- Overload of anions compared to cations (Acidosis)
  - Low dEB, high temp

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How to reach the IDEAL gilt

Correct rearing strategy is key

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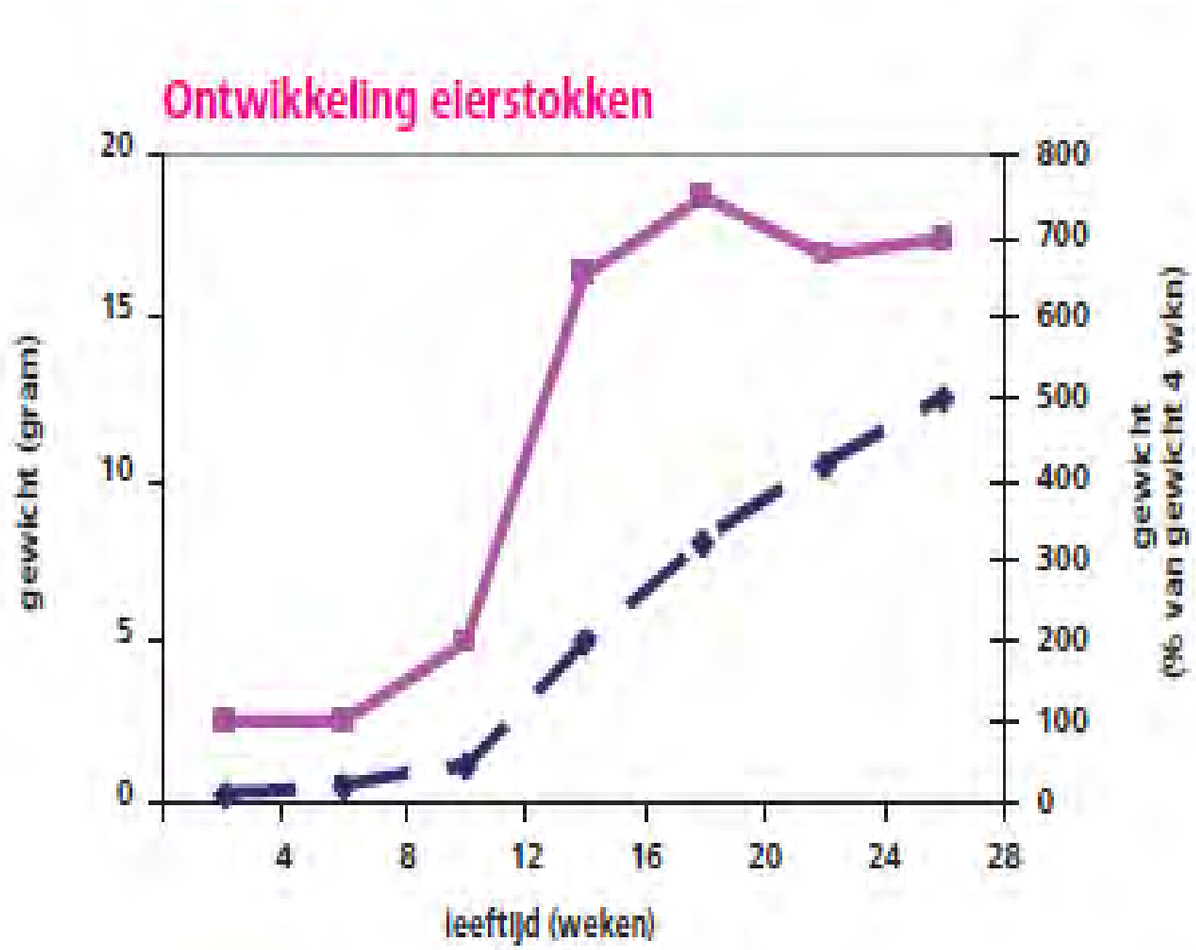
Development of ovaries

- Size of ovaries are very small at birth
- 14 days after birth all oocytes are present!
- The development phase defines the rest of the rearing period
- Ovary development defines the future productivity of the sow
- Develop in groups further



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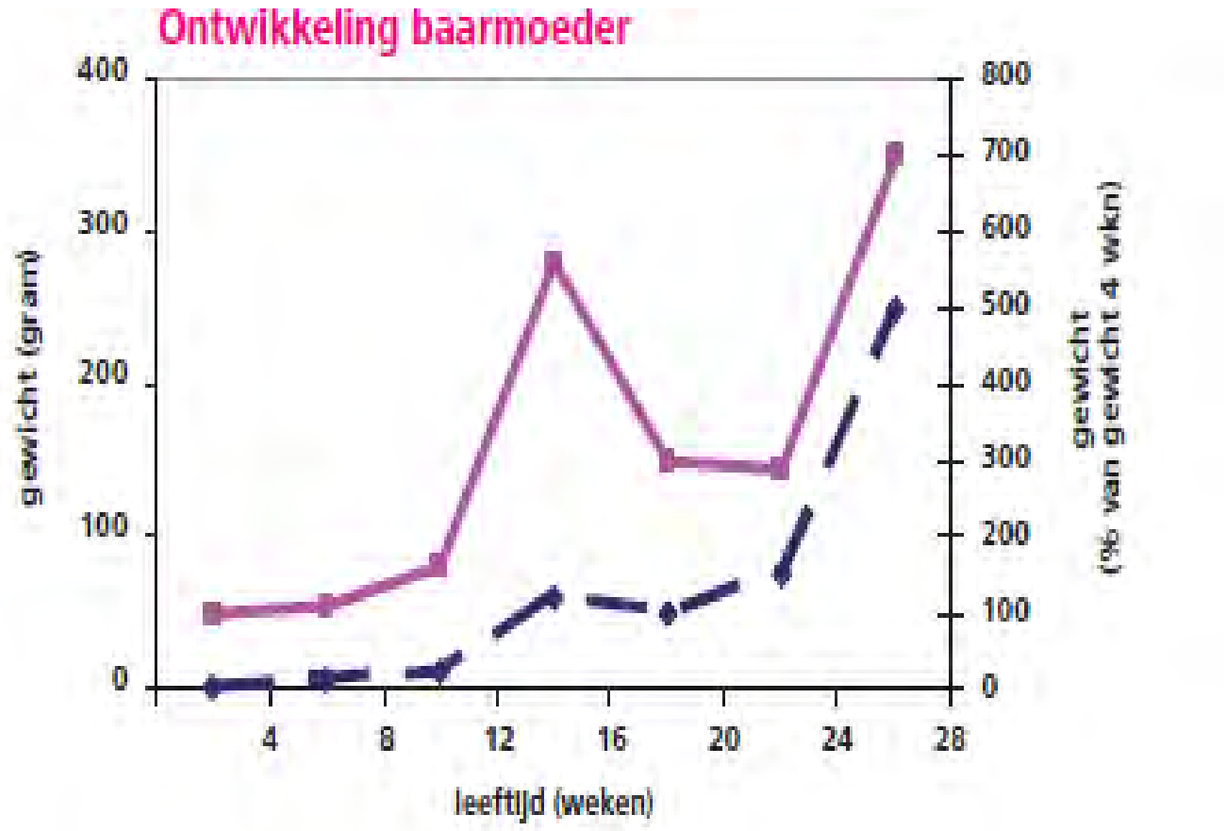
Development of the uterus

- Total weight at birth a few grams
- Directly after birth the uterus glands start to develop
- Tissues develop until the age of 4-6 months
- Between 12 and 16 weeks of age uterus growth accelerates



The rearing process - <u>3 phases</u>

Phase 1

Birth to 25 kg Body Weight

- Factors to consider

  - ✓Uniformity of piglets
  - ✓Floor type
  - ✓Space allowance
  - ✓Feed quality
  - ✓Number of teats
  - ✓Intestinal and general health

Phase 1

Preventing the “weaning growth dip”

- ➢Ensure maximum creep feed intake
- ➢Creep must be highly palatable and digestible
- ➢Feed creep for 3 days, also in the weaning accommodation
- ➢Reduce stress factors
- ➢Group smaller piglets together
- ➢Motivate piglets to eat

- ✓Increase feeding times per day
- ✓Provide additional feeders
- ✓Mix small amount of feed with water

Phase 2

25kg Body Weight to Final Selection (6/7 months of age)

- Gilt rearing recommendations are designed to
  - Meet nutrient demands for adequate protein growth
  - Maximize the productive life of the gilt
  - Ensure proper bone mineralization
- The rearing gilt is not the same as a finisher gilt

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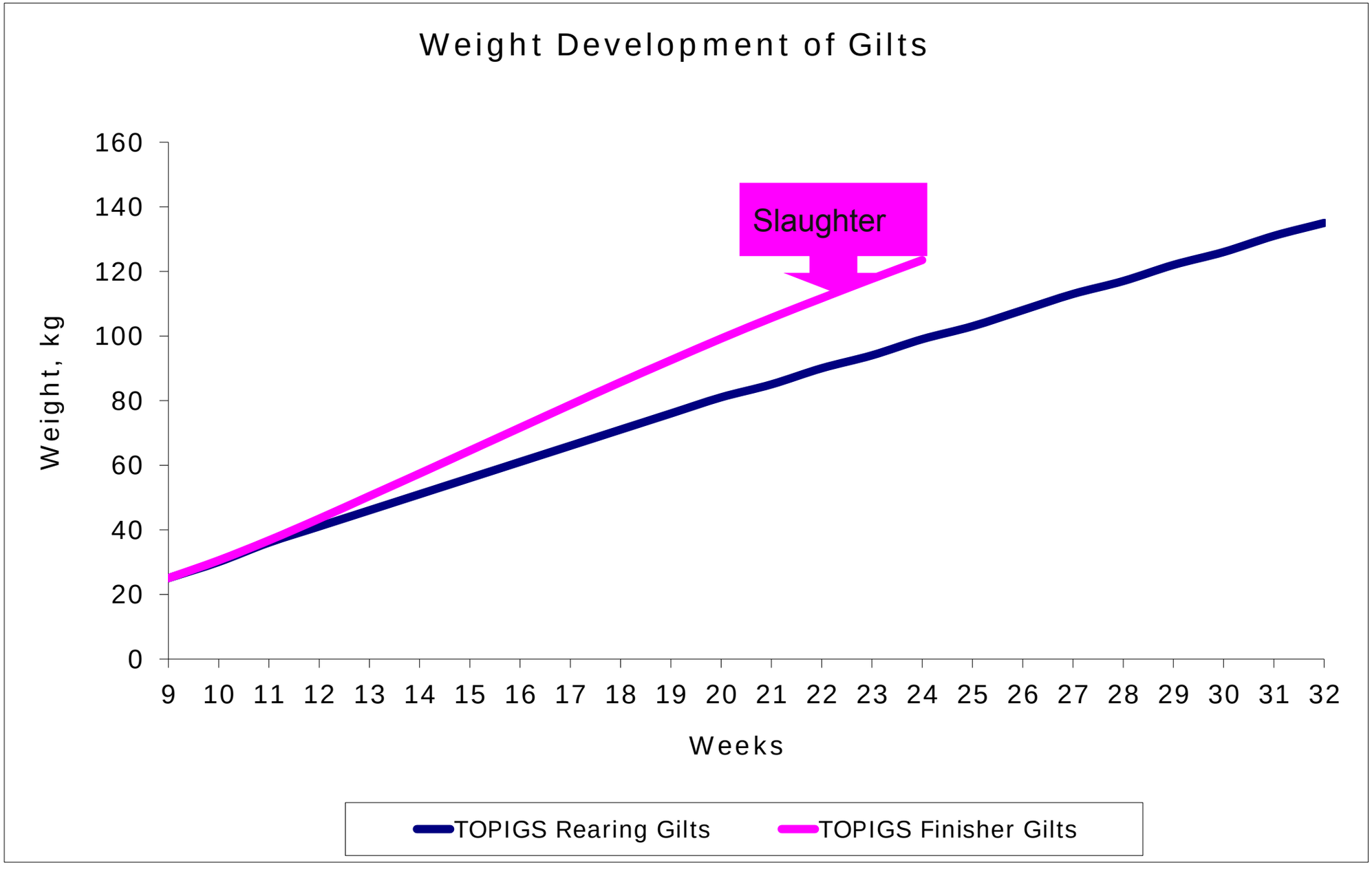
Phase 2

Growth curve of TOPIGS Rearing Gilt vs. TOPIGS Finisher Gilt



Feeding gilts

Topigs Norsvin advice 10 weeks - 30 weeks

- Gilt rearing feed
  - Minimum 3 Phases from 10 weeks to Insemination
  - Feed only gilt rearing and developer diets
  - No finisher feed

- Monitor weight development and adapt diets/feed curves accordingly

- Inseminate gilts based on weight and age

Feeding gilts

Table 02. Recommended feed and water intake for the TN70 during rearing

Weeks	Day	Feed Intake (kg)	Water Intake (L)
9	63	1.1	3.2
10	70	1.3	3.9
11	77	1.5	4.5
12	84	1.6	5.2
13	91	1.8	5.8
14	98	2.0	6.3
15	105	2.1	6.9
16	112	2.2	7.4
17	119	2.3	7.8
18	126	2.4	8.3
19	133	2.5	8.7
20	140	2.6	9.1
21	147	2.6	9.5
22	154	2.7	9.8
23	161	2.7	10.1
24	168	2.7	10.4
25	175	2.8	10.6
26	182	2.8	10.8
27	189	2.8	11.0
28	196	2.8	11.2
29	203	2.8	11.3
30	210	2.8	11.4
31	217	2.9	11.5
32	224	2.9	11.5
33	231	2.9	11.6
34	238	2.9	11.6
35	245	2.9	11.7
36	252	2.9	11.7

Topigs Norsvin
PROGRESS IN PIGS

TN70 - rearing gilts - weight curve

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Phase 2 - Feeding

- *Ad libitum* access to feed until 100 days of age
- From 100 days of age only controlled curve feeding
- Only use special rearing diets
  - ✓Lower energy diets
  - ✓Use of different fibre sources for rest and satisfaction!
  - ✓Higher levels of essential minerals and vitamins
- Control weight development in relation to age and daily ration

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Phase 2 - Housing and management

- Always keep approved gilts separate
- Group gilts uniformly by age and weight
- Minimum floor space of 1 m^2 per gilt
- Concrete floor is preferable
- No more than 8 - 10 gilts per pen
- Provide sufficient feeding space (35 cm/gilt)
- Free access to clean water (1 drinker for 10 gilts)
- Ensure suitable temperature for age group
- Light - 40 lux light intensity, 12 hours light

Monitor, Monitor, Monitor

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Gilt Targets TN70

Insemination Targets

- Achieve a minimum body weight of 150-160 kg
- Target P2, 12 - 14 mm
- Gilts should be mated on their second or third estrus (240 - 250 days)
- Lifetime growth of 600 - 660 grams/day

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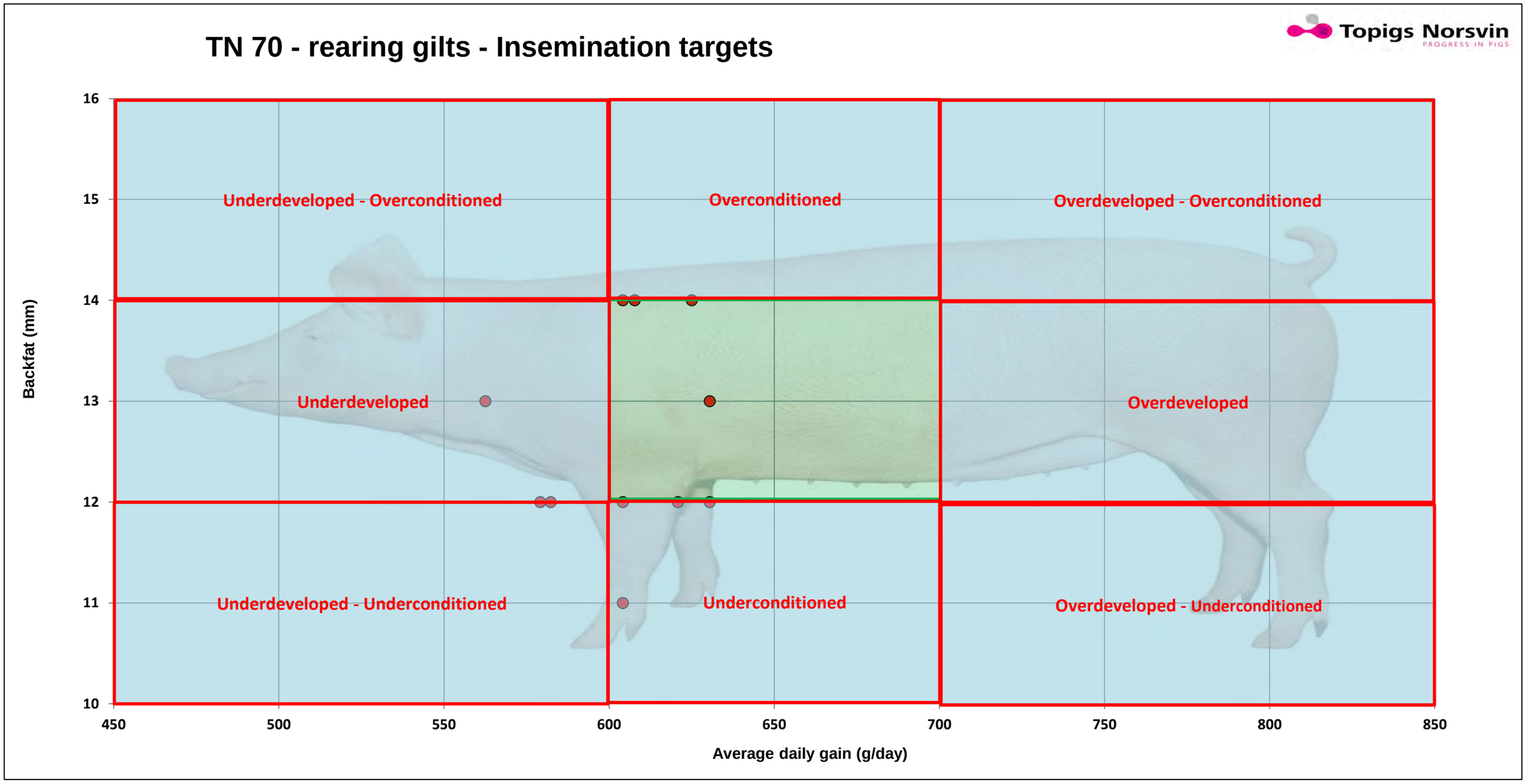
How are the results presented?



- Overdeveloped - Too heavy
- Over conditioned - Too fat

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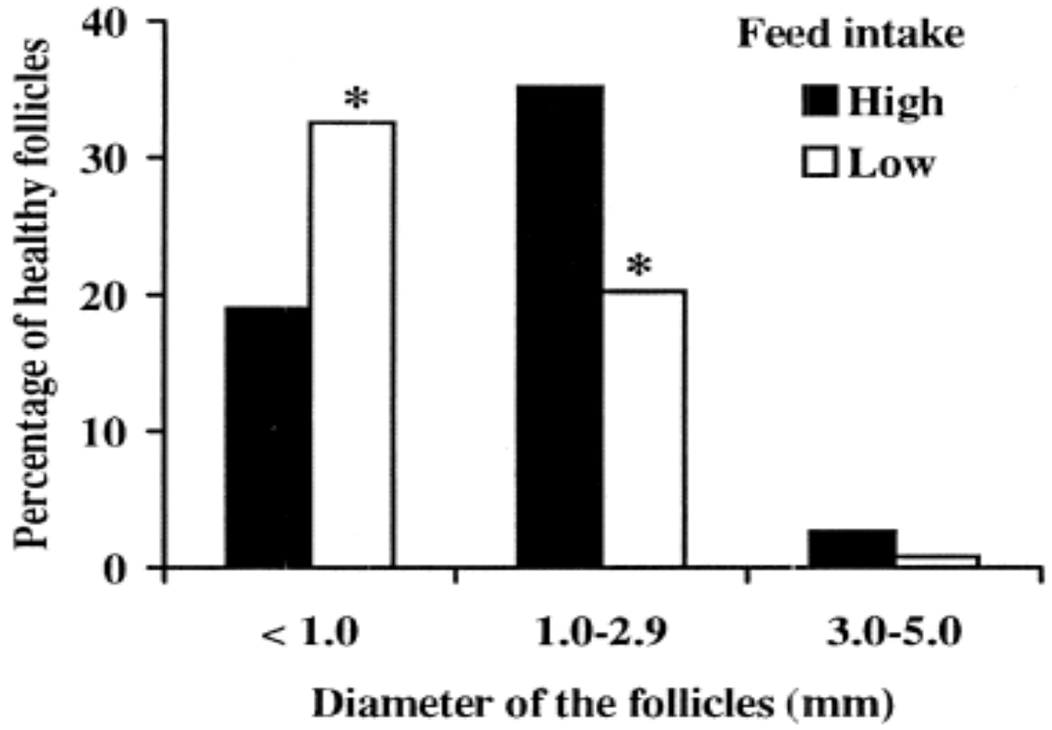
Phase 3 - Flush feeding

- Feed gilts *ad libitum* 10 - 14 days before breeding
- Flushing the gilt will increase the ovulation rate
- Gilts must receive 3.0 to 3.2 kg/d of a special flushing diet containing:

✓9.6 MJ NE/kg
✓0.70 - 0.65 % digestible lysine
✓400 g/kg starch and sugars
✓0.75 - 0.85 % Ca
✓0.26 - 0.29 % Digestible P



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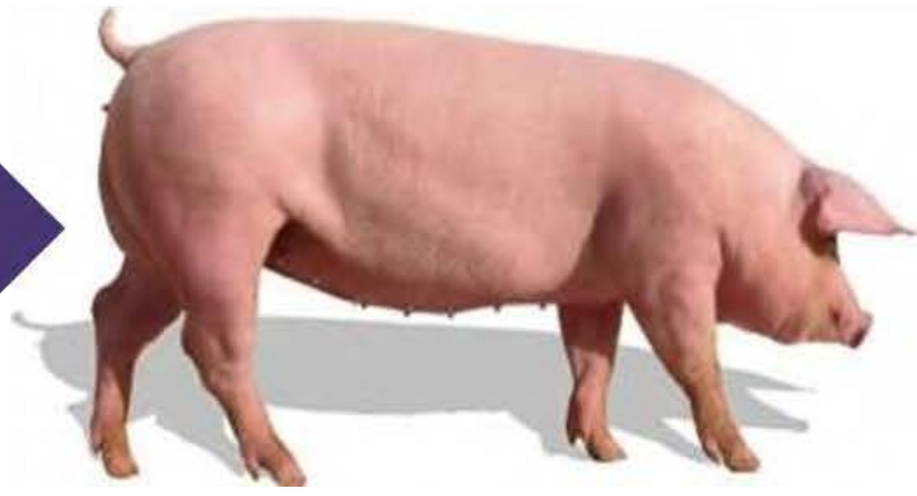
Concluding remarks

- Proper gilt rearing gives proper results

- Monitoring is most important
  - Invest in proper data storage

- Tools are available at Topigs Norsvin to monitor weight development
  - TN70 (ready in excel and manual)



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