

Basic Pig Terms

- ADG – average daily gain
- AI – artificial insemination
- All-in/all-out – a system where one area (pen, room, barn) is cleaned out entirely before refilling with animals
- Barrow – castrated male pig
- Boar – intact male
- Cross foster – moving pigs from one nursing sow to another to even up litter size
- Cull – to remove an animal from the herd
- Depop/Repop – depopulate/repopulate - to remove all animals for disease control purposes and restock when barn is cleaned and disinfected
- Down time – time during which there are no animals in the barn for cleaning – can also be the number of hours since a person last had contact with pigs
- Farrow - to give birth to piglets
- Farrowing rate – number of sows that farrowed divided by the number of sows bred
- Feed conversion rate – the amount of feed used divided by weight gained
- Finisher – stage after grower – 70 kg to market
- Gilt – female pig that has not farrowed
- Grower – stage after weaner – 25 – 70 kg
- Hand breeding – herdsman in pen with one sow and boar until intromission
- MMA – Mastitis, metritis and agalactia – common problem after giving birth
- Nonproductive sow days – days that a sow is not pregnant or lactating
- NIP – not in pig (not pregnant)
- Nursery pig – pigs from weaning to 25 kg
- Parity – the number of litters a sow has had
- Processing – teeth, tails, iron administration and castration

- Ridgling – cryptochid, a male with one or both testes undescended
- Savage – when a sow kills her newborn piglets
- Scour – diarrhea
- Sow – a female pig that has given birth
- SPF – specific pathogen free
- Weaner – or nursery pig after weaning up to 25 kg

Session 2 – Breeding Herd

Back Pressure Test: Applying pressure to the back of the sow to determine if she is exhibiting estrus.

Conception Rate: The number of sows detected pregnant divided by the number of services.

Cull Rate: The number of sows removed from the herd divided by the total number of sows.

Diamond-Skin disease: Caused by *Erysipelothrix rhusiopathiae*. Bacteria causing high fevers, abortions and swollen joints.

Didi Boar: One with a portion of the epididymis removed.

Double Mating: Breeding a sow twice during one estrus cycle.

Gilt Pool: The group of gilts selected for the breeding herd but not yet bred.

Leptospirosis: Bacteria causing abortions and stillborns; also a zoonotic concern.

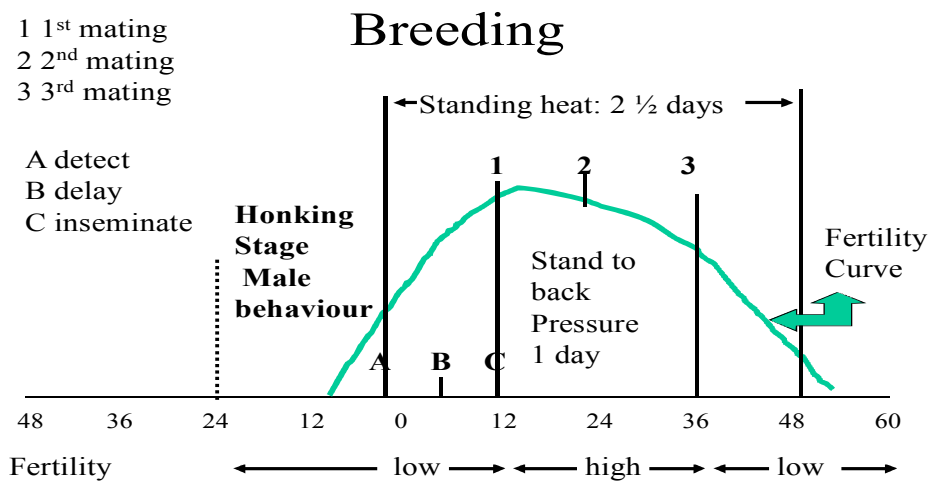
PPV: Porcine parvovirus – virus causing small litter size and lots of mummies

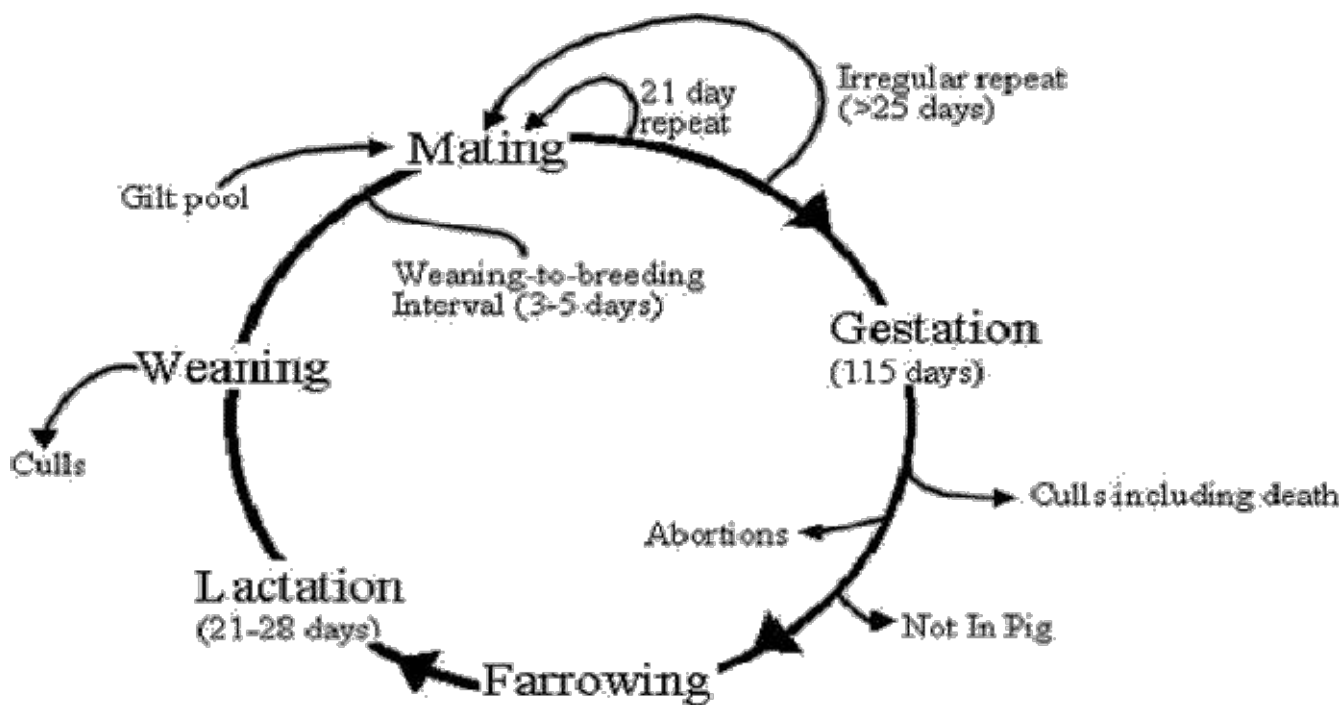
Primary SPF: Herd derived from caesarean section.

Return to estrus: Sow coming back into heat after breeding and before farrowing. Regular return occurs with the estrus cycle: 18 - 24 days. Irregular return occurs after the estrus cycles: 25 - 38 days.

Seasonal Infertility: Decreased production due to breeding sows in the summer months, a second form of this syndrome is associated with stall gestation in cold barns during autumn.

Service: The breedings that occur during one estrus cycle for a sow.





Differential Diagnosis of Reproductive Problems

<u>Condition</u>	<u>Irregular Return</u>	<u>Reduced Litter Size</u>	<u>Mummies</u>	<u>Stillbirth</u>	<u>Abortion</u>	<u>Vaginal Discharge</u>	<u>Postnatal Death</u>
Parvovirus	++	+++	+++	+	-	-	-
Leptospirosis	+	-	+	+++	+++	-	-
PRRS	+	+++	+++	++	++	-	+++
Seasonal Infertility	+++	-	-	+	+	-	+
Vaginal Discharge Syndrome	++	-	-	-	-	+++	-

Session #3 – The farrowing house

Adjusted Farrowing Rate: The number of sows that farrowed divided by (the number of services minus the number of sows that were culled for non-reproductive reasons).

Creep Feed: Feed fed to preweaned pigs.

Cross Foster: Moving pigs from one sow to another to even up the size of the litters.

Induce: Use chemicals to trigger parturition to enable a producer to attend farrowings.

Lactogenic Immunity: Antibodies passed from the sow to the piglet via the milk.

MMA: Mastitis, metritis, and agalactia.

Pigs per sow per year: The number of pigs weaned or marketed divided by the number of sows in the herd.

Processing: Teeth clipping, tail docking, iron injection, castration

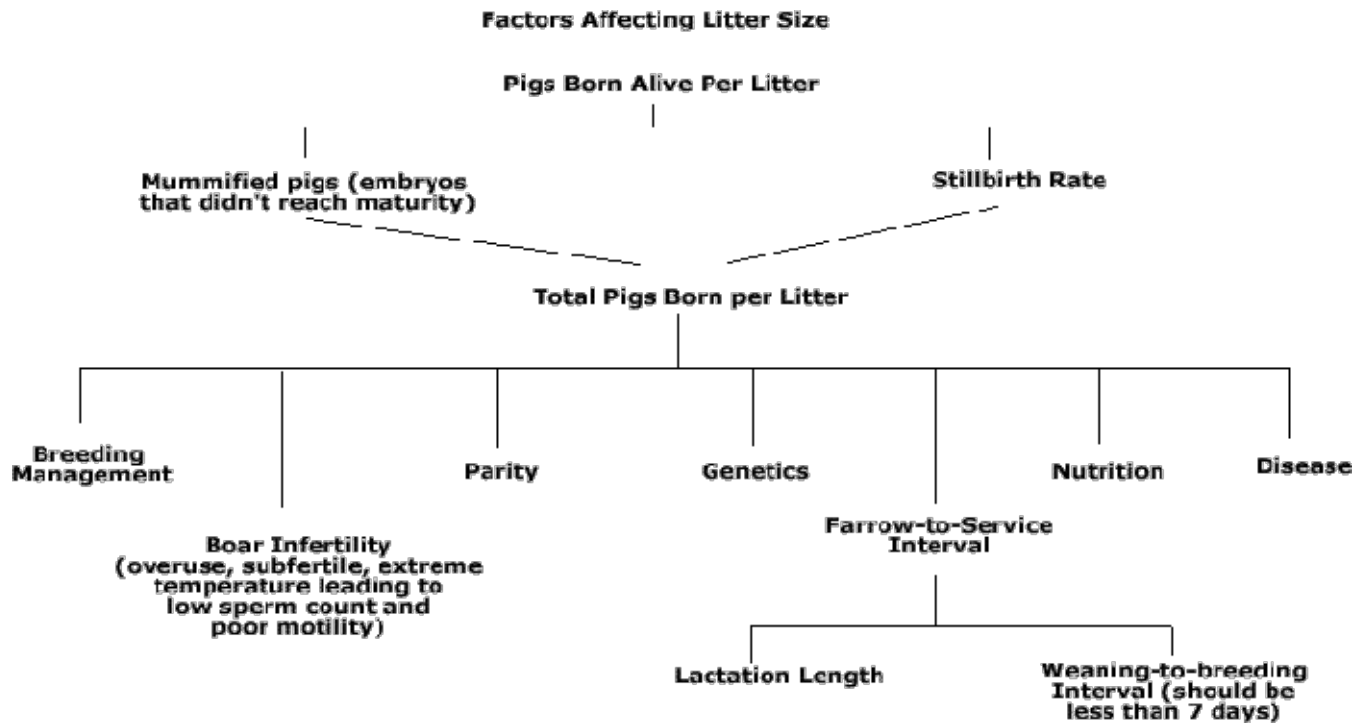
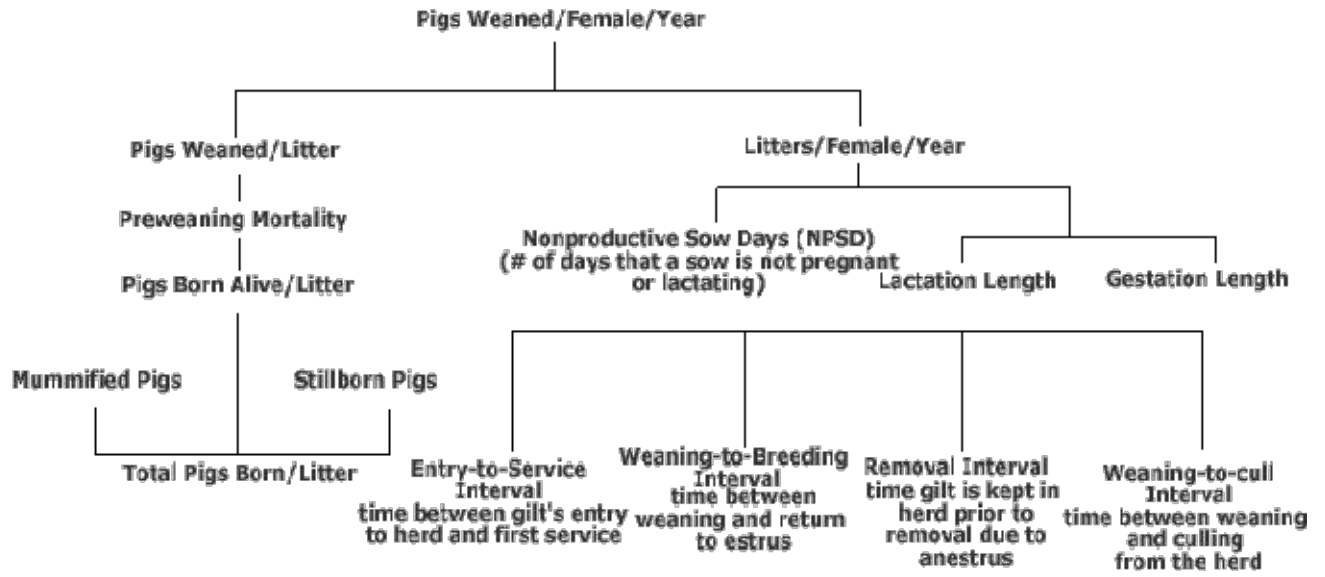
Ridgling: Cryptorchid. A male pig with one testicle retained in the body cavity.

Split Suckle: Split the litter in half and let one half suckle at a time to increase colostrum intake to the smallest pigs.

Split Wean: Wean the biggest half of the litter 2 - 3 days before the rest to decrease weaning-to-breeding interval and increase weaning weight of the remaining piglets.

Signs of pending parturition are: some vulval and udder enlargement, and enlargement of the teats four or more days before delivery. Within 24 hours, sows have a reduction in appetite and become restless. If bedding material is available, sows will generally attempt to make a nest approximately 12 hours prior to parturition, about the same time milk can be expressed from the udder. An hour or two before delivery of the first pig, milk may be dripping from the teats, and the sow is usually lying on her side, at first shivering and breathing rapidly, eventually straining.

Delivery of a litter of piglets averages about 2.5 hours, but there is a wide range of from 1.5 to 10.5 hours. The average interval between piglets is about 16 minutes, with a range from 7 to 52 minutes. If one is to be aggressive about reducing stillbirths, then the usual recommendation is to provide assistance by manually reaching in and pulling piglets out if the interval exceeds 30 minutes. This is probably most appropriate for older sows and sows with a history of having difficult farrowings or high numbers of stillborn pigs.



Session #4 – The nursery barn

Enzootic Pneumonia: Pneumonia caused by *Mycoplasma hyopneumoniae* and secondary bacteria or viruses.

Greasy Pig Disease: Skin disease caused by *Staphylococcus hyicus*.

Nursery Pigs: Pigs from weaning to 25 kilograms (see weaner).

PCVAD: Porcine circovirus associated disease caused by porcine circovirus type II.

Pig Density: The number of square meters per pig.

Pig Flow: The movement of pigs through a barn.

Starter Ration: Feed fed to newly weaned pigs.

Weaner: Or nursery pig, after weaning up to 25 kilograms body weight.

Nursery Pig Requirements

Newly weaned pigs must adapt to solid food, drinking from a water nipple or bowl, a change in environment and a separation from the sow. Pigs are often housed by gender and/or body weight size so the pig may also be separated from its litter mates. Newly weaned pigs have an immature digestive system and therefore need to consume easily digestible feeds such as skim milk powder whey, fish meal or spray dried plasma.

Common Problems of Weaned Pigs Related to Management

- **Weak, small pigs entering the nursery:**

- Sometimes poor quality farrowing facilities, disease or farrowing management make it inadvisable to practice early weaning because too many of the piglets are underweight and unsuited for the nursery (<3.5kg or <8lbs).

- Lack of hybrid vigour - pigs will be stronger if they are the product of crossbreeding compared to purebreds.

- Over-breeding can sometimes put pressure on the farrowing operation to wean too early.

- **Some pigs don't start to eat solid food:**

- These pigs need to be identified in the first 2 days and encouraged to eat. Solutions include hand-feeding; the use of wet, gruel-type feeds, spreading handfuls of fresh feed on a feeding board several times a day.

- **Inadequate water availability:**

- Pigs may not be able to find the water source or may find it difficult to use the water nipples. Bowl-type drinkers are easier for pigs to use, but become dirty easily. Nipple drinkers can become plugged or may be difficult to reach. Flow rates are often too low (they need to be 0.5 L/min [1 cup in 30 seconds] for weaned pigs). Weaned pigs drink 1.2 L per day up to 15 kg body weight and then consume 2.25 L/day from 15 to 25 kg body weight.

- **Poor environment:**

- The temperature requirement of a newly weaned 3-wk-old pig is about 30°C (86°F). The energy intake dramatically drops for the first 48 hr after weaning and typically the pig loses approximately 50% of its body fat during this time. Damp conditions or draughts can dramatically reduce the effective temperature so that the pig becomes chilled. An air speed of about 15 m/min (50 ft/min) is the smallest amount of air movement a human can feel and yet that level of draught can reduce the effective temperature that the pig feels by 3°C (5°F). Temperature fluctuations need to be less than 3°C (5°F).

- **Continuous flow versus all-in/all-out:**

- The use of all-in/all-out management will reduce the disease challenge for these pigs. The environmental contaminants will be reduced and newly weaned pigs will not be exposed to pathogens from older pigs. This is important because newly weaned pigs are losing passive immunity and are at a vulnerable stage of life. Changing to an all-in/all-out system has resulted in a drop in mortality rate from about 10% to 1%, without any other intervention.

- Most pigs at weaning have not been exposed to pathogens and have not had to mount an immune response. Colostral antibodies and lactogenic immunity have protected the pig until weaning. In the nursery, as passive immunity disappears, pigs are very susceptible to infection and therefore must not be exposed to clinically ill older animals or contaminated environments.

High Feed Costs:

- Nursery rations are very expensive and are made to be used as transition feeds allowing the immature gut to adapt to a grain-based diet. If pigs are fed these expensive complex pre-starter rations for too long a period, performance may be excellent but the cost of producing a 25 kg (55 lb) pig might be excessive. Another reason for feed costs to be too high is the inclusion of unnecessary and expensive antibiotics or other medications.

- Feed conversion rates should be below 2 to 1, and if they are higher than this, it indicates considerable feed wastage. Feed conversion or feed:gain ratio is calculated as the number of kilograms of feed used for every kilogram of weight gain.

Behavioural Problems

Various behavioural vices are common:- Tail biting; Ear biting; Flank sucking; Belly nosing; Fighting

Session #5 – The finisher barn

ADG: Average daily gain, the average amount of weight a pig gains in a day.

Carcass Index: Index composed of body weight and backfat measurement.

Carcass Yield: Percent of the live body weight in the eviscerated carcass.

FCR: Feed conversion rate - the amount of feed used divided by the total weight gained.

Feed Efficiency: Feed usage divided by weight gain (F:G or feed conversion rate).

Feed Wastage: Feed that is fed but is not eaten.

Finisher: Stage after grower pig - 70 kilograms to market weight 115 kilograms.

F:G: Feed to gain ratio, the amount of feed consumed for every unit of weight gained.

Floor Feed: Putting the pigs' feed directly on the floor.

Grower: Stage after the weaner pig, 25 to 70 kilograms.

Market Hog: Market weight pig 115 kilograms.

Multi-Site: Production separated geographically onto two or more sites.

Recommended Pen Floor Allowances for Growing Pigs							
Body Weight		Fully Slatted		Partially Slatted		Solid	
Kg	Lbs	m²	ft²	m²	ft²	m²	ft²
10	22	0.16	1.7	0.18	1.9	0.21	2.2
20	44	0.26	2.8	0.29	3.1	0.33	3.5
50	110	0.48	4.2	0.53	5.7	0.61	6.6
75	165	0.62	6.7	0.69	7.4	0.80	8.6
100	220	0.76	8.2	0.85	9.1	0.97	10.4

Feed

A pig eats approximately 300 kg (660 lb) of feed in this phase. Adequate size feeders must be available in each pen. There are two main types of feed used in grower-finisher barns, mash and pelleted feed. Feed must be made accessible to grower-finisher pigs at all times. This is an important factor in order to assure the continual growth of the pigs. Typically there are 5 pigs per dry feeder space and 15 pigs per wet-dry feeder space.

Water

One water nipple is required for every 10 pigs. An adequate water supply must be made available to all grower-finisher pigs. A consistent intake of water is required to ensure continual growth. Water nipples should be adjusted to match the shoulder height of the smallest pig in the pen. Check water nipples daily to ensure that they are working and not plugged.

Housing

Grower-finisher pigs are most commonly housed in pens. Proper pig density per pen (8 sq ft per pig) is vital to ensure efficient growth rates in grower-finisher pigs. Most pens will have slated floors to aid with cleanliness. Overcrowded pigs will have reduced weight gain, increased variation in size, increased morbidity and aggression.

Sorting pigs

When pigs are moved to the grower-finisher barn they should be sorted and placed in appropriate pens. Pigs may be sorted by gender for split-sex feeding and also because barrows reach market weights faster than gilts. Putting evenly sized pigs in a pen reduces the length of time over which all pigs will get to market weight. However, pigs of different sizes will fight less because the hierarchy is obvious. Ideally, pigs will be placed in the same pen groupings as was used in the nursery barn to reduce fighting associated with mixing.

Goals for Grower-Finisher Performance

A reasonable growth target would be to expect pigs to grow from 25 kg to 105 kg in about 100 days. The variation in growth among a group of pigs should be less than 12%.

Growth Rate and Feed Conversion						
<u>Period</u>	<u>ADG (kg)</u>	<u>Gain (kg)</u>	<u>Wt at end of period (kg)</u>	<u>FCR</u>	<u>Feed Consumed</u>	<u>Accumulated Feed (kg)</u>
1 st 30 d	0.65	20	45	2.8:1	56	56
2 nd 30 d	0.75	23	68	3.0:1	69	125
3 rd 30 d	0.90	27	95	3.6:1	97	222
4 th 10 d	1.05	10	105	3.9:1	39	261
Average	0.80			3.2:1		

Mortality in the grower-finisher period should be 2% or less.

Growth rate, feed conversion and mortality in the finishing barn are important values when conducting a herd health visit.

Farmers are paid for pigs on the basis of carcass weight and quality (back fat and muscle depth). A reasonable goal for a producer with good genetics is to achieve an average index of 108 or better, which represents an 8% bonus over the quoted price.

Factors Affecting Feed Efficiency

The Breeding Herd Efficiency

Seasonal Influence

Mortality

Feed Quality and Feed Additives

Feeding System

Market Weight

Disease

Genetics

Building and Environment