

Batch farrowing for the pig industry

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This Primefact provides a brief overview of batch farrowing, a key production strategy for the pig industry and discusses the use of the Batch Farrowing Planner (Microsoft® Excel spreadsheet) developed by NSW Department of Primary Industries staff.

Introduction

Traditionally, pig producers have used a continuous flow production method, which usually involves weekly matings, farrowings and weanings. As a result, a farrowing room may house piglets ranging from newborn to weaning age, while grower sheds may house pigs with an age spread from 10 weeks to slaughter weight.

Unfortunately, this mixing of age groups maximises the spread of disease and increases the reliance upon medication to control disease which further adds to the cost of production.

Batch farrowing

With batch farrowing, sows are formed into groups which allow matings and farrowings to occur at distinct intervals. In small herds, instead of farrowing at weekly intervals, sows will farrow in batches and the entire group can be weaned on the same day. This provides an age break between groups of pigs which disrupts the spread of infection from older to younger pigs. This is further enhanced by allowing the farrowing room to be thoroughly cleaned and disinfected between batches of sows.



Benefits

Batch farrowing provides distinct production and lifestyle advantages for producers and optimises labour and husbandry needs. It allows producers to program activities including the planning and completion of maintenance programs.

Batch farrowing also allows small units to adopt technologies employed by large piggeries

Producers operating mixed farms find batch farrowing particularly helpful as peak labour periods are known well in advance.

Batching allows a single farrowing room to operate on an all-in-all-out basis and lends itself to multi-site production and contracting systems.

Batch farrowing provides larger groups of weaners which allow age segregated rearing to be coupled with split sex feeding and phase feeding strategies. Profitability is increased through:

- improved growth rates and feed conversions,
- improved health,
- reduced medication and costs,
- improved farrowing rates, and
- improved number born alive and weaned.

The batching cycle

Sows ideally will spend their entire reproductive life within the same group of females. They are mated within the same period, hence farrow together and are all weaned together on the same day. This consolidation of certain events allows producers to concentrate on these activities over specific timeframes which are known well in advance.

The number of farrowing pens and farrowing rooms will determine the system selected to divide the herd into equally sized groups. Each group will be at various stages of production depending on the batch interval. However, a significant advantage of batch farrowing is the separation of batches of weaned pigs, using 'all-in/all-out' stock movement through to slaughter.

Herd and group size

While batch farrowing can be used in any herd, it is ideal for small to medium sized herds of 200 to 300 sows. Group sizes are dependent on the number of farrowing rooms, farrowing crates and weaning age. However, it is essential that the throughput capacity of all facilities is carefully calculated before deciding on a suitable batching system (see 'Throughput capacity').

Producers usually prefer to select a system that has a batching interval that allows activities to occur on the same day of the week each time a batch cycles, e.g. 28 or 35 day cycle.

For single rooms this would mean the option of having 4 batches with 28 day weaning *(3x35 days + 1x42 days cycle) or 5 batches with 21 day weaning (5x28 day cycles). As the number of rooms increase the number of batches must also increase to maintain the all-in-all-out production flow.

Table 1 provides a list of commonly used sow groups based on the number of rooms available and piglet weaning age.

With very large herds, the interval of events may be so short between batches that the labour and facility requirements are difficult to manage. However, it does allow specialisation and bottlenecks may be overcome by building new facilities, including deep litter housing systems.

Weaning age

Producers must decide on an appropriate weaning age of piglets that best suits their facilities and throughput. This is one of the

* Because of the batch interval and gestation length a one week gap occurs naturally with every fourth batch.

factors that will influence the number of sow groups selected for a batching system.

Another variable is the number of farrowing rooms available, which provides further weaning age options.

The weaning age selected is only an average of the group as the range in age is determined by the joining duration and any variation in the gestation period of individual sows.

For example, if sows are joined over a 5 day period and piglets are weaned at an average of 28 days, the youngest piglet would be 26 days and the oldest piglet 30 days of age.

Having too wide a joining duration can be counterproductive because of the subsequent age spread of the piglets.

Table 1. Number of sow groups according to room numbers

No. of Rooms	No. of Groups	Weaning Age(days)
1	4	28
	5	21
	6	26
	7	28
	8	25
2	9	25
	10	21
	11	35
3	20	21
	21	28
	9	25
	10	21
	11	35
4	20	21
	21	28
	9	25
	10	21
	11	35

Artificial Insemination

Artificial insemination (AI) is essential for successfully operating a batch farrowing production system. AI has many advantages and the cost compares favourably with natural matings.

AI allows rapid genetic improvement and helps overcome production inefficiencies associated with running numerous boars. AI also minimises OH&S concerns.

Ordering and handling of semen doses is streamlined because the batch size is established and the joining dates are known well in advance. This ensures the freshness of the doses at the time of mating.

Some growers collect their own semen on-farm but this requires adequate technical knowledge, facilities and equipment.

Advantages of batch production

- Ideal for the all-in-all-out production (growth rate increases of 100–150 grams per day).
- Management of larger groups results in more efficient use of labour (e.g. piglet operations) and husbandry practices (e.g. cross fostering).
- Pig movements and peak labour periods are known months and years in advance. This allows more efficient programming of activities on mixed farms and planning for holiday breaks.
- Mating targets are more easily projected and met and the benefits of artificial insemination can be maximised.
- Environments can be more finely tuned to suit particular age groups to maximise pig performance. Cleaning and maintenance can be more thorough as sheds/rooms are empty between batches.
- Fewer age groups allow both phase feeding and split sex feeding to be more easily implemented and it becomes possible to market larger groups of animals over a few weeks.

Disadvantages of batching

- Heat detection of sows and artificial insemination technique must be of a high standard. Boars are still needed to aid in the stimulation and detection of oestrus in females.
- Gilts and sows may fail to cycle in time, so extra females may need to be mated to meet targets. This could also lead to an oversupply of pregnant females.
- If not using AI, boar requirements are excessively high.
- There is no opportunity to back-foster piglets. Slow growers must be weaned and remain within their group.
- Early and late farrowings can cause management difficulties and will extend the age and weight ranges of weaner groups.

- The workload may be particularly heavy for one week per batch, when weaning clashes with other activities.
- If changing over from a continuous flow system, there is an initial period of low production between the last sale of the continuous flow pigs and the first sale of batched pigs.
- Depending on the system chosen, production gaps may occur between cycles but these gaps can be used for routine maintenance and refitting if required.

Throughput capacity

Calculating your herd's throughput capacity is essential to establish a successful batch farrowing herd or to convert from an existing continuous flow herd. Producers need to determine an optimal herd size that fits both available labour and facilities.

To assist producers, a Batching Throughput spreadsheet (Microsoft® Excel spreadsheet) is available in the Australian Pork Limited publication 'Batch Farrowing and Production Manual'. This has been designed to help determine:

- the size of batching herd that will suit your existing facilities, or
- the size of facility necessary to house your chosen herd size and batching rate.

Batch Farrowing Planner

Changing from a continuous farrowing system to a batch farrowing system can be difficult and the planning is often complex.

To assist producers in this change, NSW Department of Primary Industries staff developed the **Batch Farrowing Planner** (Microsoft® Excel spreadsheet).

The **Batch Farrowing Planner** is designed specifically to assist pig producers to move sows into groups and maintain the sequence of joinings and farrowings.

The recently released Version 4 is a multi-shed version that accommodates:

- four or five batches for a single room,
- six to ten batches for two rooms,
- nine to eleven batches for three rooms,
- twenty batches for four rooms,
- twenty-one batches for five rooms.

Entering data

When a batching system has been decided upon, the current production details along with the chosen batching options are entered on the Data Input sheet (Figure 1).

Colour coding on the Joining sheet shows when an invalid system has been generated (Figures 6 and 7). This requires recalculation after entering the correct data on the Data Input sheet.



Figure 6. An invalid system as a result of an incorrect cycle length selection on the Data Input sheet.

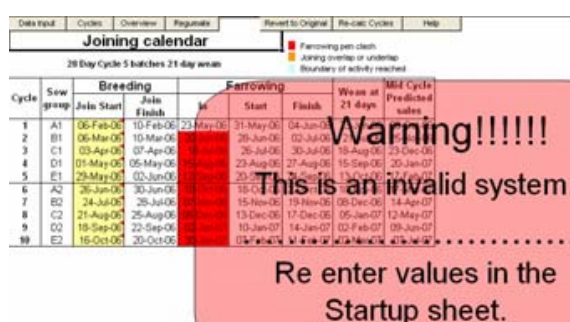


Figure 7. An invalid system when a high number of days were selected for sows to enter the farrowing room prior to farrowing.

Delaying batches

A valuable option available on the **Batch Farrowing Planner** allows the join start date on the Joining sheet to be changed. This enables batches to be shifted to allow for destocking, refurbishing, maintenance or to reorganise work schedules around holiday periods.

The join start date is changed (number of days) where the gap is required (Figure 8) and the planner is recalculated



Figure 8. Creating a gap on the Joining sheet

When the Joining sheet is recalculated the Cycles Sheets will then be recalculated with the adjusted joining start dates. The changed join start date will be highlighted as will any other join start date for each batch affected by the changes (Figure 9).



Figure 9. Changed join start dates are highlighted on the Cycle sheets

In summary, the **Batch Farrowing Planner** assists in the changeover to batch farrowing by detailing:

- a system to move sows into batches,
- when sows need to be mated and when farrowing and weaning takes place,
- a sow feeding regime for the use of Regumate,
- when extra gilts are required to fill a batch of sows.

The batch farrowing planner can be downloaded from the NSW DPI website at:

<http://www.dpi.nsw.gov.au/reader/pigs>

Further Information

A wide range of information sources exists for those interested in the pig industry.

Australian Pork Limited is the national representative non-profit organisation for Australian pig producers. It combines marketing, export development, research, innovation and strategic policy development to help develop a viable and sustainable industry. Resources and contacts are listed on their website <http://www.australianpork.com.au/> or they can be contacted on 1800 789 099.

Specific APL publications with more detailed information are:

- *Batch farrowing and production*
- *Segregated early weaning manual.*

The Queensland Department of Primary Industries & Fisheries has an extensive range of fact sheets and resources available on their website <http://www.dpi.qld.gov.au/pigs/>.

A number of pig specific magazines and newspapers exist, including:

Australian Pork Newspaper, (07) 3286 1833

Pig Industry News, (08) 8372 5222

Pork Journal, (02) 9798 3078

The Pork Producer, (07) 4690 9253

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