

Key Targets

1

Farrowing rate:
aim for 89%+

89%+

2

Farrowing
index (litters/
sow/year): aim
for at least 2.39

2.39

3

Non-productive days
(including wean to
serve interval): aim
for 12 or fewer



Based on top 10% national
figures as of March 2017

Improving Key Performance Indicators: Breeding herd

Achieving a consistent flow of sows and litters through the farrowing and subsequent departments is paramount to the smooth operation of the unit. It is important to keep the cost of producing piglets to a minimum to enable you to maximise profitability at sale. Knowing how your breeding herd performs helps you to identify where and how to concentrate your time, effort and investment to improve performance and reduce the cost of production.

Keeping track of changes in performance over time means you learn what works for your unit, in terms of herd management and environment, motivating yourself and the team to do more of this. It also provides early warning if performance starts to deteriorate.

- For a 'real-time' farrowing rate record, draw up a fertility chart and record weekly services, subsequent failures and expected farrowing rate percentage (FR%)
- Incidences of high numbers of returns, irregular returns and late returns are then recorded and monitored weekly and quick corrective action can be taken as required

FARROWING RATE

The farrowing rate tells you the number of sows that farrow as a percentage of the number of sows and gilts that are served:

- A farrowing rate of 85% means that for every 100 sows and gilts served, 85 have gone on to farrow, while the remaining 15 have either returned, been culled or died
- To calculate farrowing rate keep a record of all sows and gilts served and all farrowings over a 12-month period. Divide the number of sows farrowed over 12 months by the number of sows and gilts served and multiply the answer by 100
- You can track changes each month by deleting data from the earliest month and adding data from the latest month.

Farrowing rate can then be compared with industry averages.

	Average	Top third	Top 10%
Farrowing rates	88%	87%	89%

Source: Agrossoft, March 2017

Services	0	1	16	25	32	39	46	53	60	67	74	81	88	95	102	109	Farrow Rate	Adj Rate	
10/01/16-09/01/16	41	47	39	36	34	34	34	34	34	34	34	34	34	34	34	34	31	31	78.5
10/01/16-09/01/16	40	40	38	38	38	38	38	38	38	38	38	38	38	38	38	38	35	35	87.5
10/01/16-09/01/16	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	74.4
10/01/16-09/01/16	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	80.6
10/01/16-09/01/16	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	81.8
10/01/16-09/01/16	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	71.7
10/01/16-09/01/16	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	81.4
10/01/16-09/01/16	41	41	40	38	37	37	37	37	37	37	37	37	37	37	37	37	37	37	85.8
10/01/16-09/01/16	58	58	49	47	47	47	46	46	46	46	46	46	46	46	46	46	46	46	77.4
10/01/16-09/01/16	31	31	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	80.8
TOTAL	474	474	469	467	467	466	466	466	466	466	466	466	466	466	466	466	466	466	79.7
Non-Program Farrowes	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0
HP Days	24	72	488	434	188	242	451	232	482	211	231	42	185	215	1034				

Fertility chart from Agrossoft

- A low farrowing rate indicates a need to improve herd management:
 - Sow and gilt management – stable body condition, social environment, etc.
 - Nutrition and feeding regimes
 - Stockmanship, including heat observation and recording, service/AI management and handling techniques
 - Physical environment, including the thermal environment and hygiene
 - Timeliness of decisions regarding culling sows.



FARROWING RATE (continued)

- Farrowing rate provides a guide as to how many sows you need to serve to run the farrowing accommodation at optimum capacity, which is key to achieving competitive financial performance
- One less farrowing from target per week equates to a loss of 546 less pigs weaned per year, demonstrating the importance of not having empty farrowing crates
- If the farrowing accommodation provides capacity for 16 sows to farrow each week and the farrowing rate is 85% then you need to serve 19 sows to fill each farrowing room each week. However, if the farrowing rate falls to 75% you need to increase services to 21 sows and gilts per week
- Some managers routinely serve higher than the number theoretically required to ensure a full farrowing house; excess sows are then culled once the batch has been confirmed in-pig
- You need to think through the implications of any new practices carefully. For example, you need to make sure that any increase in sows served (to overcome a low farrowing rate) does not lead to overcrowding of the sow accommodation
- You also need to be aware of costs: extra feed, AI, straw and labour. Each extra sow served and housed through to seven weeks post service costs approximately £70 per sow. If, in a 350 sow herd, an additional 15% of sows are served each week (approx. two to three), the additional cost would be over £8,000 per year.

FARROWING INDEX

Farrowing index (also referred to as litters/sow/year) tells us the average number of times sows farrow in a year. The average farrowing index for UK herds is 2.28, while the best herds achieve nearer to 2.39. Examples of the effect different farrowing indexes have on herd production:

- 350 sows with a farrowing index of 2.28, weaning 11.5 pigs, wean a total of 9,177 pigs per year
- Improving the farrowing index to 2.39 would wean an additional 443 pigs per year (a 5% increase)
- Alternatively, you could wean 9,177 pigs from just 339 sows (3% fewer sows) taking pressure off the service and dry sow accommodation and reducing dry sow feed, variable and labour costs.

Farrowing rate can then be compared with industry averages (see below).

Computerised individual and herd recording will provide regular updates on farrowing index. In the absence of a computerised system you can get a broad idea of farrowing index by completing Table 1.



Number of sows	Piglets weaned/litter	Farrowing index	Piglets weaned per year	Benefits
350	11.5	2.28	9,177	
350	11.5	2.39	9,620	An extra 443 pigs weaned per year.
339	11.5	2.39	9,177	Reduced pressure on accommodation and reduced dry sow feed, variable and labour costs.

Source: AHDB, 2017

Table 1 Farrowing index calculations

To calculate farrowing index	Example	Your herd	Industry average	Industry top 10%
(A) Record the number of farrowings over 12 months	770			
(B) Do a stocktake of sows and in-pig gilts (included from date 350 of first service) each month over 12 months and calculate the average (this will only work for a stable herd size)	350			
Calculate farrowing index by dividing number of farrowings 770/350 by the average number sows and in-pig gilts (A/B)	770/350 = 2.2		2.28	2.39

Source: Agrosoft Ltd, 2017

Once you have your first 12-months' data, you can track changes each month by deleting data from the earliest month and adding data from the latest month.



FARROWING INDEX IS DETERMINED BY FOUR KEY FACTORS

- Length of pregnancy (usually 115 but can be as high as 117 days)
- Length of lactation (typically 26 to 27 days*)
- Typical number of days healthy sows take to come into heat following weaning (target five days)
- Non-productive days.

There is little you can do to change the first two – other than making a radical change to your system (e.g. weaning age or herd genetics).

NON-PRODUCTIVE DAYS

To improve your farrowing index concentrate on non-productive days; these can be caused by:

- Delayed heat after weaning – perhaps because the sow is in poor condition, or housing design does not give weaned sows good exposure to the boar
- Sows missing a service – which might be due to poor heat observation or sows coming into heat in the farrowing house
- Sows returning – potentially due to timing of service or an inadequate environment
- Delayed returns – these are late returns or returns which go undetected until the seven-week scan or even further into the planned pregnancy
- Sows culled or dying during pregnancy – eg due to lameness.



In recording terms non-productive days can also increase due to constructive management decisions taken to improve herd productivity and/or resource utilisation. For example, using nurse sows (either intended cull sows or extending the lactation of a breeding sow) or over-serving to ensure full utilisation of the farrowing house, with excess sows culled once pregnancy is confirmed. It is important to understand the impact of these on your farrowing index. To improve farrowing index you first need to investigate reasons for non-productive days and determine what you can do to reduce these. An individual sow recording system will provide the most accurate measure of total non-productive days and will highlight where these are occurring. In the absence of an individual or whole herd recording system, complete Table 2 to provide an idea of lost days on your unit and how your herd compares with industry averages.

	Example average herd	Example top 10% herd	Your herd
(A) Estimated gestation period	115 days	115 days	
(B) Estimated length of lactation*	27 days	27 days	
(C) Typical weaning to service interval	6 days	6 days	
(D) Total productive days per cycle (= A+B+C)	148 days	148 days	
(E) Farrowing index (as calculated from Table 1)	2.28	2.39	
(F) Multiply total productive days per cycle (D) by your farrowing index (E)	337 days	354 days	
(G) Subtract from 365 days (365–F) to calculate your non-productive days	28 days	11 days	

* Note: the legal minimum weaning age is 28 days. However, under certain conditions (such as adoption of rigorous biosecurity measures) piglets may be weaned at a younger age.



To explore the situation further you will need to keep a record of what is happening with individual sows. Here is an idea of how individual factors can impact on lost days based on annual production from 100 sows.

	Approximate additional lost days per year	Assuming each lost day per annum costs £8.68/ sow in lost net revenue (AHDB, March 2017)
An additional 15% of sows served return at three weeks	7 days	£60.76 per sow/annum
5% of all sows arriving at the farrowing house are found to be not in-pig	13 days	£112.84 per sow/annum

IN SUMMARY

- Farrowing rate, farrowing index and non-productive days are all interconnected. Actions you take to improve farrowing rate have the potential to also reduce non-productive days and improve farrowing index
- To improve sow performance, identify where there is greatest potential for improvement on your unit by comparing your performance with industry data. Set yourself achievable targets and then determine the most cost-effective ways to achieve these targets
- Detailed financial data for the unit will enable you to go one stage further in prioritising between alternative management changes, with a 'what if?' assessment enabling you to assess the financial benefits of improving performance on your unit
- Ongoing recording of sow performance will tell you how successful the measures you are taking are and provide encouragement to you and your team to do more of the same.



Figures contained within this factsheet have been calculated using data from AHDB, 2017.

© Agriculture and Horticulture Development Board 2017. No part of this publication may be reproduced in any material form (including by photocopy or storage in any medium by electronic means) or any copy or adaptation stored, published or distributed (by physical, electronic or other means) without the prior permission in writing of the Agriculture and Horticulture Development Board, other than by reproduction in an unmodified form for the sole purpose of use as an information resource when the Agriculture and Horticulture Development Board is clearly acknowledged as the source, or in accordance with the provisions of the Copyright, Designs and Patents Act 1988. All rights reserved.

While the Agriculture and Horticulture Development Board seeks to ensure that the information contained within this document is accurate at the time of printing, no warranty is given in respect thereof and, to the maximum extent permitted by law, the Agriculture and Horticulture Development Board accepts no liability for loss, damage or injury howsoever caused (including that caused by negligence) or suffered directly or indirectly in relation to information and opinions contained in or omitted from this document.

AHDB Pork is part of the Agriculture and Horticulture Development Board.