



Sow reproduction – Terms and definitions

1. **Age at first insemination (AFI)**, days
Age of a sow at the time of the first insemination in days
2. **Age at first farrowing (AFF)**, days
Age of a sow when producing the first litter in days
3. **First service (FS)**, n
Number of first services of gilts or number of first services of sows post weaning (natural mating or artificial insemination)
4. **Repeat service** – sometimes differentiated by second and third attempts
Number of services of sows who failed to conceive at the first service and had to return for a repeat service
5. **Total services (TS)**, n
Sum of first services and repeat services
6. **Evaluable services (ES)**, n
Number of mated sows minus sow cullings between service and the anticipated farrowing date, excluding sows sold when pregnant following service or culled because of failure to conceive
ES can be correlated to both FS and TS.
7. **Pregnancy rate (PR)** in %
The pregnancy rate can also be correlated to both FS and TS.

$$PR_{FS} \% = \frac{\text{Number of sows pregnant from FS}}{\text{Number of evaluable FS}} \times 100$$

$$PR_{TS} \% = \frac{\text{Number of sows not pregnant from TS}}{\text{Number of evaluable TS}} \times 100$$

**8. Farrowing rate (FR) in %, calculated after FS and TS**

$$FR_{FS} \% = \frac{\text{Number of litters born from first service}}{\text{Number of first services (FS)}} \times 100$$

$$AFR_{TS} \% = \frac{\text{Number of litters born from total services}}{\text{Number of total services (TS)}} \times 100$$

Die FR can be calculated broken down by

FR (%), gilts

FR (%), sows

FR (%), gilts and sows

9. Total piglets born (TPB)

Number of all fully formed fetuses expelled at farrowing, dead or alive

10. Piglets born alive (PBA)

Number of piglets alive immediately after birth

11. Stillborn piglets (SP), n

Number of fully developed piglets not alive after emerging from the birth canal

12. Number of piglets fit for rearing (NPFR), n

Number of piglets available for rearing on the day post farrowing

13. Number of piglets weaned (NPW), n

Number of piglets available on the day post weaning

14. Farrowing interval (FI), days

Number of days between two consecutive farrowings

15. Weaning to service interval (WSI), days

Number of days from weaning to the next service

**16. Average number of piglets weaned per litter born (NPW/ L_B)**

Number of piglets weaned in a group of sows in relation to the number of litters born

$$\text{NPW/L}_B (n) = \frac{\text{Number of piglets weaned (NPW)}}{\text{Number of litters born (L}_B)}$$

17. Average number of piglets weaned per litter weaned (NPW/ L_w)

Number of piglets weaned in a group of sows in relation to the number of sows from which piglets were weaned at the end of the suckling period (= weaned litters)

$$\text{NPW/L}_w (n) = \frac{\text{Number of piglets weaned (NPW)}}{\text{Number of litters weaned (L}_w)}$$

18. Oestrus rate (ER) in %

$$\text{ER (\%)} = \frac{\text{Number of sows with oestrous behaviour}}{\text{Total number of sows due for first insemination}} \times 100$$

19. Non-return rate (NRR) in %

$$\text{NRR \%} = \frac{\text{Number of non-returns}}{\text{Number of first-inseminated sows}} \times 100$$

20. Return rate (RR) in %

Possible after FS and TS

$$\text{RR}_{\text{FS}} (\%) = \frac{(\text{Number of returners + abortions up to day 104 of pregnancy}) \text{ from FS}}{\text{Number of first services (FS)}} \times 100$$

$$\text{RR}_{\text{TS}} (\%) = \frac{(\text{Number of returners + abortions up to day 104 of pregnancy}) \text{ from TS}}{\text{Number of total services (TS)}} \times 100$$

**21. Average litter size, n**

Here, too, the possible reference basis is FS, TS and gilts/sows, gilts or sows.

$$\text{TPB/litter (n)} = \frac{\text{Total piglets born (TPB)}}{\text{Number of litters born (L}_B\text{)}}$$

$$\text{PBA/litter (n)} = \frac{\text{Piglets born alive (PBA)}}{\text{Number of litters born (L}_B\text{)}}$$

$$\text{NPFR/litter (n)} = \frac{\text{Number of piglets fit for rearing (NPFR)}}{\text{Number of litters born (L}_B\text{)}}$$

22. Piglets weaned per sow and year (NPW/sow and year), n

$$\text{NPW/sow and year (n)} = \frac{\text{Total number of piglets weaned/year (NPW/year)}}{\text{Average number of active sows}}$$

23. Piglets weaned per farrowing place (NPW/FP), n

$$\text{NPW/FP (n)} = \frac{\text{Total number of piglets weaned/year (NPW/year)}}{\text{Number of farrowing places (FP)}}$$

24. Average annual herd size (AAHS)

$$\text{AAHS} = \frac{\text{Rearing herd} + \text{monthly herd size} \times 12}{13}$$



25. Average herd size per time period (AHS/t)

$$\text{AHS/t} = \frac{\text{Rearing herd} + \text{sum of monthly herd sizes}}{\text{Number of months} + 1}$$

26. Active sows

All sows in the herd, from first breeding use to culling

27. Piglet index (PI)

$$\text{PI}_{\text{TPB}} = \text{FR} \times \text{total number of piglets born (TPB)}$$

$$\text{PI}_{\text{PBA}} = \text{FR} \times \text{number of piglets born alive (PBA)}$$

28. Litters per sow and year (L/sow and year)

$$\text{Litters/sow and year} = \frac{\text{Total litters/year}}{\text{Average number of active sows}}$$

29. Reproduction rate (RPR) in %

$$\text{RPR/group (\%)} = \frac{\text{Number of gilt litters per group}}{\text{Sows/farrowing group}} \times 100$$

30. Replacement rate (RR) in %

$$\text{RR (\%)} = \frac{\text{Proportion of gilts/year}}{\text{Average number of active sows}} \times 100$$