

Improved health, welfare and viability in young pigs: breeding for improved piglet survival

Description

Often the same genetic lines, where large litter size is an important selection criterion, are used in organic and conventional European farms. Large litters result in significant piglet losses in the first days of lactation.

Practical rules for the management of super-numerary piglets and their adoption by nurses exist, but are difficult to implement in many organic farms where births are not tightly grouped and where the number of sows per batch is often low. In outdoor production where human interventions around birth are challenging, crossfostering, obstetrics and neonatal care are nearly impossible.

Large litters are also associated with a high proportion of low birth weight piglets that have a high risk of dying if the number of functional teats is insufficient for the whole litter to suckle.

A frequent cause of piglet mortality is crushing, which can occur in any system. It is dependent on leg soundness and the sow's attention towards piglets. Therefore, piglet mortality could be reduced by choosing less prolific sows with high leg soundness, enhanced nursing ability including improved maternal behaviour towards piglets as well as enhanced milk production.

Legislation

EU organic Regulations 2018/848 and EU 2020/464, stipulate that:

- Any suffering of the animals [...] shall be kept to a minimum.
- The choice of breeds shall also contribute to the prevention of any suffering.
- Organic farming respects high animal welfare standards and aims to meet the animals' species-specific behavioural needs.

Applicability box

Theme

Pigs

Farm type

Indoor housing with outdoor run and pasture access

Production stage

Sows + piglets

Welfare Environment Cost



Piglets that miss several nursing events have a higher risk of mortality.



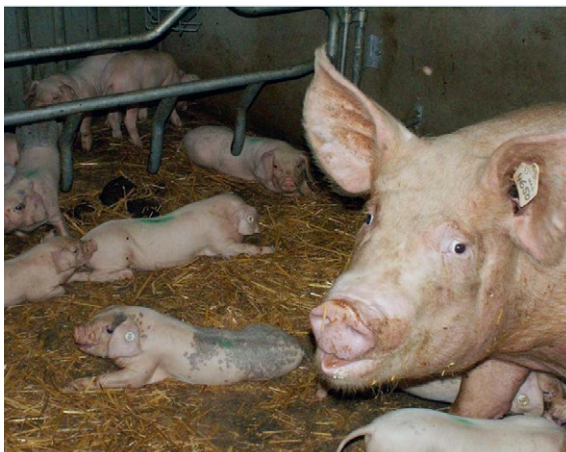
The sow's attention towards piglets before lying down is favourable to survival.

Relevance for animal welfare

Piglet mortality is high in organic production and can reach 35 %, conflicting with the organic principles to ensure high animal welfare. Postnatal death due to crushing by the sow and piglet starvation is a source of intense suffering that should be shortened by euthanising the piglets as soon as they are detected as non-viable. However, euthanasia is not a satisfactory solution. To truly improve animal welfare, early postnatal death should be avoided. It can be achieved through a combination of solutions based on better housing and management and genetics adapted to organic farming.

Relevance for environmental impact

- The direct environmental impact of using breeds adapted to organic farming is supposed to be low even though it should be positive, since any reduction in animal losses increases the system's efficacy and hence reduces the environmental impact.



Cross-breeding improves numerous biological characteristics.

Cost and labour

- Economic losses associated with early piglet mortality may markedly impair the sustainability of pig production.
- Detecting and removing dead or dying piglets in the pen, the hut or the paddock daily is time consuming.

Recommendations

- **Breeding lines:** To optimise genetic lines for reducing piglet mortality outdoor, rustic (traditional) breeds, synthetic lines and cross-bred sows that benefit from heterosis effects (i.e., vigour due to the mix of two genetics) are recommended since they should be more robust and piglet survival should be higher.
- **Selection of breeding animals:** The two-breed rotational cross can be applied. It uses boars from pure sire lines in alternate generations to increase performance on the farm, retaining cross-bred females for maternal stock. Recourse to a multiplier at the initial stage is recommended to benefit also from the progress achieved with conventional selective breeding.
- **Piglet mortality:** Farmers should have an active role in selecting pigs for reduced piglet mortality, choosing replacement gilts from the best dams they have on the farm. To ensure piglet survival, dams without leg or lactation problems and with good behaviour, i.e., precautionous when lying down and positive interactions with piglets and humans, should be preferred. Postural activity observations and scoring in the perinatal period helps identifying females at risk of stillbirth, of crushing piglets and of having starving piglets (e.g. lying on the belly to limit nursing).
- **Litter size:** A balance between the number of piglets born and sow maternal capacity should be the target. Genetic solutions can be set up if farmers collect standardised data and pedigree information and mutualise them.



Further information

- **EU (2018):** Regulation (EU) 2018/848 on organic production and labelling of organic products. At: eur-lex.europa.eu [Link].
- **EU (2020):** Commission Implementing Regulation (EU) 2020/464 of 26 March 2020 laying down certain rules for the application of Regulation (EU) 2018/848. At: eur-lex.europa.eu [Link].
- **Leenhouwers J.I. et al. (2011):** Breeding replacement gilts for organic pig herds. *Animal* 5:4, pp. 615-621 [Link].
- **Leenhouwers J.I., Merks J.W.M. (2013):** Suitability of traditional and conventional pig breeds in organic and low-input production systems in Europe: Survey results and a review of literature. *Animal Genetic Resources*. Volume 53, pp. 169-184 [Link].
- **Wallenbeck A. et al. (2016):** Preferences for pig breeding goals among organic and conventional farmers in Sweden. *Organic Agriculture* 6, pp. 171-182 [Link].

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