

Improved concrete outdoor runs in housing systems for growing-finishing pigs: benefits of roughage as nutritive enrichment

Description

Organically raised pigs must have daily access to roughage, as is not only enrichment that promotes exploratory behaviour but also a valuable part of the pigs' diet.

High-quality grass- or clover-grass silage is an ideal roughage for pigs due to its attractive taste and consistency. Other types such as corn or barley whole crop silage have comparable benefits regarding health and welfare. During the vegetation period, pigs appreciate fresh green fodder. However, good quality hay is also suitable for pigs.

Fresh roughage should be provided every day to assure attractiveness. This also prevents fouling and spoilage of roughage. As pigs are inquisitive animals, periodical change to a different type of roughage may further increase its use and attractiveness. However, farmers should choose roughage with appropriate quality and quantity which is locally produced, e.g., on-farm or regionally.

Legislation

- Roughage, like fresh green fodder, hay, silage or arable crops, must be provided as part of pigs' daily diet (EU organic Regulation 2018/848 and Swiss Ordinance on organic farming SR 910.181).
- Some countries specify the types of roughage to be used or requirements for roughage provision, e.g. on the floor or in a rack, in a way that prevents soiling (Austria), permanent access either of pasture or roughage (Denmark), if it is considered as rooting material, provision only in the trough is not sufficient (France).

Applicability box

Theme

Pigs

Farm type

Indoor housing with outdoor run

Production stage

All stages of pig production

Welfare Environment Cost



Relevance for animal welfare

In semi-natural environments, pigs spend about 70 % of their day-time activity rooting, foraging and searching for food.

Roughage allows pigs to perform foraging and exploratory behavioural needs and satisfies feed-related behaviours like chewing and swallowing, thus reducing redirected oral activities, such as tail biting. Pigs housed on straw with additional access to roughage, for instance, increase the time spent on foraging, exploratory and feeding behaviour, which reduces aggressive behaviours among pigs as well as skin lesions originating from social interactions.

The nutritional value of roughage should also be acknowledged. Studies have shown a beneficial effect of roughage on gastric health, as it significantly reduced the occurrence of gastric fissures or ulcers.



Fresh grass provided on the floor of the outdoor run allows pigs to perform foraging behaviour, but compared to grass provided in racks, there may be more feed waste.

Relevance for environmental impact

- Depending on silage quality (dry matter content, protein content), 10-20% of concentrate feed can be substituted. This results in a reduced environmental impact caused by the animals' nutrition.
- From a holistic farm system perspective, the cultivation of grassland and crops used for roughage can also contribute to the system's sustainability. It offers possibilities for crop rotation, nitrogen fixation through legumes (e.g. clover-grass) and carbon sequestration through permanent grassland.
- Moreover, good animal health is a prerequisite for efficient production, which is desirable in the context of environmental impacts.

Cost and labour

- Labour demand varies depending on how roughage is provided (floor, rack), accessibility of the location for the farmer (e.g. with a tractor) and frequency of provision.
- The required amount of roughage, and thus its cost, depends on the pig's level of consumption and wastage.
- As roughage intake by pigs is desirable, costs can be saved by minimising roughage waste (e.g. frequent provision in small quantities, racks with trough underneath).
- On-farm or regionally forage production guarantees certain independence from availability and prices and saves transport costs.

Recommendations / requirements

- **Changing frequency:** Roughage should be frequently changed and provided in adequate amounts that ensure high quantity and accessibility of roughage for all pigs during the day. This helps to prevent aggressive behaviour.
- **Amount:** The adequate amount of roughage depends on the type of roughage and provision, as well as age of the pigs. For growing-finishing pigs, 400 grams or more per pig and day are well used by the animals and can be recommended based on practical and scientific experience. However, attractiveness and freshness are crucial.
- **Cleaning:** Daily cleaning of leftovers on the floor assures good pen hygiene, which helps to prevent diseases.
- **Type of roughage:** Grass or clover-grass silage is recommended as roughage. Alternatively, fresh grass, hay, lucerne silage or pellets, as well as corn silage (whole crop) are good options. Above all, the quality of the roughage is crucial.
- **Dry matter and pH:** Good quality silage for pigs has a low dry matter content of 25-30 % and a pH around 4.
- **Straw:** In the bedded lying area straw is not considered as roughage according to organic legislation. Apart from possible hygienic issues, it competes with the needs for lying and rooting and does not meet pigs' nutritional needs.



Piglets also appreciate fresh clover-grass. Roughage should be provided in addition to straw bedding on a level, solid and clean surface.



Providing silage in a rack is also suitable for pigs.

Further information

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