

Innovative farming in Italy: pasture rotation in the forest

Description

On this farm, the local heritage pig breed *Cinta Senese* is bred and reared outdoors in a hilly forested area. Pigs have unlimited access to paddocks that consist of large, forested parts and pasture areas. In the forest, pigs find protection from the wind and extreme temperatures in the summer and winter.

Pregnant sows stay with the boar in a large paddock. Lactating sows have smaller paddocks individually or in pairs. Their paddocks have huts as well as bushes and trees. To protect weaners from predators and keep the group calm, they are reared with a few pregnant sows. Growing-finishing pigs are reared in large paddocks, which are rotated every 2 to 3 months.

Pigs are slaughtered at the age of one year with a live weight of 100 to 130 kg. The whole production is sold directly on the farm.

Pasture management

To protect the forest ecosystem, it is important to preserve the integrity of leaf litter and tree roots. Therefore the number of pigs in each paddock has to be limited. Small groups of 15–20 growing-finishing pigs stay on paddocks of two or more hectares. The forest feeds pigs mainly in autumn, with e.g. acorns, while pigs feed on fresh pastures in the clearings, mainly in spring and autumn. After 2–3 months, the pigs are moved to another paddock, and the used paddock rests for at least one year to recover from foraging damage. Weaners have smaller paddocks of about one hectare, which are mainly covered by pasture. The pigs are fed in the morning to satisfy nutritional needs and preserve the vegetation cover. Single feed components are bought externally and are mixed on-farm.

Each paddock is equipped with tanks to provide water using nipple drinkers. The fencing is made of strong electric wires.



Farm portrait

Location

Tuscany, Italy

Topography

Hilly area

Farmland

420 ha: 60 ha permanent pasture,
350 ha forest, 10 ha other production

Size of pig herd

12 sows,
100 weaners and growing-finishing pigs

Farming system

- All animals are housed year-round outdoors on paddocks that all include forest as well as pasture.





Sows of the local heritage breed Cinta Senese have a strong maternal instinct. Therefore weaners are reared together with some pregnant sows that protect them from predators.

Animal welfare

- On this farm, pigs are kept in their natural habitat, in a forest area where they are free to express their full behavioural repertoire originating from their wild ancestors.
- The use of large paddocks with low stocking densities makes it possible to avoid lesions on skin, tails or ears due to social competition.
- During the observation period, the only health problem was oedema disease in weaning piglets, reduced by vaccination.
- Thanks to its compensatory climatic activity, the forest allows pigs to avoid thermoregulatory problems that occur in extreme heat or cold.
- Sows have a long reproductive career. *Cinta Senese* sows have a strong maternal instinct that allows defending suckling piglets and weaners from predators.

Table 1: Animal welfare assessment

Age group	Welfare parameter	Assessment during project period
Weaners, outdoors	Ear lesions	Not detected
Weaners	Runts	Not detected
Pregnant sows	Skin lesions (scratches)	Not detected
Sows	Sunburns on ears, body, udder	Not detected
Sows	Thin sows	4 sows in 30 visited
Sows	Vulva lesions, deformations	Not detected
Sows	Lameness	Not detected
All animals	Short tails (tail biting)	Not detected
All animals	Diarrhoea	Not detected
All animals	Ocular discharge	In 1 out of 4 paddocks <33 % of all animals

- The farmer has a close relationship with his animals. Every day he inspects them, opens and closes feeding areas, feeds them with buckets and leads pigs to new paddocks. The level of trust of pigs in humans is very high so that during the clinical visits, the problem is the excess of curiosity, not fear.

Environmental impact and productivity

- Due to the large size of the farm, a paddock rotation system is possible, which is key to environmental sustainability of this farm.
- The farm is totally dependent on the input of purchased feed. The pig's high feed conversion rate increases production cost, but the price of fresh and processed meat compensates these expenses.
- Pigs must grow slowly to develop the right muscle ripeness suitable to process into typical high prize Tuscany seasoned products. This makes the use of a local breed in a low input system necessary, where feed is rationed and pasture yield can be poor.



Table 2: Productivity

Productivity	Sow	
Average No. of Litters / Sow / Year	2	
Average No. of born Piglets / Litter	6	
Average No. of weaned Piglets / Litter	5	
Average No. of Litters / Sow until Culling	12	
Feed usage / Sow / Year [kg]	1,000 ¹	
Productivity	Weaners	Finishers
Average daily weight gain [g / day]	250	300
Feed conversion rate [kg / kg gain]	4.0	6.5

¹concentrate

Labour and cost

- The farm has several employees, one solely appointed for the pigs.
- The level of work is related to the animal category, production stage and season.
- The most important and time-consuming work is inspecting and fencing paddocks, including many kilometres of electric wires in the forest.
- In this type of farm, work is endless, and planning is crucial since the situation is constantly changing in this natural system.

Take away lesson

- The “ancient” approach of pig fattening in large forest areas in rotation, which ensure a high level of animal welfare, can produce high-quality processed meat.

Further Information

ICROFS (2021): Innovative pasture systems from Denmark and Italy. Video. International Center for Research in Organic Food Systems ICROFS, Tjele. Available in English: www.youtube.com [Link].

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