

**List of identified potential demonstrators of examples of good welfare practices regarding alternative rabbit production**

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## Introduction

Concrete examples of best practices in relation to rabbits' welfare may inspire producers in the European Union to take up similar practices or implement related initiatives. During 2022, the European Reference Centre for the Welfare of poultry and other small farmed animals have searched for and identified best practices regarding alternative rabbit production. The intention is that one or two members of the consortium will visit a selection of these best practices in 2023. The knowledge gained during the visits will be used for the final decision on which demonstrators can be approved as examples of best practices. The end-product will be factsheets on best practices of alternative rabbit production.

## Description of the identified examples of best practices

### 1. Outdoor system with fixed housing (ES)

The full system described here carries out several good practices for the welfare of rabbits. This is an outdoor system that uses fixed housing. The farm is located in Bellestar (Spain), and house 70 breeding does, 12 bucks and 250 fattening rabbits.

Animals have the possibility of accessing an outdoor area, which is protected from wild animals with wire mesh. According to D'Agata et al. (2009), access to an outdoor area improves the ability to cope with stressors, increases physical activity and improves meat quality. This zone includes a solid floor, and it is equipped with a shelter. An opening in the wall permits the movement of the animals between the outside and the inside of the system, where large pens with both wire mesh and solid walls are present. These pens have solid floor and are equipped with an automatic nipple drinker for water distribution as well as feeders for feed provision.

Fattening rabbits are reared in groups of 40-50 animals from weaning onwards. The part of the system inside has a big wood bench that animals use as a platform. They also have straw available inside a mesh box. The addition of enrichment materials, such as straw, can stimulate a wide range of active behaviors typical of this species, such as exploration or gnawing behavior (Coda et al., 2020).

Reproducing does are housed individually with their litter. The part of the system inside includes a nest. They have access to nest one week before the expected date of birth. The litter comprises shaving at the bottom and straw above.

Organic feed is used for the feeding of fattening rabbits, does and bucks. They are also fed vegetation from the surrounding area, such as dried nettles as well as walnut, fig, and pine branches. Moreover, they also give oregano branches to growing rabbits daily, and according to the farmers, the number of rabbits with livers affected by coccidiosis has decreased by 80 to 90%.

After 30 days of parturition, while the kits are still suckling, the doe is exposed to natural breeding by introducing a male into their pen. Suckling kits are weaned at 53 days. The maximum stocking density is 5 animals/m<sup>2</sup>. The lower stocking density used in this farm allows rabbits to move freely and perform more active behaviours. According to Alfonso-Carrillo et al. (2014), the combined use of more space available and long lactations could be an alternative to improve animal welfare, decreasing mortality and increasing performance of fattening rabbits without negatively affecting the reproductive traits of rabbit does.

Finally, this farm has a natural method to control fly eggs. They use lime and diatomaceous earth.

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## 2. Best management practices for rabbits housed in park systems (IT)

The use of parks as an alternative housing system for rabbits provides many advantages, because it is better suited for large intensive productions like those present in some European countries than other alternative or niche systems and can at the same time, with some care taken by the farmer, meet the physiological and behavioural needs of rabbits. Specifically, it is a new industrial system, suitable for breeding large numbers of rabbits, that allows reduction of stocking density, provides always environmental enrichments and an increased functional space for rabbits. These elements, that can be considered intrinsic and peculiar to this system, must be properly maintained and periodically cleaned and disinfected.

Dual-purpose elevated pens (also called parks) comprise of single modules (Figure 1) that can be connected together (Figure 2). The single module is larger than enriched dual-purpose cages and it is open-top. It is used for individual housing of the reproducing doe from a few days before kindling until the end of lactation of her litter and then, after removal of some items and after joining the single modules, for group-housing of growing rabbits. Walls are wire mesh, whereas flooring is made of either wire mesh or plastic slats. The single module is equipped with feeders and nipple drinkers. It always includes a platform with wire mesh or plastic slatted flooring. A plastic footrest is available if plastic flooring is not used.



*Figure 1. Single modules of pen system used for the doe and her litter. All modules are equipped with an elevated platform. (Izsler)*



*Figure 2. Pen system once the single modules are connected together, forming a larger pen usually 180-200 cm width x 80-102 cm length (Izsler)*

Each module is equipped for the reproducing doe and her litter with a movable plastic nest containing the litter in the front; the nest area is separated from the rest of the cage by a removable wall with a sliding door (fig. 3). The door of the nest can be closed for controlled lactation during the first 1–2 weeks after kindling. Then around 21 days of age, the wall between the nest and the rest of the cage as well as the nest box are removed to stimulate solid feed uptake of the kits and to provide a unique space (EURCAW Poultry-SFA, 2021). After weaning and once the doe is carried in a dedicated cage, the walls between single modules are removed to form a pen/park for group housing of growing rabbits. Once the single



*Figure 3 Removable nest with a sliding door for controlled lactation. (Izslér)*

modules are united, at least 4 separate feeding and 2 drinking points are provided (1 for every 10 and 1 for every 20 rabbits, respectively) (Italian Ministry of Health, 2022).

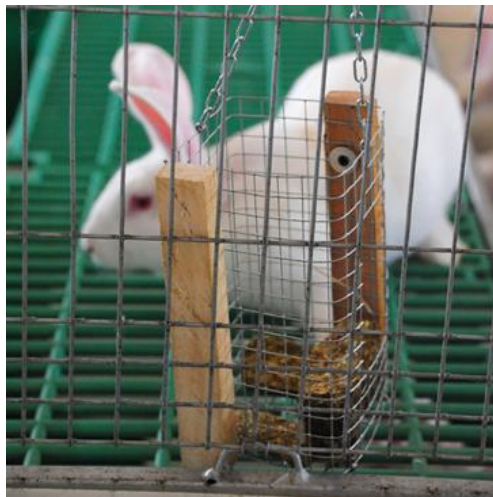
European Food and Safety Authority (EFSA) (2005) recommended 40 kg/m<sup>2</sup> (16 rabbits/m<sup>2</sup> when slaughtering weight is 2.5 kg) as a maximum stocking density from the perspective of both rabbit performance and animal welfare, based mostly on literature on cage housing. Later, in 2020, EFSA proposed further reduction to avoid resting problems.

According to the Italian Ministry of Health (2021), a stocking density  $\leq 32$  kg/m<sup>2</sup> at the end of the fattening period is recommended. Moreover, during the warm season a further reduction in stocking density should be considered (Italian Ministry of Health, 2021, Oladimeji et al., 2022, Turner et al., 2017).

The use of pens meets these requirements as it allows stocking density to be kept  $\leq 32$  kg/m<sup>2</sup>. It also provides more functional space (Trocino et al, 2015). Usually, four modules (four litters of 8-10 kits each) are joined to form one pen/park, forming a complete group of 32 rabbits and a maximum of 40 growing rabbits. Thus, by making calculations of the total available area (18,000–25,400 m<sup>2</sup>, including the platform of about 3 m<sup>2</sup>), an acceptable and congruous

density value can be obtained even at the time of sending to slaughter (when the rabbits reach 2.4-2.7 kg).

In the space available of pens, environmental enrichment is provided in order to enable the rabbits to withdraw, rest, explore, forage and locomote, for all rabbit category (Classyfarm, 2022). Appropriate enrichment structures may include: i) elevated platform; ii) separate compartment, which provides additional space; iii) tunnel/tube and iv) visual barrier. The design of such structures facilitates access and use by the animals. Indeed, particular care is taken in maintaining good hygiene conditions of enrichment structures (EFSA 2005; EFSA 2020). Suitable material is available for rabbits to allow exploratory behaviour and oral activity including gnawing and chewing (EFSA, 2020; Italian Ministry of Health, 2021). Such material may be of natural (e.g. wood, hay packets, “high-fibre feed”) or artificial material (e.g. small metal chain or a small metal cage filled with wood/pressed hay etc.). In any case, the enrichments are easy to clean and designed not to provoke injuries or health problems.



*Figure 4: Example of enrichments. On the left, gnawing material: small metal cage with wood sticks and filled with pressed hay. On the right: tunnel (Classyfarm, 2022)*

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### 3. Organic rabbits with outdoor access (FR)

This best practice consist in rearing of meat rabbits with outdoor range and under organic label.

Each doe has her own indoor area with a nest box. The indoor area is elevated from the outdoor range and a sloping ramp allows access between the indoor and outdoor range. Each range has a vegetation cover where animals can grass. After farrowing, the kits are staying with their mother until 60 days of age and are also allowed access to the outdoor range. After weaning they are reared in fattening groups in outdoor pens with a semi-buried shelter until 100 days of age.

The best practice will describe in detail the husbandry and management conditions used in this rabbit farm with outdoor range where animals can express their natural behaviours.