

## Conception of the breeding unit

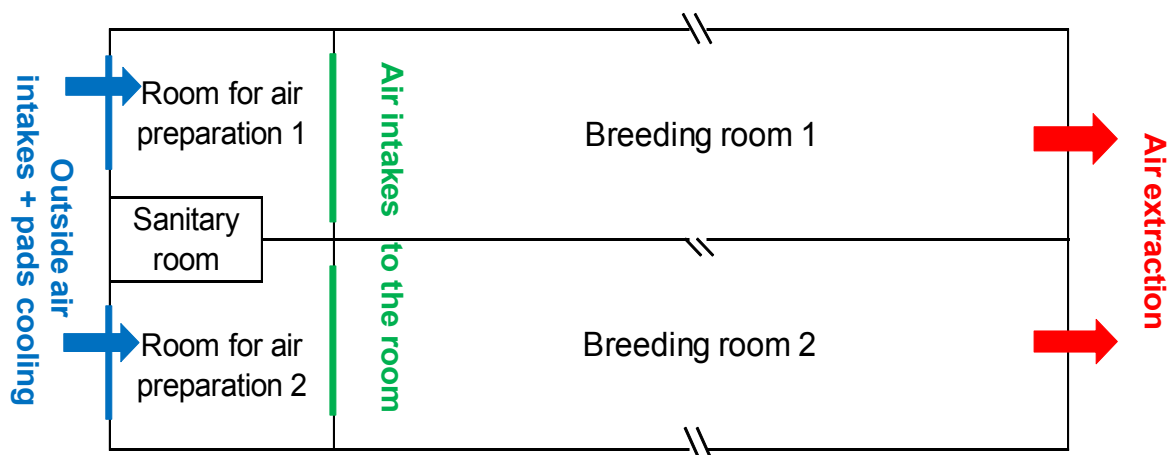
The information given in this document are suitable for a livestock managed in a single group with the system all-in/all-out. The cycle duration is 42 days, AI are performed 11 days after kindling. In this system, the weaning is made at 35 days and the sale of animals at 72 days (+/- 3 days).

### 1) The building

- It is composed of three zones:
  - 1 sanitary room,
  - 2 rooms for air preparation (heating or cooling),
  - 2 breeding rooms identical for a management with the system all-in/all-out.
 (See diagram below)
- **The floor area per female in production should be 0.5 m<sup>2</sup> / breeding room**, or 1 m<sup>2</sup> of total area, excluding rooms for air preparation and sanitary room.
- The length of the room for air intake preparation should be **10% of the breeding room**.

 For a breeding room of 40 m long, the room for air intake preparation should be 4 m long.

- The minimum volume of each breeding room must be **0.2 m<sup>3</sup> / kg of body weight** at the end of fattening (period where there is a maximum of kg of body weight in the room).
- Designing a building easy to clean and disinfect.



### 2) The material

- For a single group of **1000 females**, it is necessary to provide for each breeding room:
  - **830 mixed cages** (cage fitted to kindling, lactation and fattening) **equipped with a nest box** (only 1 room will be equipped with partition walls and nest boxes),
  - **50 kindling cages in buffer** (1 buffer kindling cage = 2 individual cages),
  - **at least 600 individual cages** (including buffer kindling cages).



*For a high technical performance, it is preferable to provide 1 individual cage for each mixed cage installed.*

- It is necessary to adapt the building to maximum densities:
  - **0,17 m<sup>2</sup> / animal** in individual cage for pre-stock,
  - A maximum of **40 kg / m<sup>2</sup>** of cage in fattening.

### 3) The equipments

#### ➤ The ventilation

- The air intakes

- \* *The outside air intakes.*

- Their surface must be defined according to power of air extraction to achieve **a maximum speed of air intake of 2 to 3 m/s.**
    - They must be flexible depending on the season.

- \* *The air intakes of the breeding room.*

- They must be set manually or automatically.
    - **In winter**, the maximum speed of air intake in the breeding room is **1 m/s** at the entrance to the room, prefer low air intakes.
    - **In summer**, the air speed can increase up to **2 m/s** at the entrance to the room, using high and low air takes.

- The air extraction

- \* The air extraction must be the animals.

- \* Provide an **air extraction capacity of 4 to 5 m<sup>3</sup> / hour / kg of body weight** depending on the region.

- \* The system must allow a gradual reduction and increase in the power of air extraction.

\* The regulation system of ventilation should allow controlling : the temperature of the breeding room, minimum and maximum flows of air, and temperature variations (range of ventilation).



**The program and instructions for ventilation must be validated with your technician** according to region, climate and time of year.

### ➤ The heating and cooling

#### ○ The heating

- \* Pre-heat the air in the room for air preparation so as not to get too cold air in the breeding room (minimum 7 / 8°C).
- \* Set up a heating system in the breeding room to reach 20°C during the period of kindling.

#### ○ The cooling

- \* Install a cooling system (pad cooling) at the outside air intakes.
- \* The panel surface must be adapted to the maximum power extraction. The temperature sensor to switch on the cooling system must be positioned in the room for air preparation 1 m above the ground.

### ➤ The light

- Allow 2 Watts / m<sup>2</sup> of floor space.
- The goal is to get 60 Lux at the level of animals.
- Maintain clean the protections of neon lights.



**The neon lights lose their brightness over time, provide a regular change.**



It is interesting to install a double circuit of illumination in order to turn on only 1 of 2 neon lights during the fattening period.

### ➤ The watering

- The system must allow easy access to water ad libitum in all cages for all animals.  
**Attention to the height of nipple drinkers in the kindling cages.**
- The water system must be easy to wash and clean.
- Each breeding room should have its independent water system.

- The water flow at **all nipple drinkers** should be between **100 and 200 ml / min.**
- In order to achieve treatments in the water, it is necessary to install a dosing pump or a water reserve for each breeding room.

➤ **The feeding system**

- For feeding, provide **at least 3 feed silos.**
- Provide a system to ration animals during the fattening period on the duration of access to feed and / or the amount of feed distributed (clock, automatic system).