

Airflow and Ventilation

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Circulation Volumes

- **1m³ air circulation/hour/kg mushrooms**
- **17.5m³ air circulation/hour/m² in first flush on Phase 3**
- **12m³/m² fresh air in first flush on Phase 3**

280m² room max demand

- approx 5000m³/hour air circulation
- approx 3300m³/hour fresh air
- size of fresh air intake 50cm.50cm
- single duct 60cm diameter

Filters , Heating and Cooling 280m²

- Coarse filter 60CM*60CM
- Heat exchanger 60CM*60CM
- Cooling exchanger 60CM*60CM

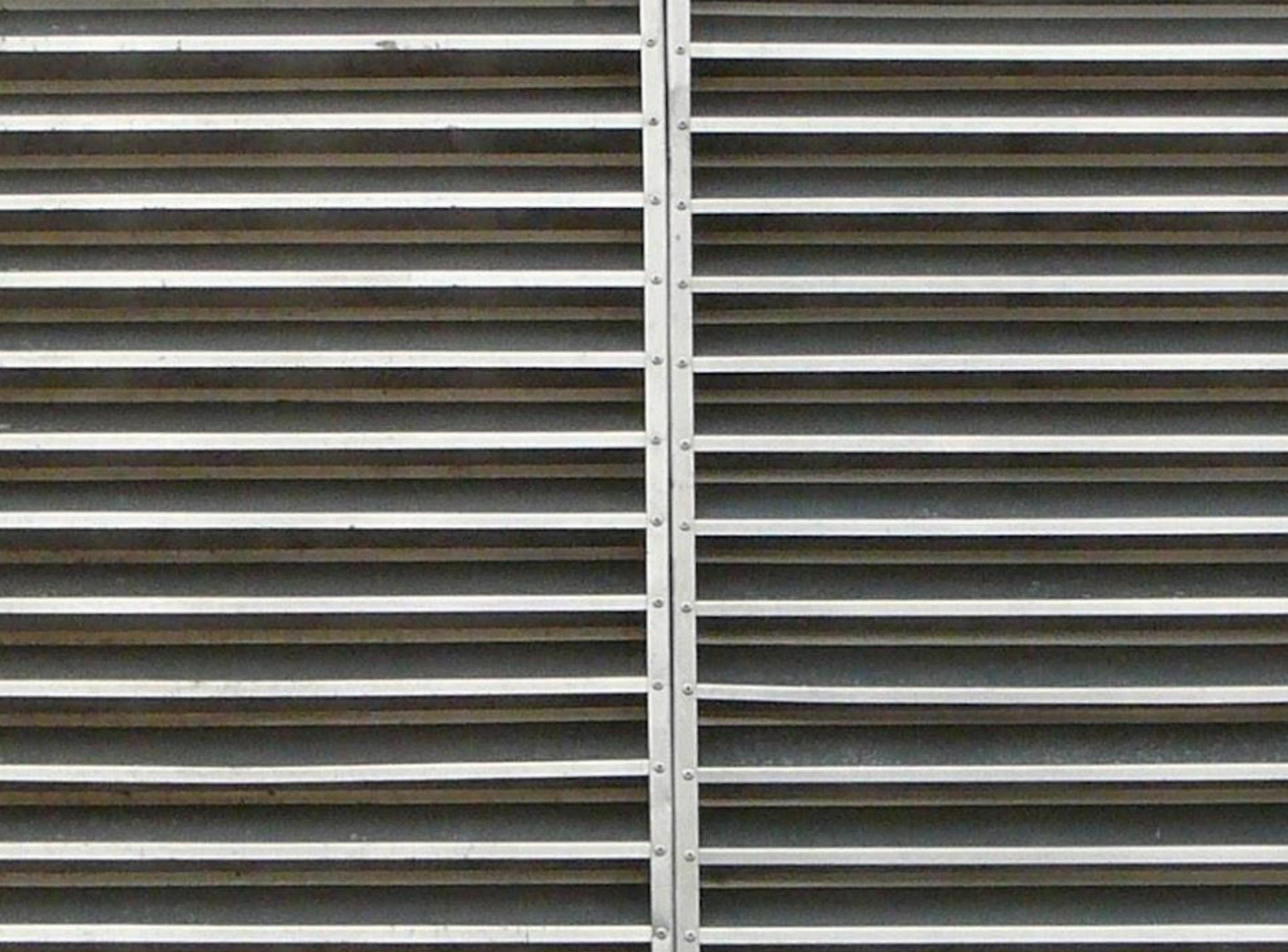


Fresh Air max demand

280m²

- 12m³ fresh air/hour/m²
- Approx 3400m³/hour
- Filter size 60cm* 60cm





Exhaust vents

- .4-.5 m²/100m²
- 280 m² room 1.1m²-1.4m²

Heating and Cooling Capacity

- Heating $.1\text{kw}/\text{m}^2$
- Cooling $.125\text{kw}/\text{m}^2$
- Central system 60% of total farm size
- 6 rooms of 280 m^2 approx 100 kw heating
- 6 rooms of 280 m^2 approx 125 kw cooling

Duct size

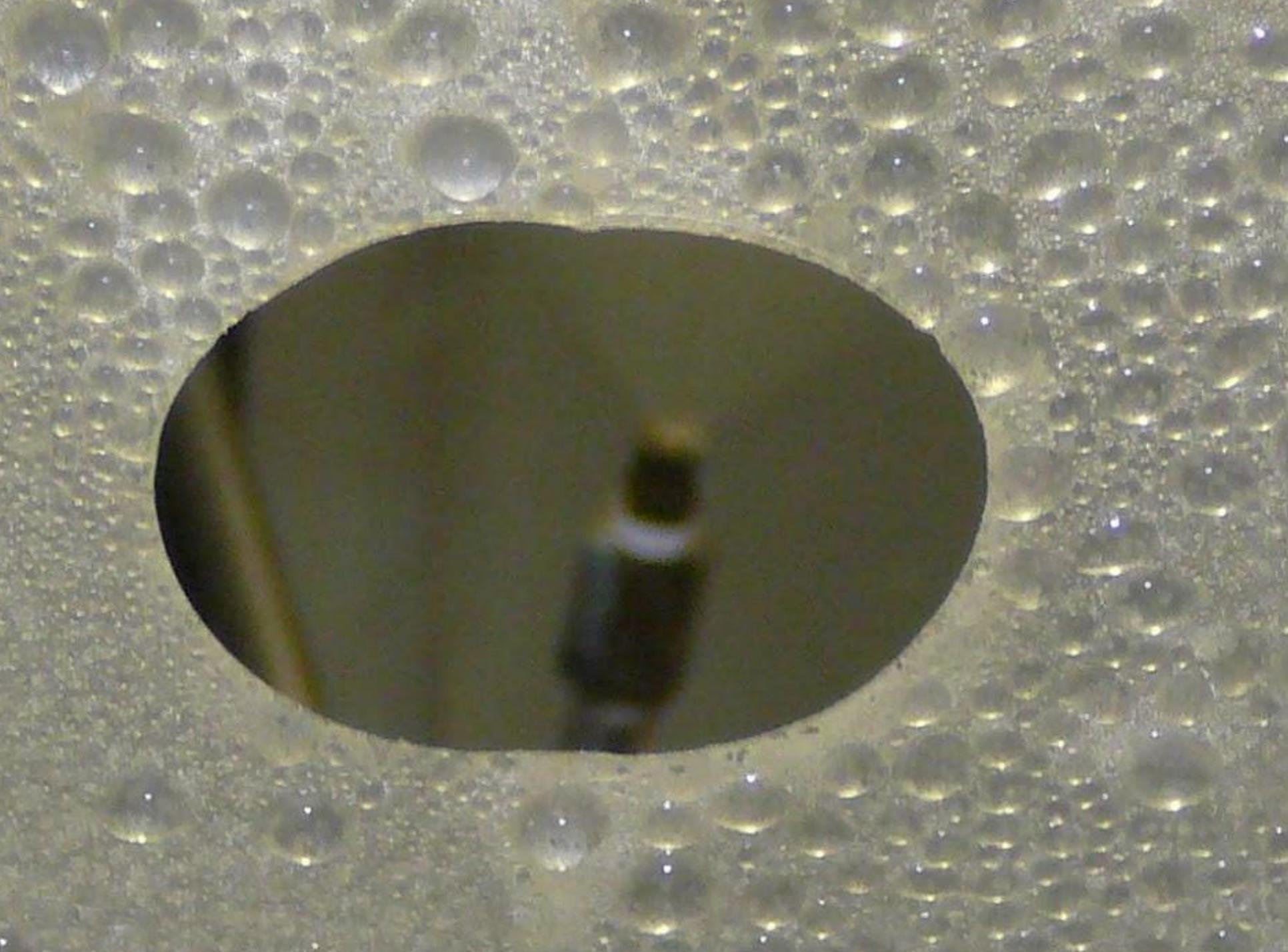
- **Bigger is better**
- **Air speed in duct max 4m/s**
- **280 m² room needs 660mm duct**
- **280 m² room needs 2* 440mm ducts**
- **Ratio of outlet holes/cross section .6**
- **660mm duct approx 105 holes of 50mm**

Airmovement

- **10-20 cm/s over the shelves**
- **Approx 9 seconds to cross a shelf**







Cookout

- **1 kg steam/hour/m²**
- **280 m² room needs 280kg steam/hour**

Humidification

- **Ideal supply air should be at 7g moisture/kg**
- **If outside air is at 3g moisture/kg
max demand on humidification is 16l
water/hour in a 280m² room**