

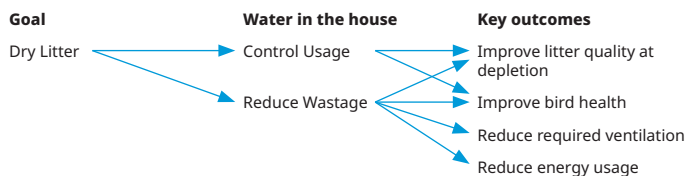


Litter management guide

Broiler production



Dry litter is the goal for all broiler producers. Wet litter can cause health problems in a flock, higher downgrades and culled birds at the processing plant. Wet litter can also be difficult to dispose of at the end of the batch.



The poultry specialists at SKOV have combined their industry experience to produce some key points to help producers manage and improve the litter quality:

1. Manage drinker equipment to avoid any unnecessary leakage in the house. Ensure all nipples, catch cups, regulators, supply lines, and pipes are in good condition prior to chick placement.
2. Ensure the nipples and any catch cups are suitable for broiler growing. A 360-degree nipple is best, especially for large broilers (>3 Kgs). The specification for nipples in the house is 12 birds per nipple for birds <3 Kgs, 9 birds per nipple for birds >3 Kgs, and 10 bell drinkers (40cm)/1000 birds post brooding.
3. Climatic conditions should also be considered when choosing birds per nipple in the house. In hot climates a range of 9-12 birds per nipple and in cold climates 12-16 birds per nipples should be considered.
4. Feeders, drinkers, heaters, and lighting should be evenly spread across the house. Short distances between lines can result in busy areas where birds do not want to rest as well as areas of high light intensity can cause bird migration. Both factors can cause wet and cold spots in the house.

5. Control the house environment to optimize bird comfort and distribution. Optimal bird comfort in warmer climates can be produced by using ventilation fans to cause a windchill effect. Monitor panting levels and bird distribution in the house to determine the best comfort environment for bird age. House conditions above the bird comfort level will affect water use in the house. See the example below:

| | |
|-------------------------|------------------------|
| Comfort level | 1.70 water&feed ratio |
| +5C above comfort level | 1.80 water&feed ratio |
| +10C comfort level | >2.00 water&feed ratio |

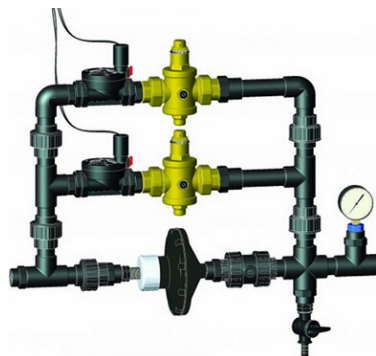
Note: in tropical areas, prolonged high temperatures can double water intake for age.

6. Water to feed ratio counts. An increased ratio can affect the litter condition due to excess wastage. See the example below:

| Water/ Feed ratio | Broilers | Bird Age | Ave Wt. | FCR | Total Water- L |
|-------------------|----------|----------|---------|-----|--|
| 1.7 | 30,000 | 40 | 2.5 | 1.7 | 216,750 |
| 1.9 | 30,000 | 40 | 2.5 Kgs | 1.7 | 242,250 |
| | | | | | An extra 25,500 L for the batch |

An extra 25,500 L represents approximately 1 large glass of water (400mls) per square meter, per day, for the life of the batch. To dry out this amount of extra water would take 5,000 liters of diesel oil or 5,000 kg propane gas.

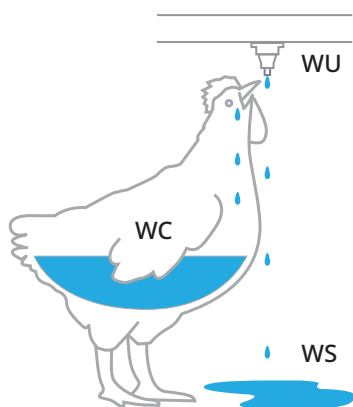
7. Consider using a dual regulator to supply birds a higher water pressure after peak feed intake, then dropping down to a lower pressure after the initial feed period. A dual regulator can be used when using a feed/light program.



8. Visually check the nipples daily and regularly test flow rates to determine correct operation for age. Incorrect flow rates and drinker height can impact on water intake and water wastage. See the recommended flow rates per nipple per minute below:

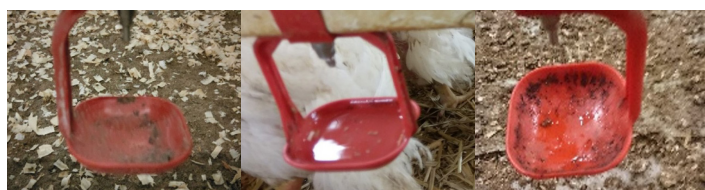
| Week | ml/min | ml/min (hot climates) |
|-----------|--------|-----------------------|
| 1 | 15 | 15 |
| 2 | 25 | 25 |
| 3 | 35 | 40 |
| 4 | 45 | 50 |
| 5 | 55 | 65 |
| 6 & older | 70 | 90 |

9. Daily drinker height adjustment is essential.



Water used (WU) = water consumption (WC) + water spillage (WS). Chicks should drink at the nipple at a 35 - 45-degree angle. Older birds should drink at a 75 - 85-degree angle.

10. Check the drip cups daily. If you see water in the cups, the pressure is too high (the nipple may be leaking). If you see a few drops of water, the drinker height and pressure is ok. If the cup is dry, the drinker line is too high, or the pressure is too low.



Too Dry

Too Wet

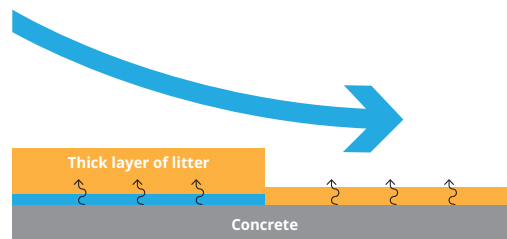
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The drinker line can be set slightly lower when using a catch cup under the nipple. The bell drinker lip should be set at the same level as the bird's back.

11. The recommended bedding type from European trials have shown that a mix of moss and wood shavings is the most effective type of bedding for moisture absorption.

12. Drying the house floor by preheating prior to litter placement will help to prevent condensation forming after bedding is placed. Floors should be preheated to 28-33°C before litter placement.

13. A bedding depth of 1-2 cm evenly spread across the house (avoiding cold spots from the floor) at chick placement is recommended. A thin layer of bedding ensures the floor is kept warm. A thick layer prevents condensation under the litter from drying out, insulates the floor causing a low floor temperature. Target a floor temperature of >30°C during the batch.



Sum-up - Key recommendations for litter management

- Ensure all drinker equipment is functioning properly prior to placement of the chicks
- Use the correct nipple type and number for the broilers in your house
- Adjust water pressure and drinker height for flock age
- Target a water/feed ratio of 1.7 for nipples with cups
- Consider using a dual regulator system to reduce avoidable water wastage
- Use moisture absorbing bedding at a depth of 1-2 cm at chick placement
- Ensure a well-balanced feed with high digestibility of protein and non-excessive salt levels is fed to the birds
- Use clean and sanitized water to help promote good intestinal health

House ventilation can help remove excess water in the house. However, proper control of water wastage from the nipples/bells is far more effective.

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