

Managing wet litter



Litter is a combination of fresh bedding material, chicken droppings, water, feed and feathers. It is an important component of a meat chicken's environment.

Litter absorbs moisture, mixes with fresh droppings, insulates and cushions the floor, supports a rich microbiome, and allows birds to display preferred behaviours. Maintaining litter requires proactive planning, management and care, especially moisture management.

Excess moisture in litter may increase risks associated with:

- ammonia production, including associated respiratory and eye conditions
- disease and food-safety pathogens
- odour production and impacts on neighbours
- breast blisters, skin burns and bruising.

Litter that is too dry can produce more dust, which may also negatively impact chicken respiratory health.

Wet litter management

If litter quality is reduced due to excessive moisture, specific management is needed to dry the litter. The main aims are to maintain litter in a friable state and avoid clumping and caking. Keeping litter friable allows chickens to work the litter easily. Chickens work the litter by breaking up the material and incorporating fresh droppings. This action moves the litter and brings trapped moisture to the surface. Ideally, litter should be 'dry and friable' or 'moist and friable', with moisture content between 15% and 25%.

Wet litter develops when the rate of water being added (e.g. droppings/excreta, spillage, condensation, leaks) exceeds the rate of removal through ventilation. Managing and maintaining drinkers, shed insulation, floor condition and building integrity are just as necessary as effective ventilation to control litter moisture.

This fact sheet was developed as part of the [Training and extension for the Australian chicken meat industry project \(PRJ-011920\)](#). This project supports the adoption of innovation and research and development outcomes for the Australian chicken meat industry.

To reduce the amount of moisture going onto the litter:

- adjust drinker heights and pressure to minimise spillage
- regularly inspect, clean/flush and maintain the drinker system
- ensure even bird density throughout the shed to avoid uneven manure and moisture loading
- maintain the shed and floor to prevent moisture entering from outside
- avoid cool surfaces in the shed where condensation can form, or take steps to prevent condensation from reaching the litter (e.g. maintain insulation and use condensation traps).

Even with good management, more water is added during a grow-out than the litter can absorb. Having a greater volume of litter or using more absorbent materials may slow down how quickly the litter becomes wet, which may help to slow or prevent cake forming. However, the litter will still need active management to remove any excess moisture.

Reducing the severity of litter wetness at critical times provides a greater window of opportunity to take corrective actions to dry the litter. The only way to make litter drier, other than replacing it or adding dry material, is to evaporate moisture from it.

Evaporating moisture from litter requires:

- **ventilation** with air that can absorb the moisture and remove it from the shed
- **moisture available** at the litter surface
- **heat**
- **air speed** at the litter surface.



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The following practices will contribute to maximising drying of wet litter, but the suitability of these practices will depend on weather conditions, stocking density, chicken age, litter conditions, litter properties and shed design:

- **Keep in-shed relative humidity below 60%** by preserving or adding heat, or increasing the ventilation rate to introduce more fresh, dry air.
- **Ensure static pressure and inlet vents are creating airflow patterns that warm incoming air and prevent cold air from settling on the litter.** A tight, well-sealed shed will make it easier to control incoming fresh air. Incoming air needs to be warmed by heat within the shed to reduce its relative humidity. This is normally achieved by directing incoming air along the ceiling because heat rises. Air velocity through vents is generated when there is sufficient static pressure (25 to 38 Pa is desirable).
- **Increase air speed at the litter surface.** It is difficult to increase air speed at the litter surface by using exhaust fans unless the shed can be operated in tunnel ventilation mode. An alternative may be to install a circulation fan system that can develop air speeds of 0.8 to 1.0 m/s at the litter surface by re-circulating air within the shed (re-circulation prevents excessive heat loss).
- **Start each grow-out with dry bedding and pre-heat the litter and floor before placing day-old chicks.** This may include heating the shed before spreading new bedding or turning the bedding several times during the heating period. Heating at brooding temperature (30 to 32 °C) may be required for two or three days to effectively heat the litter and floor. More heating time may be required if the bedding material starts out wet and needs to be dried. It may be more cost-effective to pre-heat the shed before placing chicks due to much lower ventilation requirements and therefore less heat loss from the shed.

- **Till/turn the litter.** Tilling the litter greatly increases the surface area for evaporation (especially if it breaks up cake). If the surface has dried, it will bring new moisture to the litter surface. The effect of tilling on evaporation decreases over a 24-hour period, so repeated tilling over several days may be needed to rapidly dry litter.

Summary

Maintaining good quality litter requires daily monitoring with corrective action as soon as litter starts getting damp or caked.

By controlling the internal shed environment and carefully managing and maintaining the shed and drinker systems, litter moisture can be managed in a way that ensures the best possible bird health and reduces risks.



More information

Download the [Best practice litter management manual for Australian meat chicken farms \(PDF, 3MB\)](#) or search the [online version](#).

Watch these short [chicken litter videos and animations](#).

Watch the [chicken litter webinar recordings](#).

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