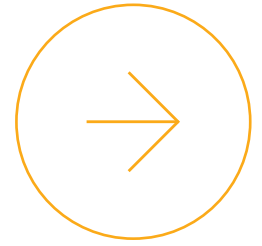


Reducing litter moisture under drinkers



Medium-flow drinker nipples

Replacing high-flow with medium-flow drinker nipples

Medium-flow drinkers have maximum flow rates of 80–100 millilitres per minute (mL/min), while high-flow drinkers tend to have flow rates greater than 100 mL/min.

High-flow drinkers have been the standard when growing meat chickens for decades due to:

- high stocking densities
- the need to ensure adequate water supply during hot weather
- an understanding that greater water intake increases feed consumption.

Changes in meat chicken rearing methods and technologies mean medium-flow drinkers are sufficient to meet the chickens' requirements due to:

- lower stocking densities (less demand for water per nipple)
- improved environmental control and management during hot conditions due to lower stocking densities, increased shed air speed, improved shed insulation and more effective cooling strategies.

Suitability of medium-flow drinkers will depend on grower preference, management style and existing infrastructure.

While reducing the flow by 20 mL/min (or needing higher line pressure to reach 100 mL/min) may not seem like much, it reduces spillage and increases the grower's control over drinker flow rates.

There may be some concern that reducing drinker flow rates might affect performance; however, a research study¹ has demonstrated that growth (up to 42 days old) was not affected, even with a maximum flow rate of 50 mL/min.

Water that exceeds what the chickens can consume each time they drink goes straight onto the litter. When this happens, additional litter treatment and ventilation setting measures are required to prevent poor litter quality.

Meat chicken growers are expected to maintain dry and friable litter throughout their sheds all year round. The litter under the drinkers is often where it starts to get damp and cakey because chickens spill a bit of water whenever they take a drink. The higher the flow rate of the drinkers, the more water is likely to be spilled. Some growers have found transitioning to medium-flow drinker nipples helps reduce wet litter under the drinker lines.

Grower's key findings

- High-flow drinker nipples were supplying too much water for chickens to drink.
- Trialled medium-flow nipples in two sheds before transitioning the whole farm.
- Transitioned from high to medium-flow nipples (100 to 80 mL/min).
- Litter conditions instantly improved.
- Chicken growth did not change with medium-flow nipples.

Michael, South Australian grower

Operating medium-flow nipples at a higher pressure can offer more control and reduces the effect of uneven drinker height or floor level (Figure 1). It also requires less regular pressure changes to meet but not exceed the chickens' requirements as they grow.



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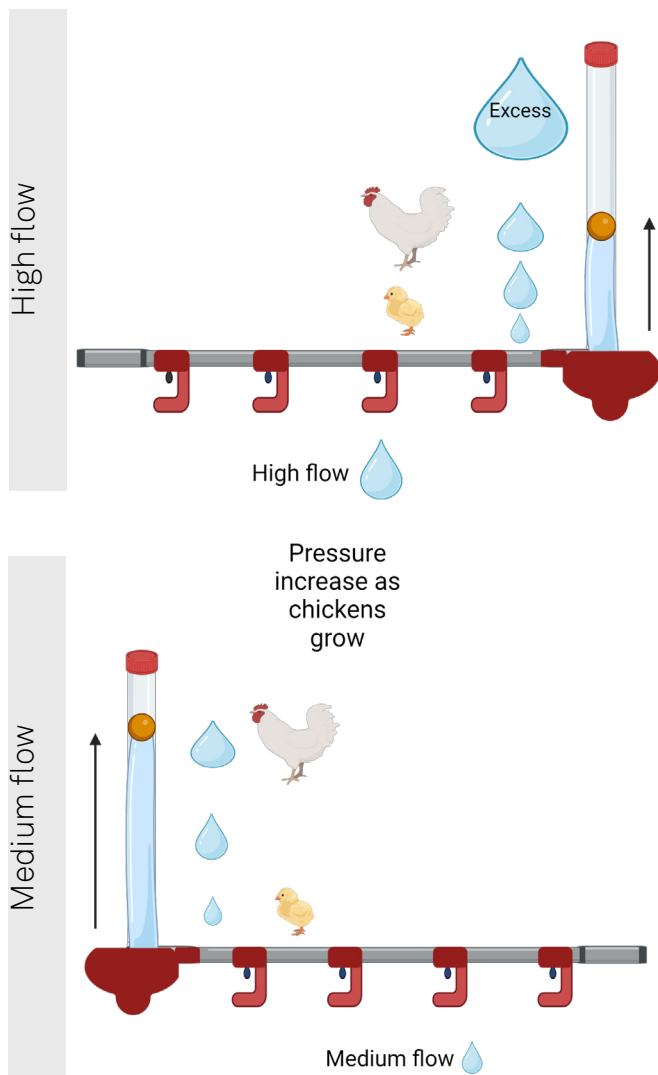


Figure 1. High-flow drinkers (top image) deliver a higher flow rate at lower pressure than medium-flow drinkers (bottom image). With high-flow drinkers, a small increase in pressure can deliver a big increase in water flow. This reduces the grower's control. Medium-flow drinkers give growers greater control over water pressure and flow rate—especially with young birds—and reduces the effect of uneven floors on drinker flow rates throughout the shed.

Images created with BioRender.com

Grower's experience

Harry has experience with both high and medium-flow drinkers across multiple farm sites. He has found the litter can stay dry and friable with high-flow drinker nipples, but they require very precise control and frequent adjustment based on close monitoring of litter conditions and drinker flow rates. At times when this level of focus can't be given, the litter under the drinkers can quickly become wet.

Changing to medium-flow nipples resulted in more consistently dry and friable litter. Medium-flow drinkers required fewer pressure adjustments and did not need such fine control to minimise spillage. Setting the pressure too high was less likely to result in an excess of water, as it did with high-flow drinkers.

Harry, Southeast Queensland grower

More resources

- Procedure for adjusting drinker line pressure based on litter conditions
- Procedure: How to measure drinker flow rate
- Aviagen: How to measure nipple drinker flow rates http://en.aviagen.com/assets/Tech_Center/BB_Resources_Tools/Broiler-Mgt/AVBR-Howto8-MeasureNippleDrinkerFlowRate-18.pdf
- Cobb broiler management guide, page 18 https://www.cobb-vantress.com/assets/Cobb-Files/4d0dd628b7/Broiler-Guide_English-2021-min.pdf

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