



IMPORTANCE OF WATER

- While dairy cow numbers have increased on some farms, drinking troughs in many cases have not.
- As a result, drinking trough size and/or poor flow rates are incapable of meeting the cows' water requirements.
- This is an issue on many dairy farms, with research showing that inadequate water intakes result in reduced feed intake, poor daily gain and feed conversion along with lower milk production.
- On warm days the cow's requirement for water dramatically increases, particularly after milking when she will consume 30-50% of her water intake.
- On a really hot day, cows can drink anywhere up to **110L/day** and they can typically drink at a rate of **13L/min** from a trough.



TROUGH CAPACITY

- Troughs which are too small for the required herd result in an inadequate water reserve, bullying at drinking and a drop in milk yield.
- Teagasc recommends 9L/cow (two gallons / cow); or, in order words, 1,350L (300 gallons) for 150 cows.
- Troughs should also be ideally located in the centre of the paddock to minimise the cows' walk for water and to avoid cows crowding at gaps – causing damage and delays when cows are exiting the paddock

Herd size	Volume required (litres)	Volume required (gallons)	Drinking space required (cm)
50	350	80	225
100	700	160	450
150	1050	240	675
200	1400	320	900
250	1750	400	1125
300	2100	480	1350

Figure 1. Water trough volume and drinking space required for various herd sizes

FLOW RATE

- The volume of water required by cows varies with weather conditions and milk production. Typical volumes range from **60 - 110 litres a day** or **4 litres of water/litre of milk produced**.
- This volume is not spread evenly throughout the day but tends to be concentrated in a three hour period after evening milking
- Flow rate must be capable of supplying this peak in demand. If we assume a daily demand of 80 litres/cow and that half this volume needs to be consumed in a three hour period, then an hourly flow rate of 13 litres/cow/hour is required (i.e. $80 \times 50\% / 3 = 13$ litres/cow/hour)

Herd size	Litres required/hour	Litres required/minute
50	650	11
100	1300	22
150	1950	33
200	2600	44
250	3250	55
300	3900	66

Figure 2. Water flow-rate required for various herd sizes

HOW TO CHECK FLOW RATE?

1. Mark the level of water in a trough
2. Tie up the ballcock and empty, say, 25 litres from the trough
3. Release the ballcock, hold it down and measure the time it takes (in minutes) to refill to the original mark
4. Divide the 25 litres by the time taken to refill, e.g. if it takes a minute to refill then the flow rate is 25 litres/minute ($25/1 = 25$)
5. If the flow rate measured is less than that required for your herd, then your water supply system needs to be improved. Check the flow rate of troughs around the farm.

Wide range of water troughs, fittings and pipes are available in Retail Stores!