

# Smart Water Use in the Farm Dairy

## Worksheet to estimate water use in the farm dairy



Metering water use in the farm dairy is the best and most accurate way to track water consumption over time. In the absence of meters, you can use this form to record all your water uses, then do the calculation to *estimate* total use.

Measure...	Record...
<p><b>A. Milk cooling</b></p> <p>Measure exit flow during milking: Time how long it takes to fill a 200 litre drum and use it to gauge the flow rate (in litres/min). Determine total milking time for the day.</p>	<p>Water use A = _____ l/min (flow)            x _____ minutes milking time            = _____ litres</p>
<p><b>B. Plant/vat wash</b></p> <p>Wash tubs and hot water cylinders use set amounts of water. Refer to washing routine instructions supplied by the detergent companies</p>	<p>B = _____ litres</p>
<p><b>C. Yard wash down</b></p> <p>To do a bulk tank calculation, follow these steps.</p> <ul style="list-style-type: none"> <li>• Turn off any automatic tank refilling from source water during measurement (milking).</li> <li>• Turn off stock water tap during measurement period if it draws off this tank.</li> <li>• Turn off connections to other tanks.</li> </ul> <p><b>Measure amount of water drawn off during the whole milking time</b> (Remove the lid and use a stick to measure the difference in cm between 'start' and 'finish' water levels.) Divide this by 10 cm (for 25,000 L tank) or 9 cm (for 30,000 L tank) to approximate water volume in m<sup>3</sup>. Multiply by 1,000 to convert to litres. This amount is the "change"</p> <p>For <b>single tanks</b>: C = "change" minus B</p> <p>For <b>multiple tanks</b> (tank for yard wash down): If there is more water in the tank at finish due to refill from milk cooler greater than use, then C = A minus "change". If less water in the tank, C = A plus "change". If you run out of water for yard wash, refill the tank to provide the water needed to finish. Measure the flow rate x amount of time to refill and call this volume "E". In this case, C = A + "change" + E.</p>	<p>C = _____ litres</p> <p><i>Note: For tanks other than 25,000 or 30,000 litres, divide 1,000 by 3.14 x r<sup>2</sup> (i.e. radius of the tank squared) to determine the "volume/height" per cubic meter.</i></p>
<p><b>D. Other water uses</b></p> <p>These uses of water are captured under C (bulk tank calculation) above. If you are interested in quantifying this water consumption, use appropriate procedures (measure water flow rate, etc). This can include skirt and cluster wash in rotaries, for example, and use of dairy shed water outside of milking activities.</p>	<p><i>Note: For estimating purposes, D (other water uses) is included in the C calculation above.</i></p>
Calculate...	
<p><b>If you use milk cooling water for yard wash</b></p> <p>B + C Water use per milking            _____ + _____ = _____ litres ÷ 1,000 = _____ m<sup>3</sup></p> <p><b>If you do not use milk cooling water for yard wash</b></p> <p>A + B + C Water use per milking            _____ + _____ + _____ = _____ litres ÷ 1,000 = _____ m<sup>3</sup></p>	<p><b>Total water use for twice-a-day milking</b></p> <p>_____ m<sup>3</sup>/milking x 2 = _____ m<sup>3</sup></p>