

F4 | WATER MEDICATOR CALIBRATION

The following is a simple technique for calibrating an in-line water medicator, regardless of type. This should be done at least twice per year so that water medications given to pigs are at the right concentration for the right duration of time.

Under-medicating may not result in an effective treatment; over-medicating is costly and might extend the withdrawal period beyond the recommendation on the product's label; and both can be detrimental to the health of the pigs under treatment. The manufacturer's directions are for a specific dilution of stock solution for a given time period, and this amount should be delivered by your device for the time period indicated.

THERE ARE A FEW SIMPLE PIECES OF EQUIPMENT THAT YOU WILL NEED:

- a one-litre (1,000 mL) graduated measuring cup
- a 20-litre pail or larger, with a line to mark 20 L
- tools to detach the exit line from the medicator (if it is not already plumbed with a valve and bypass).



INSTRUCTIONS FOR CALIBRATING THE MEDICATOR:

1. Shut off the incoming water to the medicator.
2. Detach the EXIT line of the medicator from the water lines.
3. Fill the measuring cup precisely to the one-litre mark with clean water.
4. Put the pick-up tube for the medicator into the full measuring cup.
5. Direct the exit line of the medicator into the empty, 20-litre pail.
6. Turn on the water line to the medicator.
7. Ensure the medicator is working (it should be clicking).
8. Allow precisely 20 L of water to fill the pail (slow the water flow when approaching the 20-litre mark).
9. Turn off the incoming water.
10. Now for the math:
 - a. Determine the volume of water remaining in the 1-litre measuring cup.
 - b. Subtract this volume from 1,000 mL to determine the amount of “stock solution” that your medicator injected into 20 L.
 - c. Divide this into 20 L (20,000 mL) to calculate the final dilution rate.

EXAMPLE 1

798 mL left in the 1-litre (1,000 mL) measuring cup when the 20-litre pail is full

- $1000 \text{ mL} - 798 \text{ mL} = 202 \text{ mL}$
- $20,000 \text{ mL (20 L)} \div 202 \text{ mL} = 99.0$

Thus, this medicator is delivering a 1:99 (approx. 1:100) ratio of stock solution to water.

EXAMPLE 2

840 mL left in the measuring cup when 20-litre pail is full

- 1,000 mL minus 840 mL = 160 mL
- 20,000 mL (20 L) ÷ 160 mL = 1:125 (approx. 1:128) ratio of stock solution to water.



You should do this process at least twice, and average the results.

Most water medicators are set at ratios of 1:100 or 1:128. If your medicator is delivering a significantly different amount of stock solution than it is supposed to, there are options.

1. Replace the medicator.
2. Try cleaning and recalibrating the medicator.
3. Adjust the stock solution to account for the difference.