

PolySeed®

Technical Report

BOD Bottle Sizes

Question:

We prepare dilutions of 500 mL in a graduated cylinder and the sample is then decanted into incubation bottles. Is the size of the incubation bottle critical? We prefer to use the smaller bottles than the specified 300 mL size.

Answer:

Smaller bottles are satisfactory, provided that there is enough room for a DO probe to be seated inside the bottle. There has been some concern voiced over the effect of the internal surface area-to-volume ratio on BOD tests, the idea being that increased surface area can provide more anchorage for sessile organisms with subsequent creation of floc mats and greater chance for surface absorption of organics in the sample.

An optimum ratio of 0.7 cm²/mL has been proposed (Duftarkova, 1972); however, a 500mL reagent bottle is needed to meet this ratio.

The fact that the dilutions were prepared in larger vessels diminishes concern about measuring inappropriately small sample aliquots into a smaller bottle.

- *Third Century of Biological Oxygen Demand*