Materials List for:

Estimating Sediment Denitrification Rates Using Cores and N_2O Microsensors

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Materials

Name	Company	Catalog Number	Comments
Messenger-adapted gravity corer	-	-	Reference in the manuscript. Made by Glew, J.
Sampling tube	-	-	Acrylic. Dimensions: 100 cm (h) × 6.35 cm (d) × 6.50 cm (D). Sharpen the edge of the sampling tube that penetrates into the sediment to minimize the disturbance in the recovered sediment core sample.
Handheld sounder	Plastimo	38074	Echotest II Depth Sounder.
Rubber stopper	VWR	DENE1012114	With two holes, used to mix the N_2O-water in the calibration chamber. Dimensions: 20 mm (h) × 14 mm (d) × 18 mm (D) (3 mm hole (D)).
Rubber stopper	VWR	217-0125	To seal the bottom part of the methacrylate tube and to sample in shallow water bodies. Dimensions: 45 mm (h) × 56 mm (d) × 65 mm (D).
Rubber stopper	VWR	217-0126	Place the rubber stopper in the top side of the sampling tube to obtain a vacuum for sampling in littoral zones and shallow water bodies. Dimensions: 50 mm (h) x 60 mm (d) x 70 mm (D).
PVC cover	-	-	To seal the top side part of the acrylic tube. Dimensions: 45 mm (h) × 56 mm (d) × 65 mm (D). Dimensions: 65 mm (D).
Adhesive tape	-	-	Waterproof. To ensure all joints (PVC cover sampling tube and PVC cover sensor) and to avoid water leaks.
Thermometer	-	-	Portable and waterproof, to measure the temperature in the water overlying the sediment just after sampling the cores.
GPS	-	-	To save the location of a new sampling site or to arrive at a previous site.
Wader	-	-	For littoral or shallow site samplings.

Boat	-	-	An inflatable boat is the best option for its lightness if the sampling site is not accessible by car.
Rope	-	-	Rope with marks showing its length (e.g., marked with a color code to distinguish each meter).
N_2O gas bottle and pressure reducer	Abelló Linde	32768-100	Gas bottle reference.
C_2H_2 gas bottle and pressure reducer	Abelló Linde	32468-100	Gas bottle reference.
Tube used to evacuate the excess of water	-	-	Consists of a solid part (e.g., a 5 ml pipette tip without its narrowest end) inserted in a silicone tube.
Nitrous Oxide Minisensor w/ Cap	Unisense	N2O-R	We use 4 sensors at a time.
Microsensor multimeter 4 Ch. 4 pA channels	Unisense	Multimeter	Picoammeter logged to a laptop. The standard device allows for 2 sensor picoammeter connections (e.g., N_2O sensor), one pH/mV and a thermometer. We ordered a device with four picoammeter connections, allowing the use of 4 N_2O sensors simultaneously.
SensorTrace Basic 3.0 Windows software	Unisense		Sensor data acquisition software.
Calibration Chamber incl. pump	Unisense	CAL300	Calibration chamber. We tuned it with rubber stoppers and syringes to mix the N_2O-water without making bubbles.
Incubation chamber	Ibercex	E-600-BV	Indispensable equipment for working at a constant temperature (±0.3 °C). It also allows control of the photoperiod.
Electric stirrer	-	-	Part of the stirring system. It hangs in the water, overlying the sediment subject, by a fishing line that is hooked to the PVC cover.
Electromagnet	-	-	Part of the stirring system. It is fixed to the outside of the acrylic tube, approximately at the same level as the stirrer. It is activated episodically (ca. 1 on-off per s) by a circuit, attracting the stirrer when it is on and releasing it when it is off, thereby generating the movement that agitates the water.
Electromagnetic pulse circuit	-	-	Part of the stirring system. It is connected by wires to the electromagnet and sends pulses of current that turn the electromagnet on and off.
Uninterruptible power supply (UPS)	-	-	It improves the quality of the electrical energy that reaches the measurement device, filtering the highs and low of the voltage, thereby ensuring a more constant and stable N_2O sensor signal.