The method to measure one side surface area of the seaweed

XU MIN

Abstract

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Protocol

Collect seaweed samples from the field

Step 1.

During each survey, scuba divers randomly sampled *ca*. 20–40 *S*. *horneri*.

Keep the samples in -30℃

Step 2.

Thalli collected by the divers were numbered individually and transported to a laboratory where the weight of each of them were determined. Samples were kept at −30°C until analysis.

Measure the weight of the samples

Step 3.

We used a balance (CR-5000WP, Custom) to determine wet weights of the thalli (±2 g) after absorbing surface water with a paper towel.

Measure one side surface area of the samples

Step 4.

One-sided surface area was measured using ImageJ 6.4 software (National Institutes of Health, Bethesda, MD, USA; http://imagej.nih.gov/ij) by converting the pixels corresponding to the thallus on a digital photograph with a 30-cm ruler scaled to an area using a calibration equation obtained from the square of a known area (5 × 5 cm). We prepared five photographs of each individual that were connected horizontally using image processing software (Photoshop CS; Adobe Systems Inc., San Jose, CA, USA). The mean of the five calculated areas was used as the one-sided surface area of a thallus.