Turner Trilogy Fluorometer Calibration for Acidification Method

Materials needed:

- ☐ Trilogy Fluorometer
- ☐ Chlorophyll a Acidification Module
- ☐ 12 x 75 mm round bottom glass test tubes
- ☐ 12 mm round vial adaptor
- ☐ Liquid Chlorophyll a Standard
- ☐ 90% acetone solution
- ☐ 0.1 N HCl
- ☐ something to transfer acetone solution to test tube:_Nickols Lab 1000 uL pipet__
- ☐ something to transfer 0.1 N HCl solution to test tube:__Nickols Lab 100 uL pipet_____

Procedure:

1. Lift fluorometer lid.
2. Snap in Chlorophyll a Acidification Module.
3. Insert the 12 mm round vial adaptor into the module.
4. Close the lid and turn on the fluorometer.
5. Press the “Chl-A” button on the touch screen to choose the acidification module.
6. Press “OK” after confirming the correct module is snapped in to go to the home screen.
7. From the home screen choose the “Calibrate” button.
8. Select “Run New Calibration” and choose “µg/L”.
9. Insert a 90% acetone blank solution and press “OK”. Wait for measuring to complete.
10. Remove the blank and insert the Liquid Chlorophyll a Standard.
11. Enter the concentration using the keypad on the touch screen and press “OK”.
12. Press “OK” to measure before acidification. Wait for measuring to complete.
13. Acidify the standard by adding 0.03 mL (30 µl) of 0.1 N HCl for every mL of standard, wait 90 seconds while gently inverting the vial about 10 times and insert into the instrument.
14. Press “OK” to measure after acidification. Wait for measuring to complete.
15. Acid Ratio will be displayed on the screen, press “OK” to proceed. Note: An acceptable acid ratio is > 1.7; An optimal acid ratio is 1.9 - 2.0.

    If acid ratio is < 1.7, do one of three steps:

    a. Remake the standard concentration used in the calibration
    b. Use a higher standard concentration in the calibration (up to 5 µg/L)
    c. Obtain a new parent standard to remake standard concentration in the calibration
16. Save the calibration.
17. Before using the fluorometer, recalibrate if the temperature in the room has fluctuated by 3 C since the last calibration.