

<Marine Organism Rearing Log>

9 AM, October 27, 2023

Weather: Sunny

Water temperature: 18.5°C

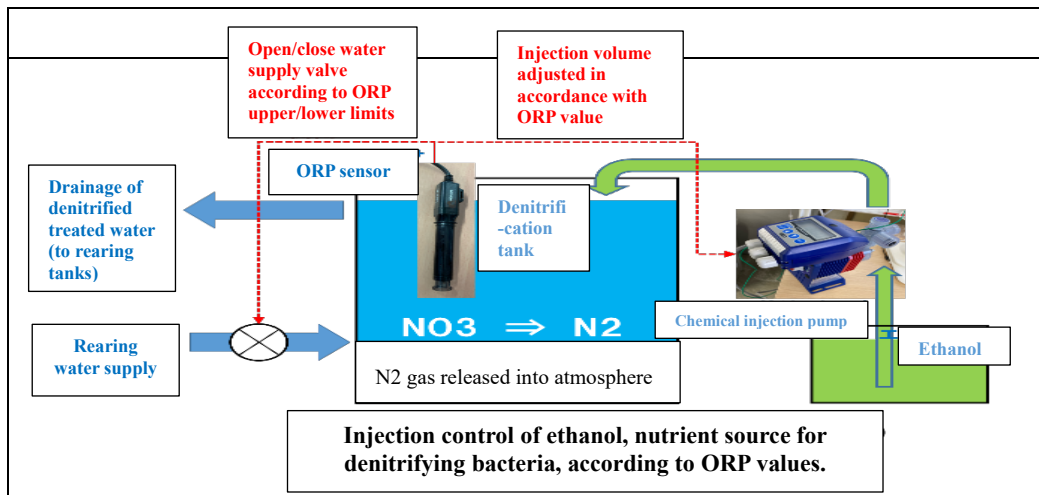
There are some problems with fibrous organic matter currently used as a nutrient source for denitrifying bacteria, such as unstable leaching. Therefore, we are considering changing nutrient sources upon purchasing a pump that can variably inject liquid ethanol in conjunction with ORP (oxidation-reduction potential) values.

<Next report will be October 30>

Difference between denitrifying and nitrifying bacteria

	Function	Suitable conditions	Bacteria type
Nitrate Forming Bacteria	Convert ammonia to nitric acid	Work in oxygen-rich conditions	Autotrophic bacteria (do not require organic matter)
Denitrifying Bacteria	Convert nitric acid to nitrogen gas and discharged outside the system	Work in low-oxygen conditions (ORP* value: -200 to -300 mV)	Heterotrophic bacteria (organic matter = nutrient source must be added)

***Oxidation Reduction**



The number of dead abalone / removed for research

	No. of dead abalone		Removed for research	
	10/20-10/26 (No.)	Survival Rate (% accumulated)	10/20-10/26 (No.)	Accumulated (No.)
Regular seawater ①	1	52.9	0	0
Regular seawater ②	1	43.9	0	0
ALPS water added ①	0	51.0	0	0
ALPS water added ②	2	44.3	0	1

* No flounder deaths

* For accuracy, counted from Friday of the previous week to Thursday