

Deodorant Effect of Euglena on Ammonia

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BACKGROUND

These days, paramylon is receiving public attention. It is contained only in the euglena which has both features that vegetables and animals have. The structure of this substance is similar to activated charcoal, which is often used as a deodorant and has a lot of holes on its surface.

For this reason, we predicted that the powdered dried euglena, which has paramylon, has a deodorant effect and we did the following experiments.

HYPOTHESIS

The euglena gracilis which contains paramylon has deodorizing effects.

EXPERIMENT

PREPARATION 1

The culture of *E.gracilis*

We diluted 1g of fine powder hyponex with 1L of mineral water (Volvic), added the *E.gracilis*, and left it for 18 days.



Before culture



After culture

PREPARATION 2

Drying the Euglena water

We heated and evaporated the *E.gracilis* water in a 1 ℓ beaker in three parts.

We mashed the remaining *E.gracilis* with a mortar to expose the paramylon by breaking the cell membrane of *E.gracilis*.



MAIN EXPERIMENT

To examine if *E.gracilis* has a deodorant effect

Firstly, we mixed 28% ammonia water with tap water in a ratio of 1 to 1 and made low-concentration ammonia water. In addition, we put the liquid in a test tube with a rubber stopper with a tube and heated it with a gas burner to evaporate the ammonia water.

We inserted the tube into an ammonia container in which the sample had been placed. We aspirated 100 ml of gas in the container with a gas detector tube and a gas sampling machine to check the ammonia concentration in it. After collection, we sealed the container and left for 25 hours. 25 hours later, we checked the concentration of ammonia and compared it with the initial concentration.



< Sample to put in a container >

- ① Dried *E.gracilis* 0.22g (With Hyponex)
- ② Only Hyponex 0.22g
- ③ No sample

RESULT

	Initial Concentration	25 hour later
①	150	0
②	140	0
③	48	15

(The unit is ppm)

CONSIDERATION

According to the result of the experiment, we didn't know whether the *E.gracilis* absorbed the ammonia, since Hyponex reduced the concentration of the ammonia. Two possibilities are conceivable for this. First, the ammonia and the phosphate contained in Hyponex reacted. Second, the nitrate nitrogen contained in Hyponex broke down the ammonia. In future experiments, we should cultivate the *E.gracilis* without Hyponex.

BIBLIOGRAPHY

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