Water quality survey in Ashigaike



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1. Motive

We are interested in the prior research (Water quality survey in the Tomb of Emperor Nintoku) and inherited it because we are disappointed that the burial mound of Nintoku-tenno-ryo Kofun, close to our Mikunigaoka High School, is dirty. Therefore, we would like to investigate the differences of water quality between Nintoku-tenno-ryo Kofun and Asigaike, the pond that flows into the moat, the problem of prior research.

2. Purpose

We measure the difference by survey and experiment and find what is the main cause for the pollution. Finally, we will improve water quality.

3. Method

We carried out surveys at Nintoku-tenno-ryo Kofun and Asigaike at field and school about every three weeks.

weather •temperature •water temperature •depth •clearness at field
COD(chemical oxygen demand) •chlorophyll a •electric conduction
•pH at school

4. Survey Consideration

- The values of COD at Nintoku-tenno-ryo Kofun and at Asigaike both exceed environmental quality standard.
- The COD at the 3rd moat is higher than that at Ashigaike.

 \rightarrow Even though the water is already dirty at Ashigaike, after running into the 3rd moat it becomes much dirtier.

- The figures of 3rd moat and Asigaike are alike.
- \rightarrow Ashigaike has a strong effect on the 3rd moat.
- The correlation between COD and chlorophyll a of Ashigaike is strong, but Nintoku-tenno-ryo Kofun weak.

 \rightarrow The primal cause for the pollution in Ashigaike is phytoplankton.On the other hand, in Nintoku-tenno-ryo Kofun, there are other some factors related to it.

5. Measurement of the quantity of nitrogen

① Method

We used ultraviolet absorption spectrophotometry for analyses. We prepared two samples: filtered out and not, and examined the amount of dissolved nitrogen and suspension nitrogen.

- 2 Result
- There is more dissolved nitrogen in Ashigaike than in the 3rd moat. Meanwhile, in the 3rd moat, there is more suspension nitrogen than in Ashigaike.
- \rightarrow Phytoplankton may absorb dissolved nitrogen water flowing into the 3rd moat from Ashigaike.
- You can see a correlation between suspension nitrogen and chlorophyll a.

6. Conclusion • Future problem

Phytoplankton chiefly contaminates water to some extent at the point in Ashigaike. Moreover, a large amount of nitrogen causes water bloom to occur many times. Thus, if we reduce it there, we may suppress outbreak of water bloom. Therefore, our next goal is to make a new way to purify water using floating weed such as water hyacinth or reed.





7. Reference

Prior research "Water quality survey in the Tomb of Emperor Nintoku"