Survey study of biota which are formed in the treated wastewater

Whole term	1997. 6 - 2000.3	

(Purpose)

Along with the spread of sewerage, quantitative rate of discharge of treated wastewater in water areas is increasing. However, the reality of ecosystem formed in the water environment, whose major water source is treated wastewater, has not been fully known yet.

Since treated wastewater have significant impact on the ecosystem of discharge water areas, consideration of impacts to ecosystem by sewerage enterprise is required.

This survey has been performed, since 1997, in Kuroda River and Nijikka waterway which are discharge places of treated wastewater from Nagisa treatment plant on the left-bank river-basin sewerage of Yodo River. In this year, the discharge places of treated wastewater have changed from Kuroda River to Nijikka waterway. So the results of biota survey carried out in Kuroda River and Nijikka waterway until last fiscal year were organized. Moreover, changes of biota by the change of discharge places of treated wastewater were organized and the effects of treated wastewater to biota were discussed.

(Results)

(1) Change of biota by discharging and without discharging of treated wastewater

In Kuroda River, before stopping the discharging of treated wastewater the dominant species of attached algae were blue-green algae and green algae, but after stopping discharging the dominant species of attached algae were diatoms. In Nijikka waterway, before the discharging was stopped the dominant species of attached algae were blue-green algae, but after stopping discharging the dominant species of attached algae were diatoms.

From that result, it was indicated that the constitution of algae species had changed in several months by the influence of treated wastewater. However in Kuroda River and Nijikka waterway, the relationship between existence or nonexistence of treated wastewater and the dominant species was opposite. So it was inferred that the constitution of biological communities was not necessarily determined by the involvement of treated wastewater.

With regard to benthos, clear-out tendency was not confirmed in both Kuroda River and Nijikka waterway.

(2) Change of biota by confluence of treated wastewater

It was discussed by the changes of attached algae and benthos in Kuroda River in the period treated wastewater was discharged. Before and after the confluence of treated wastewater, diversity index did not change that much but the constitution of biological communities of attached algae changed considerably. So it was felt that the adoption of indicators that can reflect both constitution of biological communities and diversity were needed.

(Future tasks)

With regard to both attached algae and benthos, the survey results were for only less than half year after the status of treated wastewater has changed. So there is a possibility that the results did not reflect the influence of discharged water totally, so more changes in the results in future is possible. Besides, the discharge of treated wastewater is long-term and constant, in order to analyze the influence of it and to predict the influence of new discharge of treated wastewater to existing water area, a lot of basic data would be required.

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