

**B407**      Transportation pattern of turbid storm runoff in Lake Soyang

김윤희\* · 김형봉 · 남궁현 · 박동균 · 김범철  
(강원대학교 환경학과)

We investigated transportation pattern and thickness of turbid storm runoff coming into a deep reservoir, Lake Soyang. Vertical profiles of temperature, turbidity and total suspended solids concentration were measured at nine stations from dam to plunge point in summer of 1996 and 1999. Turbidity was much higher(2~78NTU in 1996, 1~155NTU in 1999) in the rainy seasons than in the dry seasons(1-3NTU in 1996 and 1999). Storm turbid flow were vertically mixed until it reach plunge point, where it dived into deeper layer. After the turbid water passed the plunge point, it flowed into metalimnion along the layer of same density. The altitude of turbid metalimnion was 130~160m in 1996, and 120~180m in 1999. Volume of turbid water in mid August was  $7.3 \times 10^8$  tons in 1996 and  $16.9 \times 10^8$  tons in 1999 when showed greater inflow and rainfall compared with 1996. Thickness of turbid water was influenced both by rainfall patterns and discharge of the dam.

**B408**      Temporal and Spatial Distribution of Primary Productivity of Size-Fractionated Phytoplankton in Lake Kizaki, Japan.

김범철<sup>1)</sup>, 김철구\*, Hideshige Toda<sup>3)</sup>, Takeo Hama<sup>4)</sup>  
강원대학교 환경학과<sup>1)</sup>, 한국수자원공사 수자원연구소\*,  
일본 신슈대학교 물질순환학과<sup>3)</sup>, 일본 쓰쿠바대학교 환경과학대학원<sup>4)</sup>

Primary productivity was measured by using  $^{13}\text{C}$  tracer method from March 1998 to June 1998 in Lake Kizaki, Japan. Plankton was divided into two size groups.  $<150 \mu\text{m}$  and  $<20 \mu\text{m}$ . Photosynthetic activities were measured at the depth of about 100, 50, 25, 5, 1% of surface irradiance. The highest maximum primary productivity( $P_{\text{max}}$ ,  $46.17 \mu\text{gC}/\ell/\text{hr}$ ) and specific production rate(SPR,  $26.446 \text{ mgC}/\text{gC}/\text{hr}$ ) of  $<150 \mu\text{m}$  phytoplankton(LP) were observed on 29 June. In the case of  $<20 \mu\text{m}$  phytoplankton(SP), the highest  $P_{\text{max}}$ ( $6.56 \mu\text{gC}/\ell/\text{hr}$ ) was observed on 9 May, though the highest SPR( $17.9 \text{ mgC}/\text{gC}/\text{hr}$ ) was observed on 29 June. The standing crop of LP increased steadily during survey period from March toward June, but SP didn't. LP was relatively higher in the surface water(100-25% of surface irradiance), whereas SP was relatively higher in lower irradiance layer(25-1% of surface irradiance). It could be concluded that size-fractionated phytoplankton has different temporal and spatial variability in both the SPR and biomass.