

# Kandungan Logam Berat Timbal (Pb) dan Seng (Zn) pada Sedimen dan Keong Emas *Pomacea Canaliculata* (Lamarck, 1828) di Sawah Blanakan, Subang, Jawa Barat = Heavy Metals Contents of Lead (Pb) and Zinc (Zn) within The Sediment and Golden Apple Snails *Pomacea Canaliculata* (Lamarck, 1828) in The Paddy Fields of Blanakan, Subang, West Java

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## Abstrak

Blanakan memiliki area persawahan yang luas yang berdekatan dengan pemukiman penduduk serta mendapatkan air irigasi dari sungai Blanakan. Keberadaan keong emas (*Pomacea canaliculata*) sebagai hewan invasif di area sawah dimanfaatkan sebagai bahan pangan serta bahan pakan ternak oleh masyarakat sekitar. Penelitian ini bertujuan untuk menentukan kandungan logam berat timbal (Pb) dan seng (Zn) pada sedimen sawah dan keong emas di sawah Blanakan, Subang Jawa Barat, serta mengetahui nilai Bioconcentration Factor (BCF) logam berat Pb dan Zn pada keong emas. Sampel sedimen sawah dan keong emas diambil dari tiga stasiun penelitian menggunakan purposive sampling dengan tiga kali pengulangan di setiap stasiun. Sampel keong emas diambil sebanyak 5 individu di setiap titik sampling dengan ukuran cangkang 4-7 cm. Preparasi sampel sedimen sawah dilakukan dengan cara pengeringan menggunakan oven, sedangkan sampel keong emas diambil bagian dalam cangkang dan dipisahkan dengan operculum keong. Preparasi lebih lanjut di Laboratorium SIG dan Laboratorium UI Chem sebelum dilakukan analisis logam Pb dengan metode ICP dan logam Zn dengan metode AAS. Hasil penelitian menunjukkan kandungan logam timbal dan seng pada sedimen sawah di Blanakan berkisar di rentang 4,35 – 8,14 ppm dan 10,32 – 23,51 ppm. Pada sampel keong emas terkandung logam Pb dan Zn yang berkisar di rentang 0,085 – 0,135 ppm dan 9,42 – 58,82 ppm. Berdasarkan perhitungan nilai BCF, keong emas termasuk dalam kategori dekonsentrator dalam mengakumulasi logam timbal dan kategori makro konsentrator dalam mengakumulasi logam seng.

.....Blanakan has a large area of paddy fields adjacent to residential areas and gets irrigation water from the Blanakan river. The existence of golden apple snail (*Pomacea canaliculata*) as an invasive animal in Blanakan paddy fields is used as food and fodder by the local communities. This research aims to determine the heavy metal contents of lead (Pb) and zinc (Zn) in paddy field sediments and golden apple snail in Blanakan paddy fields, Subang, West Java, as well as the Bioconcentration Factor (BCF) value of those metals in the golden apple snails. Paddy field sediment and golden apple snail samples were taken from three research stations using purposive sampling at every station three times. Five samples of golden apple snail with a shell size of 4-7 cm were taken from each sampling point. The paddy field sediment samples were prepared by drying them using an oven, while the snail samples were taken from inside the shell and separated by the snail operculum. Further processing was carried out by the SIG Laboratory and the UI Chem Laboratory before carrying out the analysis of lead metal using the ICP method and the analysis of zinc metal using the AAS method. The results showed that the metal contents of lead and zinc in paddy field sediments in Blanakan ranged from 4.35 to 8.14 ppm and 10.32 to 23.51 ppm, respectively. The snail

samples contained lead and zinc in the range of 0.085 – 0.135 ppm and 9.42 – 58.82 ppm, respectively. Based on the BCF calculations, golden apple snails are categorized as a deconcentrator for lead metal accumulation and a macro concentrator for zinc metal accumulation.