ABSTRAK

Penelitian ini telah mengkaji keberadaan kontaminan kimia dan biologi pada sistem budidaya minapadi di Panembangan Kabupaten Banyumas. Pada penelitian ini telah dilakukan deteksi dan kuantifikasi logam berat seperti Pb, Cd, dan Cr dalam matriks air, sedimen, dan ikan nila pada sistem budidaya minapadi di Panembangan beserta potensi resiko ekologis dan kesehatan manusia. Selain itu telah dikaji juga kandungan pestisida dalam sedimen dan ikan nila beserta keamanan produk ikan budidaya. Kemudian untuk kontaminan biologi telah dikaji kepadatan bakteri *E.Coli* pada ikan nila kaitannya dengan keamanan pangan pada sistem budidaya minapadi. Hasil analisis logam berat pada air menunjukkan kandungan logam berat dibawah *Limit Of Detection* (LOD) pada semua lokasi stasiun. Untuk analisis kandungan logam berat pada sedimen dan ikan Nila menunjukkan adanya kontaminasi dari logam berat PB, Cd, dan Cr hampir pada semua lokasi stasiun. Berdasarkan standart baku mutu kandungan logam berat pada sedimen dan ikan Nila menunjukkan beberapa lokasi stasiun telah melebihi batas standart baku mutu. Kemudian, potensi resiko ekologis dan kesehatan manusia, sedimen dan ikan Nila menunjukkan adanya risiko atau potensi terganggunya sistem ekologis dan untuk kesehatan manusia di beberapa lokasi stasiun sistem minapadi. Sementara, analisis kandungan pestisida pada sedimen dan ikan menunjukkan tidak terdeteksi (*non detected*) adanya kontaminasi residu pestisida pada semua stasiun sistem minapadi. Terakhir, analisis kandungan bakteri E. Coli menunjukkan adanya cemaran bakteri pada ikan Nila di semua lokasi stasiun sisitem minapadi desa Panembangan.

ABSTRACT

This study has assessed the presence of chemical and biological contaminants in the aquaculture system in Panembangan, Banyumas Regency. In this study, the detection and quantification of heavy metals such as Pb, Cd, and Cr in the water, sediment, and Nila fish in the minapadi farming system in Panembangan and the potential ecological and human health risks have been carried out. In addition, the pesticide concentration in sediment and tilapia and the safety of farmed fish products have also been studied. Then for biological contaminants, the density of E.Coli bacteria in Nila fish has been studied in relation to food safety in the minapadi farming system. The results of heavy metal analysis in water showed heavy metal content below the Limit Of Detection (LOD) at all station locations. For the analysis of heavy metal content in sediments and Nila fish fish, there was contamination from heavy metals PB, Cd, and Cr in almost all station locations. Based on the quality standard of heavy metal in sediment and Nila fish, it shows that some station locations have exceeded the quality standard limit. Then, potential ecological and human health risks, sediments and Nila fish show the risk or potential for disruption of the ecological system and for human health in several locations of the minapadi system station. Meanwhile, the analysis of pesticide contamination in sediment and Nila fish showed non-detected pesticide residue contamination at all stations of the minapadi system. Finally, the analysis of E. Coli bacteria indicated the presence of bacterial contamination in Nila fish at all locations of the Panembangan village minapadi system stations.