INTISARI

Sedimen yang mengendap di kantong lumpur Bendung Pendowo dan Pijenan dipengaruhi oleh debit air yang masuk di kantong lumpur, kondisi tanah di samping kantong lumpur dan waktu pembilasan. Waktu pembilasan yang mundur dari jadwal disebabkan oleh permintaan petani untuk memenuhi kebutuhan air untuk pertanian dan kolam ikan. Kondisi ini akan mempengaruhi kinerja kantong lumpur sehingga perlu dilakukan evaluasi.

Penelitian ini untuk mengetahui kinerja kantong lumpur di Bendung Pendowo dan Pijenan. Perhitungan kebutuhan air irigasi untuk mengetahui debit air irigasi. Sedimen dari kantong lumpur untuk mengetahui berat jenis dan gradasi butir sedimen yang digunakan untuk menghitung angkutan sedimen dengan metode M*eyer Peter Muller*, mengevaluasi panjang kantong lumpur, mengevaluasi pengendapan dan mengevaluasi pembilasan di kantong lumpur berdasarkan Standar Perencanaan Irigasi.

Hasil evaluasi menunjukkan kinerja kantong lumpur Bendung Pendowo dan Pijenan masih baik dimana kantong lumpur mampu mengendapkan serta membilas sedimen secara hidrolis dengan periode pembilasan kantong lumpur 6 bulan sekali pada musim hujan (Pendowo) dan 3 bulan sekali pada musim kemarau (Pijenan). Sedimen yang mengendap di kantong lumpur berdasarkan Standar Perencanaan Irigasi sebesar 0,5 $^{0}/_{00}$ dari debit air normal tidak sesuai dengan kondisi di kantong lumpur Bendung Pendowo dan Pijenan. Sedimen yang mengendap di kantong lumpur Bendung Pendowo sebesar 0,01 $^{0}/_{00}$ dari debit air normal. Sedimen yang mengendap di kantong lumpur Bendung Pijenan sebesar 0,1 $^{0}/_{00}$ dari debit air normal.

Kata kunci : Kebutuhan air irigasi, sedimentasi, kantong lumpur

ABSTRACT

Deposited sediment in the sand trap of Pendowo and Pijenan Weirs were influenced by the water discharge entering the sand trap, the soil conditions beside the sand trap and the flushing time. Backed off schedule of the flushing time was due to the farmers water demand for farming and fish ponds. Such condition would affect the sand trap performance. Thus, an evaluation is required.

The objective of this study was to identify the sand trap performance in Pendowo and Pijenan Weirs. The calculation of irrigation water demand was required in order to identify the irrigation water discharge. Sediments from the sand trap was used to identify the specific gravity and gradation of sediment grains, which was useful to calculate the sediment transport by using the Meyer Peter Muller method, evaluate the length of the sand trap and the sedimentation and the flushing in the sand trap based on the Irrigation Planning Standards.

The evaluation results showed that the sand trap in Pendowo and Pijenan Weirs was still in good performance, as indicated by their ability to hydraulically deposit and flush the sediment within the sand trap flushing period of once in 6 months during the rainy season (Pendowo) and once in 3 months during the dry season (Pijenan). Based on the Irrigation Planning Standards, the deposited sediment in the sand trap should be 0.5 $^{0}/_{00}$ of normal water discharge. This was not in line to the sand trap condition in Pendowo and Pijenan Weirs where the deposited sediment in the sand trap were 0.01 $^{0}/_{00}$ and 0.1 $^{0}/_{00}$, respectively.

Keywords: irrigation water needs, sedimentation, sand trap