ABSTRAK

Korelasi Kadar Besi dan Seng Terlarut Terhadap Kelimpahan *Chlorella sp.* di Perairan Situ Ciburuy Kecamatan Padalarang Kabupaten Bandung Barat

Besi merupakan unsur yang berperan sebagai penyusun sitokrom dan klorofil bagi tumbuhan akuatik serta seng yang berperan sebagai mikronutrien pada pertumbuhan *Chlorella sp.*. Tujuan dari penelitian ini adalah untuk mengetahui korelasi dan pengaruh perlakuan pemberian $[Fe(CON_2H_4)_6]^{3+}$ dan $[Zn(CON_2H_4)_4]^{2+}$ terhadap kelimpahan *Chlorella sp.* dalam sampel air Situ Ciburuy Kecamatan Padalarang, Kabupaten Bandung Barat. Sampel berasal dari sepuluh titik, kemudian dilakukan uji sifat fisika dan kimia beserta kelimpahan *Chlorella sp.* yang terdiri atas (suhu, warna, kekeruhan, daya hantar listrik, total padatan terlarut, pH, nitrat, dan silika). Salah satu sampelnya dipilih dari sampel yang mengandung *Chlorella sp.* paling banyak, diberikan perlakuan dengan variasi kadar larutan kompleks $[Fe(CON_2H_4)_6]^{3+}$ 0,226, 0,321, 0,424, 0,513, dan 0,629 ppm dan variasi kadar larutan kompleks $[Zn(CON_2H_4)_4]^{2+}$ 0,0632, 0,0845, 0,1074, 0,1210, dan 0,1496 ppm. Sampel yang diberi perlakuan tersebut diamati perubahan kelimpahan *Chlorella sp.* serta kandungan besi dan seng terlarutnya selama lima hari berturut-turut. Hasilnya menunjukan bahwa pada perairan alami terdapat korelasi kuat antara kandungan besi dengan *Chlorella sp.* sebesar 0,736 dan korelasi sedang pada seng dengan *Chlorella sp.* sebesar 0,534. Pengamatan perlakuan sampel air yang ditambahkan beberapa variasi larutan kompleks $[Fe(CON_2H_4)_6]^{3+}$ dan $[Zn(CON_2H_4)_4]^{2+}$ menunjukan adanya korelasi. Pengamatan analisis Fe_{h+4}/Fe_{h+3} terhadap $Fe_{tot\text{-}awal}$ terdapat korelasi sangat kuat sebesar -0,933, $Chl_{awal}/Fe_{tot\text{-}awal}$ terhadap Chl_{h+3}/Chl_{h+4} terdapat korelasi sangat kuat sebesar -0,977, sedangkan analisis perlakuan Zn_{h+4}/Zn_{h+3} terhadap $Zn_{tot\text{-}awal}$ terdapat korelasi sedang sebesar -0,435, dan $Chl_{awal}/Zn_{tot\text{-}awal}$ terhadap Chl_{h+3}/Chl_{h+4} terdapat korelasi sangat rendah sebesar -0,179.

Kata-kata kunci: Korelasi, kompleks besi, kompleks seng, *Chlorella sp.,* Situ Ciburuy.

ABSTRACT

Correlation Levels of Dissolved Iron and Zinc Against Abundance *Chlorella sp.* Situ Ciburuy Water District in West Bandung regency Padalarang

Iron is an element that acts as a constituent of cytochromes and chlorophyll for aquatic plants as well as zinc which act as micronutrients on growth of *Chlorella sp* ..T he purpose of this study was to determine the correlation and the effect of treatment administration $[Fe(CON_2H_4)_6]^{3+}$ dan $[Zn(CON_2H_4)_4]^{2+}$ to the abundance of *Chlorella sp.* in situ water samples Ciburuy Padalarang the District, West Bandung regency. The samples came from ten points, then test the physical and chemical properties as well as the abundance of *Chlorella sp*. consisting of (temperature, color, turbidity, electrical conductivity, total dissolved solids, pH, nitrate, and silica). One sample is selected from samples containing *Chlorella sp.* at most, given the variations in the levels of treatment with a solution of complex $[Fe(CON_2H_4)_6]^{3+}$ 0,226 , 0,321 , 0,424 , 0,513 , and 0,629 ppm, and solution of complex variations in the levels of $[Zn(CON_2H_4)_4]^{2+}$ 0,0632, 0,0845, 0,1074, 0,1210, and 0,1496 ppm. Samples treated with the observed changes in the abundance of *Chlorella sp.* and the amount of dissolved iron and zinc for five consecutive days. The results showed that in natural waters there is a strong correlation between the iron content of *Chlorella sp*. correlation of 0.736 and was on zinc with *Chlorella sp*. amounted to 0.534. Observations treatment water samples were added a few variations of the complex solution of $[Fe(CON_2H_4)_6]^{3+}$ and $[Zn(CON_2H_4)_4]^{2+}$ shows a correlation. Observation analysis of Fe_{h+4}/Fe_{h+3} against $Fe_{tot\text{-}awal}$ there is very strong correlation of -0.933, $Chl_{awal}/Fe_{tot\text{-}awal}$ against Chl_{h+3}/Chl_{h+4} a very strong correlation of -0.977, while the analysis of treatment Zn_{h+4}/Zn_{h+3} against $Zn_{tot\text{-}awal}$ of correlation being -0.435, and the initial $Chl_{awal}/Zn_{tot\text{-}awal}$ against Chl_{h+3}/Chl_{h+4} a very low correlation of -0.179.

Keywords: Correlation, Complex iron, Complex zinc, *Chlorella sp*., Situ Ciburuy.