

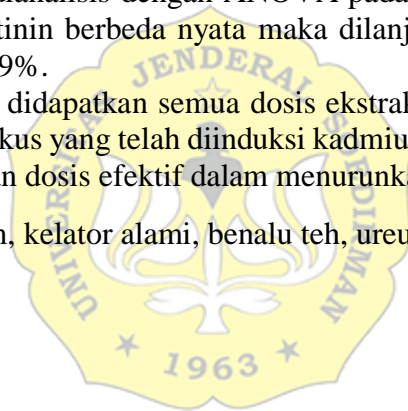
## RINGKASAN

Kadmium merupakan salah satu bahan pencemar yang berasal dari berbagai limbah industri tambang, keramik, dan pengelasan logam. Kadmium dalam tubuh akan memicu pembentukan radikal bebas dan bersifat nefrotoksik. Efek kadmium pada ginjal mampu meningkatkan kadar ureum dan kreatinin. Penanganan keracunan kadmium diberikan kelator kimiawi berupa dimerkaprol yang memiliki efek samping hipertensi. Kadmium dalam tubuh dapat diturunkan menggunakan kelator alami ekstrak benalu teh (*Scurrula atropurpurea*) dengan kandungan kuersetin. Tujuan penelitian adalah mengetahui pengaruh dan dosis efektif ekstrak benalu teh sebagai kelator alami dalam mendetoksifikasi kadmium terhadap kadar ureum dan kreatinin tikus putih jantan (*Rattus novergicus*) galur Wistar.

Penelitian dilakukan menggunakan metode eksperimental dengan Rancangan Acak Lengkap yang terdiri dari 6 perlakuan dan 4 kali ulangan yakni P<sub>0</sub> (tanpa induksi kadmium dan ekstrak benalu teh), P<sub>1</sub> (diinduksi kadmium), P<sub>2</sub> (diinduksi kadmium dan ekstrak benalu teh 100 mg.kg<sup>-1</sup> BB), P<sub>3</sub> (diinduksi kadmium dan ekstrak benalu teh 200 mg.kg<sup>-1</sup> BB), P<sub>4</sub> (diinduksi kadmium dan ekstrak benalu teh 300 mg.kg<sup>-1</sup> BB), dan P<sub>5</sub> (diinduksi kadmium dan ekstrak benalu teh 400 mg.kg<sup>-1</sup> BB). Parameter penelitian adalah kadar ureum dan kreatinin tikus. Sampel darah diambil saat *post test*. Kadar ureum dan kreatinin dianalisis dengan ANOVA pada tingkat kesalahan 5% dan 1%, hasil ureum dan kreatinin berbeda nyata maka dilanjutkan dengan uji Duncan pada tingkat kepercayaan 99%.

Hasil penelitian didapatkan semua dosis ekstrak benalu teh menurunkan kadar ureum dan kreatinin tikus yang telah diinduksi kadmium. Dosis ekstrak benalu teh 400 mg.kg<sup>-1</sup> BB merupakan dosis efektif dalam menurunkan kadar ureum dan kreatinin.

**Kata kunci:** kadmium, kelator alami, benalu teh, ureum, kreatinin.



## SUMMARY

Cadmium is one of contaminants in environment. Contamination of cadmium, among others, come from various wastes of metal, ceramics, and metal welding industries. The present of cadmium in human body is toxic and will trigger the formation of free radicals, among others, the effect of cadmium could increase the levels of urea and creatinine on kidneys. The present of cadmium in human body could be lowered using a natural chelator extracted from parasite of tea (*Scurulla atropurpurea*) as an antioxidant. This study aims to know the effect and effective dose of parasite of tea extract in detoxifying cadmium toward ureum and creatinine levels of wistar strain of male white rat (*Rattus novergicus*).

This study was done using experimental method with Completely Randomized Design (CRD) consists of 6 treatments and 4 replications, i.e. K1 (negative control without induction of 25% LD<sub>50</sub> CdSO<sub>4</sub> and extract of tea mistletoe), K2 or positive control (induced by 14 days of 25% LD<sub>50</sub> CdSO<sub>4</sub>), and P1, P2, P3, and P4 (K2 + induced by 28 days of 100: 200; 300; and 400 mg/kgBW of extract of tea mistletoe). Parameters of the study were rat urea and creatinine levels. Blood samples are taken at post test (after treatment). The urea content was measured by the Berthelot method of the Diasys kit using a wavelength of 546 nm. Creatinine levels were measured using Jaffe method of the Diasys kit with a wavelength of 492 nm. The absorbance value is included in the calculation formula of urea and creatinine levels. Levels of urea and creatinine were analyzed by Analysis of Variance (ANOVA) or F test at 5% error rate, if the results were significantly different then continued with Duncan test to know the difference of each treatment.

Result of research obtained that tea mistletoe extract give an effect towards the decrease of urea levels and creatinin of rats that induced by 25% of LD<sub>50</sub> CdSO<sub>4</sub>. Levels of P4 of urea and creatinin are levels that intend to normal and it's an effective doses of tea mistletoe in decreasing both parameters.

**Keywords:** cadmium, natural chelator, tea mistletoe, urea, creatinine.