

ABSTRACT***Effect of Red Amaranth (*Amaranthus tricolor* Linn.) Juice on Memory of Mice (*Mus musculus*) Induced by Lead Acetate*****Febrita Ardianingsih**

Chronic lead exposure causes neurotoxicity as a result of memory impairment. Various studies have reported that lead exposure can reduce memory through oxidative stress, inhibition synaptic plasticity, and degeneration of neurons in the hippocampus. Red amaranth contains a variety of bioactive ingredients, including vitamin C, B1, Fe, Ca, zinc, phosphorus, folate, betalain, carotenoids, flavonoids, and polyphenols. Some literatures indicate that these bioactive ingredients have the ability to reduce the toxicity of lead and to increase memory. This study aimed to prove the administration of red amaranth juice prevented memory loss towards mice induced by lead acetate. Thirty-three of male Swiss-Webster mice were divided into 3 groups, K0 was given placebo, K1 was given lead acetate 1.16 mg/10 g BW/day per sonde, and the K2 was given red amaranth juice 382.2 mg/10 g BW/day per sonde and lead acetate 1.16 mg/10 g BW/day per sonde. The treatment given for 3 weeks. The ability of mice memory was measured from the observation escape latency time to the target, the frequency crossing the target, and the staying time in the target quadrant in the Morris water maze. In conclusion, administration of red amaranth juice prevented an increase in the escape latency time to the target, prevents a decline in the frequency of crossing targets and prevents a decrease in the target staying time in mice induced by lead acetate. The conclusion illustrated that the administration of red amaranth juice prevented memory loss due to lead exposure.

*Keywords : red amaranth (*Amaranthus tricolor* Linn.), lead, memory, Morris water maze*