

**NEUROPROTEKTIF POTENTIAL OF CAULIFLOWER
(*Brassica oleraceae* var. *Botrytis*) MICROGREENS AGAINST
PARKINSON'S DISEASE IN *Drosophila melanogaster*
INDUCED PARAQUAT**

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ABSTRACT

Parkinson's is a neurodegenerative disease that occurs in the substantia nigra, due to a decrease in dopaminergic neurons. Cauliflower *microgreens* are known to have antioxidant compounds that function as neuroprotective. This study aimed to determine the effect of cauliflower *microgreens* extract on survival rates, locomotor motion, malondialdehyde (MDA) and dopamine levels from Parkinson's disease in fruit flies (*Drosophila melanogaster*) which were induced by paraquat and to determine the antioxidant activity of polyphenol compounds, chlorophyll, and carotenoids on extract of cauliflower *microgreens*. This study used a completely randomized design (CRD) with four treatments and six replications, namely control (P0), paraquat treatment (P1), treatment of extract of cauliflower *microgreens* 120 µg / mL (P2) and paraquat treatment 3.5 mM + extract cauliflower *microgreens* 120 µg / mL (P3). The results of testing the antioxidant strength of extract of cauliflower *microgreens* obtained by IC50 was 68.32 µg / mL which was strong, total polyphenol levels were 390 mg GAE / g extract, total chlorophyll levels were 16.72 mg / L and carotenoid levels were 17.12 µmol / L. Based on the results of survival rate at the end of the observation, it was found that the treatment of cauliflower *microgreens* extract was 96.67% and the lowest value was paraquat treatment with 75.83%. Observation of locomotor motion shows that fruit flies treated with extracts of *microgreens* have a value of 96.67%, while the lowest value in the treatment given paraquat is 60%. The highest Malondialdehyde level was obtained in fruit flies which received paraquat treatment with a value of 23.09 nMol / mL, while the lowest value in the *microgreens* extract treatment was 18.43 nMol / mL. It was shown that the treatment of cauliflower *microgreens* extract had the highest dopamine content of 0.1437 and the lowest value in the paraquat treatment with a value of 0.05. Based on the results of the study it can be concluded that the extract of cauliflower *microgreens* can act as a neuroprotective against Parkinson's disease in paraquat-induced fruit flies, through the process of reducing free radicals.

Keywords : Antioxidants, Fruit Flies, *Microgreens*, Paraquat, Parkinson