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