

**APPLICATION OF *Hydrangea macrophylla* FLOWER
EXTRACT ON GROWTH AND YIELD OF
Vigna unguiculata L.**



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ABSTRACT

A pot experiment was carried out at the crop farm of Eastern University, Sri Lanka during the period January 2019 to April 2019 to study the effects of different concentrations of *Hydrangea macrophylla* flower extract (HmFE) as a foliar application with recommended fertilizer on growth and yield of Cowpea (*Vigna unguiculata* L.), variety waruni.

The experiment was arranged with five treatments in Completely Randomized Design with five replications (T1: Distilled water (Control), T2: 10% HmFE, T3: 20% HmFE, T4: 50% HmFE, T5: 100% HmFE) and their performances on the growth and yield of *Vigna unguiculata* L. were investigated. It was found that the foliar application of *Hydrangea macrophylla* Flower Extract significantly ($P < 0.05$) increased the growth and yield of *Vigna unguiculata* L. when compared to control plants and the highest growth and yield performance was observed in plants applied with low concentration (20%) of *Hydrangea macrophylla* Flower Extract.

In this investigation, the statistical analysis of data proved that application of low concentration (20%) of *Hydrangea macrophylla* flower extract increased the plant height (9.6%), chlorophyll content (23.02%), number of leaves (43.66%), leaf area (65%), root length (32.06%), fresh weight of stems (25.8%), fresh weight of leaves (16.5%), fresh weight of roots (32.5%), number of nodules (74.35%), number of effective nodules (90%), weight of the nodules (67.92%), number of seeds per pod (36.36%), weight of seeds per pod (30.14%), number of flowers per plant (71.4%), number of pods per plant (66.66%), 100 seeds weight (22.8%) and the Total yield (75.28%) compared to the control plant. Therefore, 20% HmFE is recommended to apply for *Vigna unguiculata* L. which is environmental friendly for sustainable manner.

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