Impact of Various Liquid Fertilizers on Growth and Yield Performance of Cauliflower

Pathirana, P.D.A.[1*], Anusiya, M[1], Jeyavanan, K.[2]

[1]Department of Biosystems Technology, Faculty of Technology, University of Jaffna, Sri Lanka.

[2]Department of Agronomy, Faculty of Agriculture, University of Jaffna, Sri Lanka.

dilkiamandapathirana@gmail.com, anusiyam@univ.jfn.ac.lk

The growing use of liquid fertilizers among Sri Lankan farmers reflects a broader trend toward sustainable agricultural practices, aimed at reducing reliance on chemical inputs while improving crop productivity. In this context, a controlled pot experiment was conducted from December 2020 to March 2021 at the Agriculture Farm, Faculty of Agriculture, University of Jaffna, to evaluate the effects of various liquid fertilizers on the growth and yield performance of cauliflower (Brassica oleracea var. botrytis) cultivated in insect-proof net houses. The experiment followed a Complete Randomized Block Design (CRD) with ten replicates, including four treatments: T1 (control with distilled water), T2 (chemical growth promoter—Nitrobenzene), T3 (azolla), and T4 (fermented cow urine). Fermented cow urine was prepared by allowing fermentation in an airtight container for seven days, followed by dilution to a 20 % concentration. Azolla, a nitrogen-fixing aquatic fern, was sun-dried for seven days, finely powdered, and similarly diluted. Foliar application of these treatments was initiated two weeks after seeding and conducted weekly thereafter. The growth and yield parameters were analyzed using SAS software at a significant level of $p<0.05$. The results revealed that the T4 treatment (fermented cow urine) significantly enhanced plant growth, with improvements in plant height, leaf area, and number of leaves per plant. Yield attributes, including total yield, head diameter, and girth, also showed notable improvements in the T4 group. Furthermore, cow urine acted as a natural pesticide, contributing to healthier and more robust plant growth. The study concludes that cow urine is an effective, affordable, and eco-friendly liquid fertilizer that small-scale farmers can use to boost cauliflower yields and promote sustainable agriculture.

Key words: Cauliflower, Cow Urine, Head, Liquid Fertilizers