

**FERTIGATION SYSTEM FOR SPRING ONION (*Allium fistulosum*)
PRODUCTION USING CHICKEN MANURE EXTRACT**

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ABSTRACT

GAPAC, SHENNY LANE MADRID and ROSETE, ALONA JANE BIBIS, Department of Agricultural and Biosystems Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, **June 2023, FERTIGATION SYSTEM FOR SPRING ONION (*Allium fistulosum*) PRODUCTION USING CHICKEN MANURE EXTRACT.**

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Most of the farmers use conventional irrigation practices such as furrow irrigation and surface irrigation, which can lead to the loss of nitrogen and nutrients due to excessive irrigation and fertilization. Through fertigation, water and nutrients are applied to the root zone of the spring onions, typically resulting in better water and fertilizer efficiency than with conventional irrigation and fertilization practices. Using chicken manure extract as fertilizer for spring onion production that is economically viable and ecofriendly can improve soil structure, release nutrients at a slower rate that will sustain healthy soil, amend soil, and build organic matter.

This study aimed to evaluate the effect of fertigation system on spring onion production using chicken manure extract. Specifically, the study aimed to extract chicken manure, evaluate the effect of fertigation system and chicken manure extract on the growth and yield of spring onion, and perform a simple cost analysis for the system. The study was conducted at the University Research Center (URC), Central Luzon State University, Science City of Muñoz, Nueva Ecija. The chicken manure extract, based on the result of the analysis, had a composition of 1.16% N, 0.03% P₂O₅, and 1.12% K₂O.

The study was laid out in a Complete Randomized Design (CRD), and the data were subjected to analysis of variance (ANOVA). Least Significant Difference (LSD) for

the comparison among means were used in the analysis of the data. The study considered three experimental treatments: Treatment 1 – fertigation using chicken manure extract; Treatment 2 = drip irrigation along with chicken manure incorporated in the soil; and Treatment 3 – fertigation using recommended liquid chemical fertilizer.

The results showed that fertigation using chicken manure extract (T₁) gave the highest number of leaves and yield (8.07 and 0.21 kg/m², respectively), while fertigation using recommended liquid chemical fertilizer (T₃) gave the best growth response in terms of plant height and leaf length (30.8 cm and 27.10 cm, respectively). Statistically, there are significant differences in plant height, leaf length, and total yield between the three treatments. And there is no significant difference in leaf diameter between the fertigation using chicken manure extract (T₁) and fertigation using recommended liquid chemical fertilizer (T₃), both of which have 0.80 cm. The fertigation system using chicken manure extract has an estimated production cost per kg of Php 453.00.

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