APPLICATION OF DRIP IRRIGATION TECHNOLOGY FOR SUNFLOWER (*Helianthus annuus L.*) PRODUCTION

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ABSTRACT

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Proper irrigation is simple applying the appropriate amount of water at the correct time (Pramanik, 2022). This study was conducted to evaluate the effects of drip irrigation technology compared to conventional way of irrigating crops (furrow irrigation) on the sunflower production. The specific objectives were to install a drip irrigation system and evaluate the drip system's performance through the growth and yield parameters, and to determine the water productivity, and perform a cost analysis of the system. It was conducted at field laboratory of the University Research Center-Central Luzon State University (URC-CLSU).

The treatments of the study were comprised of two (2) irrigation techniques with the integration of plastic mulch. Treatment 1 and 2 were irrigated using furrow irrigation without mulch and with mulch, respectively. Treatment 2 and 3 were irrigated using drip irrigation technology without mulch and with mulch, respectively.

Total volume of water used in the production was determined. Based on the data, higher volume of water applied during crop production was from T1: conventional (furrow irrigation) without mulch. Water productivity was calculated using the yield (kg) per

square meter divided by the total volume (m^3) of water per square meter. As a result, T1 had the lowest water productivity and T4 gained the highest water productivity.

The results showed a significant difference between conventional (furrow irrigation) and drip irrigation technology in terms of growth and yield parameters. It was observed that T4 used less water but obtained the highest yield, increasing water productivity. The system was viable for farmers with 1.48 years of payback period and a return on investment of 67.69%.

Keyword: *Drip irrigation; furrow irrigation; water productivity; water saving; payback period*

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