

**MAIZE (*Zea mays* L.) FODDER PRODUCTION SYSTEM
FOR LIVESTOCK FEED**

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ABSTRACT

AMBROCIO, JEFFREY F., Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **MAY 2023, MAIZE (*Zea Mays L.*) FODDER PRODUCTION SYSTEM FOR LIVESTOCK FEED.**

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Fodder crops are cultivated for animal feed, serving livestock animals like carabao, cattle, goats, and rabbits. Local farmers harvest fodder from abundant sources, but landowners demand payments. Commercial growers grow fodder purposively on arable lands to avoid shortages. Hydroponics-generated fodder, also known as sprouted fodder or fresh fodder biscuits, improves nutritional value by sprouting grains into green fodder. This technique enhances protein, sugars, minerals, vitamins, plant enzymes, and animal growth. The crops are grown in enclosed environments, reducing vulnerability to diseases and pesticides

The study aims to develop a hydroponic Maize (*Zea May L.*) fodder factory for animal feed augmentation, ensuring safe and consistent nutrition for livestock. The factory conserves water and land resources, while reducing costs and utilizing locally available materials. The goal is to maintain environmental quality and affordability for local growers.

The general objective of the study was to develop and provide hydroponic system for the production of maize fodder as livestock feed. Specifically, the study aimed to design a hydroponics foddors system for the production of maize as livestock feed, evaluate the performance of foddors (kg of fodder/ area), water consumptions, and height uniformly and perform a simple cost analysis regarding the production of maize fodder.

The growing system is composed of four (4) parts: the shed, growing racks, recirculating irrigation system, and trays. The yield of fodder is 3.74kg/m^2 , 2 minutes of irrigation every 2 hours, and the amount of water consumed per treatment increases every day. The mean height uniformly is 9.55, and treatment II has significant differences

compared to two other treatments. Maize fodders production offers economic solution for limited green fodder production in dry seasons and urban areas, addressing forage shortages.

Keywords: hydroponics fodder, recirculating, irrigation, growing rack, maize

recirculating irrigation system, and trays.

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