# ABSTRACT

*Urban farming is a farming activity designed to help people fulfill their consumption of nutritious food by planting horticultural crops on urban land. The urban farming movement was first realized by the United States as an effort to deal with poor economic conditions and proved successful in providing 40% of food needs at that time. It is feared that the lack of green and open land in urban areas will have an impact on food availability. This is the background for urban farming actors to adapt to limitations, one of which is by implementing a hydroponic cultivation system.*

*Hydroponics is one of the technological developments in plant cultivation that utilizes water, focusing on the fulfillment of nutrients and minerals. The planting medium used is in the form of solid objects such as hydroponic netpots, rockwool, sponges, and so on. With the hydroponic system, plant growth is relatively faster because the nutrients in the solution can be optimally utilized by the plants so that the leaves are wider, the fruit flesh is larger and sturdy. However, there are drawbacks to the hydroponic method using the Nutrient Film Technique (NFT) such as the need for regular supervision to maintain the nutrient content of the water flowing to the hydroponic plants. This certainly has an impact on the growth and quality of hydroponic plants.*

*HydroFarm is a product created for monitoring and controlling with IoT and image processing which can be accessed by urban farmers via a mobile application. The aim of using IoT is to control pumps so that water can be distributed according to plant needs. Apart from that, IoT plays a role in controlling the nutrients and nutrients needed by hydroponic plants so that plant nutrition is maintained. Image processing plays a role in detecting and recognizing the condition of hydroponic plants through leaves.*

*Keywords: Urban, Hydroponics, Controlling, Monitoring, and Mobile*