THE APPLICATION OF CLASS CGM MODEL ON THE PEANUT PLANTS
(Arachis Hypogaea L.)

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Abstract

The purpose of this research is to learn the working process of CGM model and to compare the water content value of model simulation with field observation. This research was done in the form of experiment. The parameters of the observation were the soil physical observations, they are: the analysis of soil (soil texture), the analysis of bulk density (BV), the measurement of soil water content (KA) every 10 days, and the measurement of the thickness of the soil layer. The calculation of the model then compared with the result of field measurements. The results showed that the texture of the soil layer 1 and layer 2: sandy clay loam and layer 3: sandy loam. The grafic comparison of simulated soil water content (KA) and the observation indicates that the simulation model of water content value (KA) increases the decline in value. Meanwhile the value of water content observation of layer 1 is always over the water content of layer 2 and 3. This is influenced by soil texture factor in each layer of the peanut plants land, because the texture of the soil also determines a water system in the soil like infiltration rate, rainfall, and water binding ability of the soil. Further research is necessary to observe the growth of plants as a result of the water content of the soil and to compare with the results of a model simulations.

Keywords : *CGM model, water content, soil texture, observation, simulation*

Introduction

In Indonesia, peanut is one of important vegetable protein source in people's food menu pattern. In productivity view, Indonesia is assessed still low. For reach high productivity, common plants need optimum growth factors. The factors are related by climate and soil. The rainfall and weather as climate elements are the environment that determine plant growth and productivity.

For plants, soil is affected for plants growth and flowering. Plants will optimum grow and flower if soil condition, its live place, is suitable with nutrition and element of nutrition needs. In plant cultivation, moisture condition (humidity) of soil as an effect of irrigation should be noticed because moist soil is good affected to plant growth. Moisture is also important to defend cell shape stability. Some soil factors have not static properties, by management and technology its quality can be changed and be fixed so it can be compatible with developing field using type.

The ability to measure and to control soil water supply to plants is the basic to increase efficiency of water using. Technology predicts soil moisture content in the field

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