

ABSTRACT

The microstrip antenna is a thin plate antenna that can be attached to a thin conductor plate. Microstrip antenna has characteristics that can be used to analyze the effect of soil characteristics with a certain water content. The purpose of the microstrip antenna is to determine the water content of agricultural soil. Analyzes carried out by means of numerical simulations, laboratory experiments, and gravimetric methods are used as a comparison method to determine the ability of the proposed method. Gravimetric is a method that measures changes in soil weight in wet and dry soil by heating it so that the moisture content disappears.

With the proposed method, it can be done by taking some soil samples, then inserting them into the antenna that has been made such as a cross section that is connected to a VNA (Vector Network Analyzer) via a coaxial probe cable. By knowing the water content to minimize the occurrence of crop failures.

After the measurement is done, the measurement results from the soil sample can determine the amount of water content in the soil sample, so that you can find out how much the soil can absorb water.

Keywords: *Antenna, microstrip, water content, soil water, gravimetric.*