ABSTRACT

Non-Destructive Testing (NDT) is the process of testing materials, objects, tools without damage the function of the use of the object carried out within a certain period of time. NDT method has a variety of methods, in this study using the magnetic field induction method. This research is expected to know the difference in the level of kerosene with soil, by varying the levels of kerosene 10 ml, 30 ml-50 ml,70-100 ml, 120ml - 160 ml, 180 ml - 230 ml, dan 250 ml into the soil. This experiment uses two types of single coil sent as a transmitter coil and receiver coil which are installed exactly according to the test object. The number of turns of the transmitter coil perlayer is different from the number of receiver coil windings. The output of the recipient coil can be analyzed by looking at the difference between the variation of kerosene levels and before the presence of kerosene on the ground. Based on experiments, the results at the receiver change with respect to the distance between coils and kerosene levels. The response of the measured voltage value on the receiving coil is analyzed by looking at the difference between the variation of kerosene and before kerosene on the ground. The content of kerosene in the soil can be determined by the change in tension between the soil before and given variations of kerosene in the soil. The results of the transmitter coil with the number of turns 75 perlayer and the receiver coil 45 windings perlayer, the distance of the coil to the object by 0.5 cm and the input 20 Vpp, Then the kerosene content content in the soil with a mass of 500 gr can be determined by measuring the induced stress with an error of 2.71% - 60.1% of the 5 test data used.

Keywords: Non Destructive Test (NDT), Magnetic Induction Method Field, Eddy Current Testing, Soil, Kerosene.