

## ABSTRACT

*Metal is one of the mineral resources in the soil. To determine the presence of these metals, it is necessary to identify the metals in the soil. One of the methods used is the non-destructive testing (NDT) method. The NDT method used in this study is the magnetic field induction method. This study uses two types of coils, namely transmitter as input and receiver as output. Tests carried out using only soil and metal objects planted in the ground using 3 pairs of coils, namely coils with 200, 300, and 400 turns. There are 3 metals used, namely iron, aluminum, and copper. For ferrous metal with 200 coils from a depth of 0.5 cm to 3 cm it is more optimal to use an input frequency value of 250 kHz and at a depth of 3.5 cm to 5 cm it is more optimal to use an input frequency value of 230 kHz. In aluminum metal with a coil of 200 from a depth of 0.5 cm to 2.5 cm it is more optimal to use a frequency of 250 kHz and at a depth of 3 cm to 5 cm it is more optimal to use a frequency of 230 kHz. For copper metal with a coil of 200 from a depth of 0.5 cm to 1.5 cm it is more optimal to use a frequency of 250 kHz and at a depth of 2 cm to 5 cm it is more optimal to use a frequency of 230 kHz. This proves to detect the presence of metal in the soil with the presence of deeper metals can use a low frequency and if the presence of metal is getting shallower can use a high frequency.*

**Keywords:** *NDT, Metal, Coil, Magnetic Field Induction Method*