

***Design of Squirrel Pest Repellent in Pamelo Citrus (Citrus Maxima)
Plantations Based on Arduino Uno with Solar Panels***

Yuli Hananto, S.TP., M.Sc. (Supervisor)

Ricky Ramadhani Tri Nugraha

Study Program of Renewable Energy Engineering Study

Engineering Department

ABSTRACT

In 2022 pomelo orange production in Magetan Regency will reach 15,770 tons. Orange production from year to year has no consistency. One of the main factors that cause it is pest attack. Squirrels are dangerous pests that disturb pomelo citrus plantations. In order to maintain productivity in order to remain consistent in orange production, we need tools that are efficient, applicable and environmentally friendly. This study aims to design and test an arduino uno-based squirrel pest repellent with solar panel-based sound output. 1) the energy source for the tool is obtained from solar panels so it is environmentally friendly; 2) the tool operates automatically based on a predetermined time, the tool turns on at a certain hour and will automatically turn off according to the set time; 3) the sound output of the instrument is issued by the speakers which are managed through an amplifier; 4) can be applied directly to plantation land far from settlements, because it does not use household electricity; 5) use a DC voltage current that has a low intensity so that it is safe for garden managers from work accidents. The results of the performance test, the tool can operate automatically according to the specified time provisions. A 60 Wp solar panel can produce the largest amount of electrical energy at 304.81 Wh, while the largest required equipment load is 117.48 Wh. So that the energy consumption of the load can be met by the results of solar panel energy.

Keywords: *Pests, Sound Output, Solar Panels*