

ABSTRACT

**ESTIMATING LABOR ENERGY IN SERVOW TOMATO CULTIVATION
WITH A DRIP IRRIGATION SYSTEM: A CASE STUDY IN KOTABES,
AMARASI DISTRICT, KUPANG REGENCY, EAST NUSA TENGGARA**

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Servow tomato cultivation is an important agricultural endeavor in Indonesia. Tomato plants are not only a rich source of nutrients but also have high economic value. However, the main challenge in tomato cultivation is the efficient use of resources, including labor and water, especially in dry areas or areas with limited water resources. The purpose of this study is to estimate the amount of energy or human labor required in each stage of tomato cultivation up to the vegetative phase using a drip irrigation system. Surveys and interviews, along with questionnaires, will be developed to collect data on cultivation activities, time spent, and the use of tools or machinery. The estimated human labor energy for cultivating Serrow tomatoes through the vegetative phase using a drip irrigation system, the total energy expended or required by both Ima and Arman, from the initial land preparation stage to the maintenance stage, is 971,955 kcal. The results of this study can be used as a reference for developing effective and safe physical exercise programs, especially for individuals seeking to maintain their physical performance. They can also raise awareness of the importance of monitoring heart rate and improve safe and effective exercise programs, helping to prevent injuries and improve health and physical performance.

Keywords: Heart rate, physical activity, heart rate monitoring.