



Development and Analysis of a Smart Agri Pesticide Sprayer Operated by Solar

Debashree Debadatta Behera

Abstract

Accesses to modern energy services are necessary for improved health and agricultural productivity (UNDP, 2001; Das, 2020). In the present paper a smart agri pesticide sprayer was developed which was operated by solar power. It was efficient as compared to conventional sprayer (operated by diesel fuel) and required less time for spraying larger area and also reduced back pain. The main components are solar panel, charge controller, battery, DC pump, and nozzle with sprayer and further the entire system was analyzed by PV syst software.

Keywords: Smart Agri Pesticide Sprayer, PV System, PV Panel

Introduction

Electrification is linked to a range of development improvements, such as increasing in income, generating employment, and achieving better health and education (Barron and Torero, 2017; Chakravorty et al. 2016; Das, 2020). In recent era, the demand of electricity has raised drastically. In order to overcome that smart agri sprayer had fabricated which consist of Solar panel, battery, charge controller, DC pump, and sprayer. It is easy to install, operate and maintain and diesel was not required. The present development of sprayer has following objectives. It is operated by clean energy which is pollution free and maintenance cost is less.

Literature Review

S. charvani et al [1] developed a sprayer which was operated by solar Panel, battery and pump. R.Joshua et al [2] developed a sprayer for