



Powering Business Worldwide



Team ID : AGR202403

Solar Powered Pesticide Sprayer

Government College of Engineering and Research, Avasari Khurd

Team Member	Role
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Problem Statement

Farmers worldwide face severe health risks due to pesticide exposure from manual sprayers.

- The Yavatmal Incident (2017) resulted in 40+ deaths and 800+ hospitalizations due to pesticide poisoning.
- 2017-18 Maharashtra Data: 63 deaths, 1300+ hospitalizations from pesticide poisoning.

Our Solution

We propose a **Solar Powered Pesticide Sprayer Machine** that:

- ✓ Pesticide spraying – Reducing direct chemical exposure.
- ✓ Uses solar energy – Cutting fuel and electricity costs.
- ✓ Precision spraying – Reducing chemical waste and environmental harm.
- ✓ Multifunctional – Can also sow seeds and spread fertilizers (customizable).



Technology & Development

Hardware:

- Solar Panels
- Microcontrollers (Arduino)
- Sensors and Actuators (Relays, Pumps, Motor Drivers, etc.)
- Motors

Software:

- Control algorithms in C
- Feedback Control System

We are currently at the **Proof of Concept** stage, focusing on feasibility, user needs, and prototyping.

Business Model

Our revenue strategy includes:

- Direct Sales to farmers and agri-tech firms.
- Leasing Options for small-scale farmers.
- Manufacturing Product as per Requirement (Customizable).
- Partnerships & Grants from governments and NGOs (Vigyaan Ashram).

Cost & Funding

Funding Imbursed : Rs. 5500

Our Expenses : Rs. 5400 (approx)

Component	Price
Microcontroller (Arduino)	500
Actuators and Motors	1100
Connectivity Module	250
Chassis	600
Solar Panel	550
Batteries and Other Components	2000
Testing and Assembly Cost	400

Impact of Our Innovation

- ✓ **Farmer Health Protection** – Minimizes pesticide-related illnesses.
- ✓ **Cost Savings** – Reduces operational costs by using renewable energy.
- ✓ **Eco-friendly Farming** – Less pesticide overuse, protecting soil and water.
- ✓ **Accessibility for Rural Farmers** – Making technology affordable and user-friendly.

Thank You

Reference for Videos : https://drive.google.com/drive/folders/1jl0c48YNB4Rj5CHLqqbhj9omBhgqEBti?usp=drive_link