



Team ID : AGR202403

# Solar Powered Pesticide Sprayer

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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.
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# 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.
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# Thank You

Reference for Videos : [https://drive.google.com/drive/folders/1jI0c48YNB4Rj5CHLqqbhj9omBhgqEBti?usp=drive\\_link](https://drive.google.com/drive/folders/1jI0c48YNB4Rj5CHLqqbhj9omBhgqEBti?usp=drive_link)