INSTITUTION'S INNOVATION COUNCIL
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Institute Name:
Institute of Aeronautical Engineering

Title of the Innovation/Prototype:
Agrobot: Identifying crop diseases and needs using Bot

Team Lead Name:	Team Lead Email:	Team Lead Phone:	Team Lead Gender:
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FY of Development:	Developed as part of:	Innovation Type:	TRL LEVEL:
2022-23	Academic Requirement/Study Project	Service	4

MRL Level:
MRL 3: Manufacturing proof of concept developed

IRL Level:
IRL 1: Basic Research (Need Identification & Peer Review Publications) & Completed First-Pass Business Model Canvas (BMC)

Theme:
Agriculture & Rural Development.,

Define the problem and its relevance to today's market / sociaty / industry need:
The problem at hand is the persistent challenge of efficiently identifying crop diseases and obtaining crucial information for optimal crop and soil management. In today's rapidly evolving agricultural landscape, where global food security, resource conservation, and sustainable farming practices are paramount, the need for accurate, timely disease detection and data-driven guidance for nutrient and water management is more pressing than ever. Addressing this problem is vital to ensure increased crop yields, reduced chemical usage, and the promotion of resource-efficient, environmentally friendly farming methods. It directly aligns with the market, societal, and industry needs for sustainable, high-yield agriculture.

Describe the Solution / Proposed / Developed:
The proposed solution entails the utilization of a chatbot, aptly named "Agrobot," as the primary tool for delivering essential information to farmers. This AI-powered chatbot employs advanced image recognition technology to identify crop diseases accurately. Furthermore, it collects and analyzes data regarding disease prevalence, nutrient requirements, and soil conditions. Agrobot offers real-time, data-driven insights to farmers, enabling them to make informed decisions about disease management, nutrient application, and water usage. This streamlined approach enhances crop health, increases yields, and promotes sustainable agriculture practices while simplifying the information dissemination process for farmers, making it accessible and user-friendly.

Explain the uniqueness and distinctive features of the (product / process / service) solution:
Agrobot employs cutting-edge image recognition technology to accurately identify crop diseases, ensuring early intervention and minimizing yield losses. It not only identifies diseases but also collects and analyzes data on disease severity, nutrient requirements, and soil conditions, providing holistic insights. Agrobot delivers tailored recommendations for disease management, nutrient application, and water usage, optimizing crop health on a per-field basis. Farmers can access information and control Agrobot remotely via a user-friendly interface, facilitating on-demand decision-making. By targeting treatment only where needed, Agrobot reduces chemical usage, aligning with sustainable farming practices.

How your proposed / developed (product / process / service) solution is different from similiar kind of product by the competitors if any:
While some competitors offer disease detection tools, Agrobot's unique chatbot interface simplifies data access and decision-making for farmers. Agrobot doesn't stop at disease detection; it provides in-depth data on disease severity and holistic crop management, which sets it apart from more basic detection tools. Agrobot's recommendations are tailored to each farmer's specific needs and fields, offering personalized solutions for optimal crop health. The ability for farmers to remotely access and control Agrobot sets it apart by allowing immediate adjustments based on changing conditions.

Is there any IP or Patentable Component associated with the Solution?:
No

Has the Solution Received any Innovation Grant/Seefund Support?:
No

Are there any Recognitions (National/International) Obtained by the Solution?:
No

***Is the Solution Commercialized either through Technology Transfer or Enterprise Development/Startup?:**
No

Had the Solution Received any Pre-Incubation/Incubation Support?:
No

Video URL:
https://www.youtube.com/watch?v=aWXHR52sPmk

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