

We Claim:

1. The decontamination system of claim 1 (100), wherein A smart agriculture system comprising a data collection layer (101) integrating sensor data, Kaggle datasets, and user-input data. A data processing layer (102) employing machine learning algorithms like R-CNN for weed detection, CNN for crop health monitoring(103), and sensor-based systems for soil moisture sensing and water footprint calculation, (104) includes a user-friendly interface for farmers, improving crop management and water resource efficiency.
2. (500) as claimed in claim 1, wherein the weed detection module employs R-CNN models trained on labeled agricultural image datasets to classify crops and weeds accurately.
3. (400) as claimed in claim 1 , wherein the water footprint calculation system utilizes user-input data and environmental parameters to assess the blue, green, and gray water footprint of crops, aiding in sustainable irrigation planning.
4. As claimed in claim 1, (300) a soil moisture sensing system integrates real-time sensor data and machine learning algorithms to optimize irrigation schedules and prevent overwatering or drought stress.
5. In (200), the system generates real-time crop health reports, including weed detection results, soil moisture levels, and water footprint insights, providing actionable recommendations for farmers.