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(57) Abstract :
Real-Time Soil Chemistry Assessment Across Diverse Crop Fields Utilizing Machine Learning ABSTRACT The invention relates to a system and method for real-time soil chemistry assessment across diverse crop fields using machine learning. A network of soil sensors deployed throughout the field collects real-time data on key soil parameters such as pH levels, nutrient concentrations, and moisture content. A machine learning module is trained to analyze this data, generating predictive models for soil nutrient levels. The real-time assessment module utilizes these models to provide instant and accurate soil chemistry assessments. The system offers dynamic adaptability, compensating for variations in soil types and environmental conditions. Features include automated recommendations for soil amendments, spatial correlation of nutrient levels, and a feedback loop for continuous model refinement. The invention empowers farmers with actionable insights, optimizing crop management decisions and promoting sustainable agricultural practices.

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