SporeSmart

Carbon Craft Partners

Surveillance and Sustainable Management of Fusarium Diseases in staple crops, a significant global threat to food security.

This UK-Brazil-Ghana collaboration is piloting AI-driven surveillance in Ghana to enable earlier detection and faster interventions laying the foundation for predictive alerts that help farmers act sooner. The project also trials a bio-pesticide to support the transition away from chemical fungicides.

Farmers

Government agri stations

Minstry of food and agriculture

EPA

Agri distributors

Scale

Early detection, treatment and timely intervention.

- Broader farmer engagement and training.
- Local surveillance network integrated with weather models.
- Predicative analytics and bio-pesticides.
- Partnerships with supply chains.

Pilot

Faster, scalable solutions to reduce food losses.

- Early detection using Smart Agri's (Brazil) spore collector device.
- Laboratory analysis by CSIR-CRI to identify spores.
- Russell Bio Solutions to develop AI tool to identify spores.
- Trial of Russell Bio Solutions (UK) bio-pesticide, Dynamic WP.

Research

CSIR-CRI Ghana

Identification of spores from symptoms on leaves

Problems points

- Ghana's legumes, cereals and other staple crops highly prone to fungal diseases.
- Fusarium outbreaks cause billions in global crop losses, contributing to major economic and food security challenges.
- Burning of diseased crop debris and carbon emissions.
- Late detection, calendar spraying and the use of synthetic pesticides.

MMVSense · Swansea University Prifysgol Abertawe · UKRI Innovate UK · CSIR Ghana · SMART AGRI · Russell BIO Biorational Crop Management

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