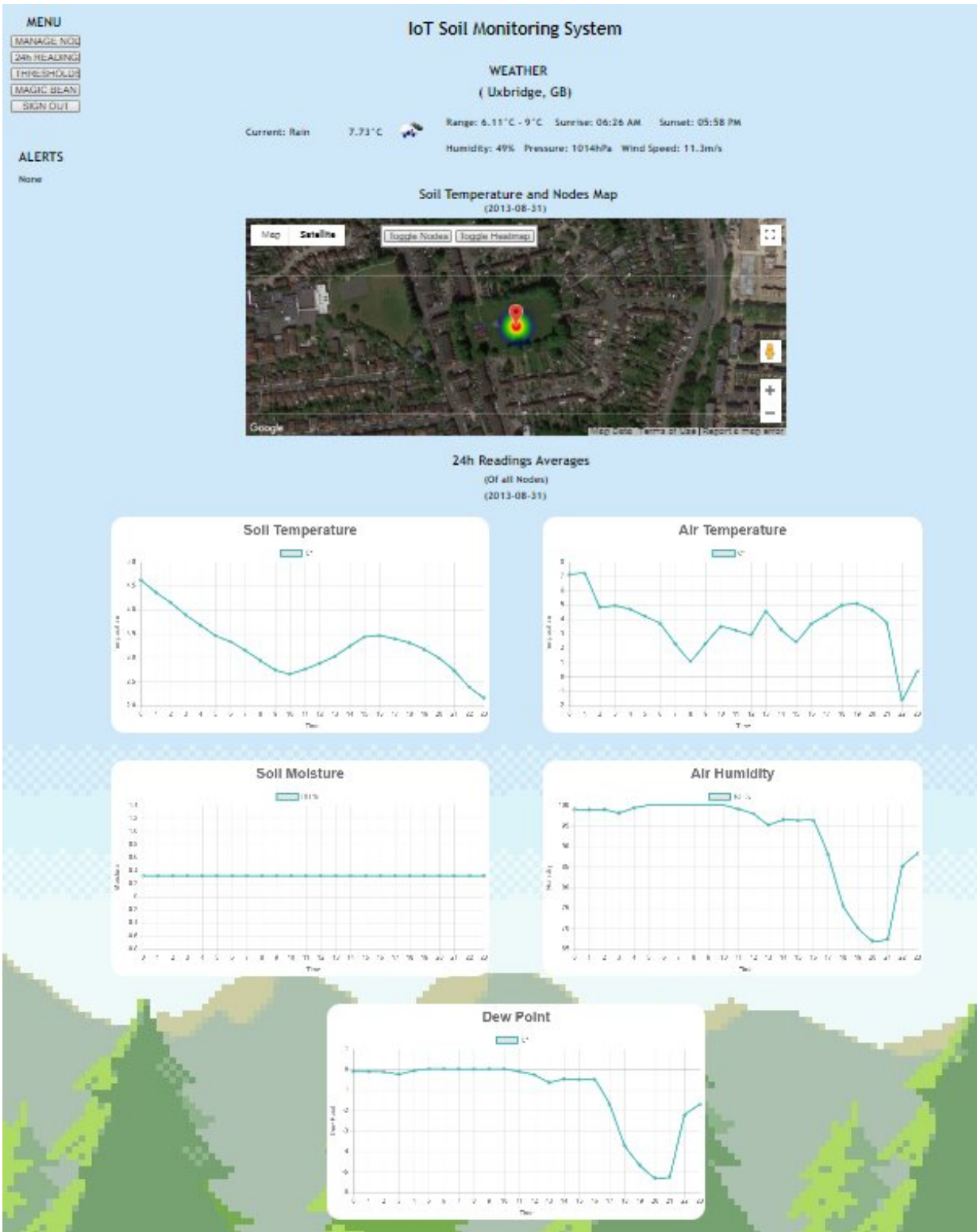


# AI magic bean could save farmers millions

November 27 2019, by Hayley Jarvis

---



Feedback from soil monitor sent to app. Credit: Brunel University

Farmers across the world could jack up giant profits using an Artificial Intelligence soil monitoring system developed at Brunel University London.

By collecting data about soil and growing conditions, the 'magic bean' helps farmers boost crops, cut waste and save time, money and water.

It comes after France this year saw record temperatures of 49.5 °C, the US had its wettest spring since 1995 and severe frost threatened Brazil's coffee harvest.

The Brunel algorithms could help producers work around freak weather triggered by [climate change](#) and unplanned supply problems after Brexit.

"We have a way of using data to make crops grow better, worldwide," said electronic engineer Dr Tatiana Kalganova.

Farmers can plant one or many of the £92 pods into soil. Each houses sensors that collect hourly data on growing conditions. Without Wi-Fi, GSM or an [internet connection](#), it uses a low-power Internet of Things (IOT) radio to feed the results directly to the internet.

Heat maps and snapshots of changes in air and [soil temperature](#) and [moisture levels](#), shown on a website or app, let farmers figure out what the soil needs and where. This means they can make cost-saving choices, such as watering a particular field only where and when the land needs it.



Magic bean soil monitor. Credit: Brunel University

Air and soil stats for each farm are fed to a central server which uses intelligent algorithms to predict what soil temperatures (to within 0.2 °C) and moisture levels will be in an hour's time.

"Currently farmers spread water, nutrients and pesticides equally across the whole land," explains researcher, Lorenzo Cucurachi. "But not all land has the same type of soil or behaves the same way.

"This technology can be used to analyse the [soil](#) and understand how it differs across the land, how it holds the moisture and for how long, which is important for the plants. This is how it helps optimise resources utilisation and cuts costs."

Provided by Brunel University

Citation: AI magic bean could save farmers millions (2019, November 27) retrieved 26 April 2024 from <https://phys.org/news/2019-11-ai-magic-bean-farmers-millions.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.