

Bayer pilots unique generative AI tool for agriculture

15 March 2024 | News

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Bayer announced the pilot of an expert GenAI system to benefit farmers and up-level agronomists in their daily work. The company has been using proprietary agronomic data to train a large language model (LLM) with years of internal data, insights from thousands of trials within its vast testing network, and centuries of aggregated experience from Bayer agronomists around the world.

Bayer has developed an expert system that quickly and accurately answers questions related to agronomy, farm management, and Bayer agricultural products. Instead of a time-consuming process, the intuitive system responds to natural language and can generate expert information within seconds. Validated by agronomists, the pilot is already unlocking productivity for Bayer teams in the United States while significantly outperforming out-of-the-box LLMs currently serving the agricultural market.Â Â

The future benefit in comparison to today's reality: A farmer asks their agronomic advisor a series of detailed questions about a product's characteristics, performance under specific conditions, and application rates. Today, the advisor searches online materials, sends text messages to colleagues, gathers information from multiple sources, and puts together a response, all while the farmer waits hours or days for urgently needed information. Bayer's expert GenAI system is changing the game, making better information more quickly and readily available.

"Our unique GenAI system has the potential serve agronomists and benefit farmers all over the world, further advancing AI as an indispensable technology for agriculture," said Amanda McClerren, CIO and Head of Digital Transformation & Information Technology for Bayer's Crop Science division. "We'll continue to use traditional AI to develop better products, and we're also committed to harnessing new GenAI technology in a thoughtful way that augments and supports knowledgeable experts across the industry, bringing value to farmers and those who serve them."

Developed in collaboration with Microsoft as leading technology partner and Ernst & Young (EY) as an industry partner, Bayer is exploring ways to integrate the expert GenAI system into its digital offerings, and the company anticipates broad opportunities for collaboration with other agricultural offerings and partners. Designed as a global capability, the tool will benefit millions of smallholder farmers in the future by democratizing access to agronomic advice and product information critical to feeding communities and improving global food security.

Bayer targets to expand the pilot of the expert GenAI system to selected agronomists and potentially farmers as early as this year, while continuing to advance a separate GenAI prototype allowing users to directly query their own farm data. Because they also pull insights from closed data sets, these GenAI tools are unique for agriculture and will bring more meaningful value to farmers, agronomists and other industry users, compared to out-of-the-box LLMs that only use open-source data.