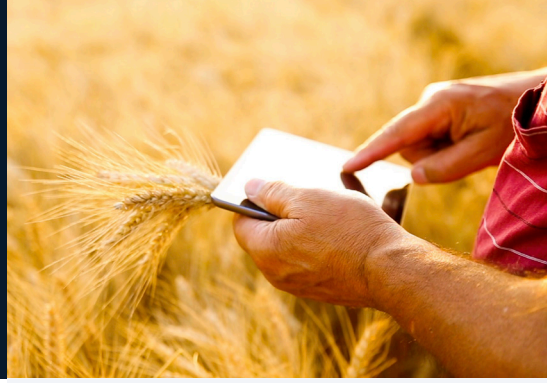
Watson Decision Platform for Agriculture

AI-driven insights for the agriculture ecosystem



Increasing consumer demand for greater food quality and sustainability has sparked a transformation in agriculture as growers strive to meet these heightened expectations while improving output.

While various solutions for using data to improve profitability and yield larger harvests have been proposed, certain barriers have led growers to resist digital transformation and instead stick with traditional techniques. For example, many of these approaches place too much dependence on the grower taking manual steps to make the solution function or rely on remote internet accessibility to gather the necessary information. Consequently, tremendous amounts of agricultural data are generated, but never used.

Faster, smarter decisions for agriculture

Watson Decision Platform for Agriculture helps overcome these obstacles by combining the power of Artificial Intelligence (AI), analytics, and predictive insights with unique agricultural Internet of Things (IoT) data, the expertise of veteran industry leaders, and decades of IBM research.

The result is a suite of customized low-cost solutions that help stakeholders across roles make faster, more informed agricultural decisions to support:

- **Increased profitability** by yielding more bushels or tons per hectare across common crops.
- **Improved sustainability** with deeper insights into factors such as crop input optimization, energy consumption, land and water use, soil conservation, soil carbon content, greenhouse gas emissions.
- **Higher quality** such as increased protein content in barley or sugar content in beets.

Fulfilling the promise of digital agriculture

Watson Decision Platform for Agriculture begins by creating an electronic field record (EFR) as the single source of truth for each farm. Similar to the electronic medical records that have become crucial to the healthcare industry, the EFR is populated with premium, exclusive data such as:

- **The world's most accurate weather data** from The Weather Company, including historical data, near-real-time observations, and forecasts fifteen days in advance as well as seasonal and subseasonal trends.

Better decisions across the entire ecosystem

The Watson Decision Platform for Agriculture also automates data handoffs between stakeholders across functions, creating a more transparent, connected ecosystem and driving value for non-growers in roles such as:

- **Food producers:** Integrated supply chains with greater harvest timing and volume predictability.
- **Commodities traders:** Custom predictive queries using multi-layer geospatial analysis to encourage price stability for growers.
- **Lenders:** Lower-friction loans for growers by validating yield performance versus potential.
- **Insurance:** Smarter rates for growers by using validated EFR data to improve risk insight and claims processing.
- **Governments:** Improved food independence strategies by giving growers and agencies a common set of tools.

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- **Soil data** such as moisture at multiple depths, nutrient content, fertility, and type.

- **Equipment data** gathered from IoT sensors in devices such as seed drills and sprayers.

- **Farm practice and workflow data** gathered from cooperative growers such as planting and harvesting dates, fertilizer and pesticide application rates, and harvest outputs.

- **High definition visual imagery** from multiple satellites, drones, and fixed-wing aircraft.

The Watson Decision Platform for Agriculture applies AI, machine learning, and advanced analytics to this EFR data to extract valuable insights and automatically generate guidance for smarter decisions. A unified dashboard enables growers to easily visualize data and alerts related to critical elements such as weather forecasts, soil conditions, evapotranspiration rates, and crop stress.

For example, AI visual recognition of drone-capture footage may be used to automatically identify certain types and severity levels of pest and disease damage. With this field-specific insight, growers can save time and money while reducing the impact on their field by better understanding how and when to spray.

The solution can deliver a variety of role-specific benefits such as:

- **Improved crop protection** by leveraging AI to better understand and proactively alert growers to critical daily crop stress levels, identify signs of pests and diseases, and more effectively assess current risk levels of crops.

- **Increased yield optimization** with benchmarking and validation against yield models for comparable soil and weather conditions as well as support for better decisions around irrigation, product application, and planting and harvest timing.

- **Smarter in-season trading** with productivity assessments and decision guidance as well as probabilistic weather conditions that feature detailed analysis of sub-seasonal and seasonal forecasts.

Contact us today to discuss how the Watson Decision for Agriculture Platform can you help make faster, more informed decisions in agriculture.

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