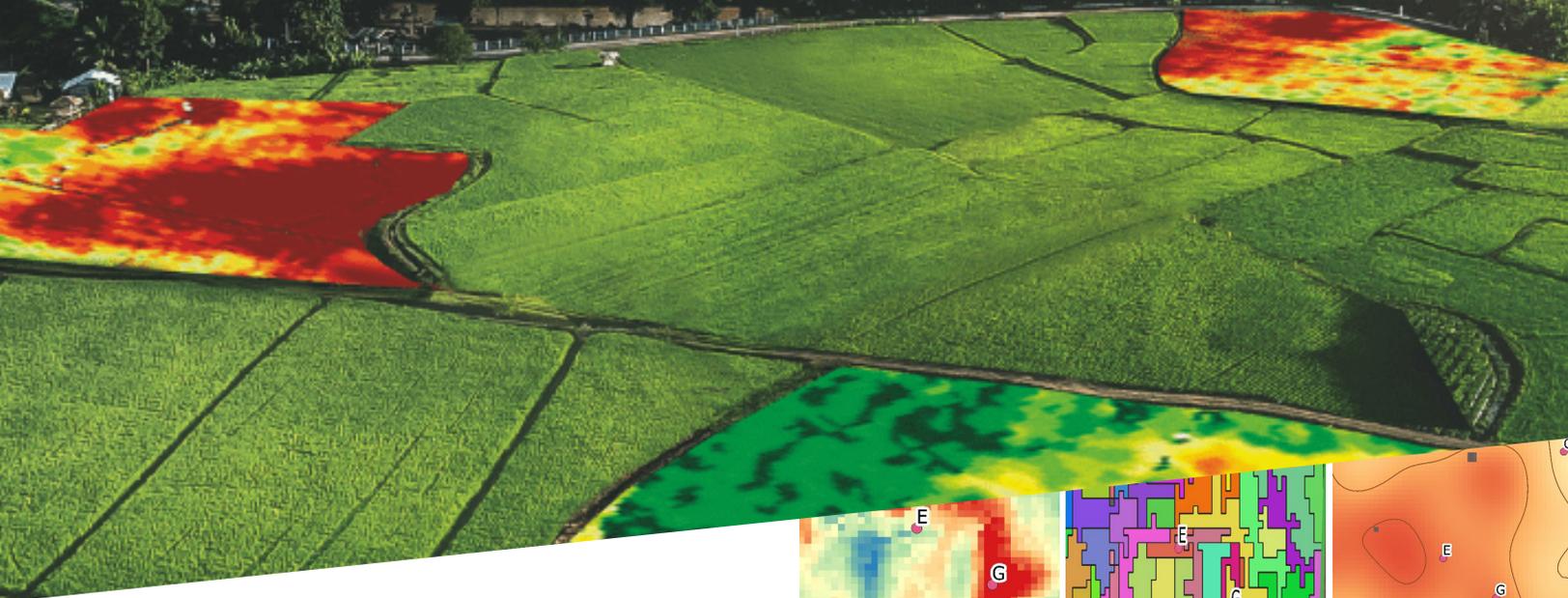


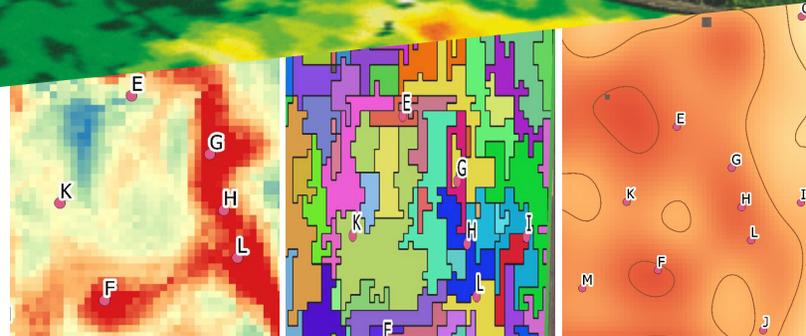
BOLDLY GROW



Introducing XAct™ Agriculture

At AXIOM GROUP we listen to the story land is telling us. Axiom XAct™ Agriculture uses multispectral and hyperspectral data in concert with Artificial Intelligence and Deep and Machine Learning to drive data-based decisions for a variety of applications within the agricultural sector.

Axiom XAct™ Agriculture can track crop yield as well as the environmental, and plant biological conditions that contribute to a good or bad yield, such as irrigation management, pest and disease risk analysis and cohort analysis for comparing similar subsets of fields.



Axiom's predictive models can inform operational decision-making for producers in several areas, namely:

- Predictive crop yield models from timeseries of soil, seeding, weather, satellite, and harvest yield data.
- Disease detection: Deep learning algorithms can distinguish between healthy and diseased leaves and identify different diseases.
- Optimized stocking rate and weight gain models with biomass measurement over growing season paddocks.
- Drought assessment
- Canopy chlorophyll content: to determine plant stress, including nitrogen deficiencies.





Axiom uses multispectral and hyperspectral Imagery collected by both Satellite and UAV (drones). Multispectral and hyperspectral imagery refers to images which contain colour bands beyond the normal RGB values. These methods collect light waves that are beyond human eye perception and are processed into additional colour bands. Hyperspectral data not only distinguishes different land cover types, but it also provides the detailed characteristics of each land cover such as minerals, soil, man-made structures (buildings, roads, etc.) and vegetation types.

Utilization of satellites for data collection is not new but this is not your grandparents' satellite either. Using satellite provides the opportunity to look at data from the past, 5-7 years in some cases, and combine it with current data for deeper analysis.

Axiom Applied Analytics has constructed a "brain," which analyzes data collected using various technologies and sensors, allowing us to view the world in a different way.

XAct™ Agriculture by Axiom can deliver analysis of soil organic matter and soil organic carbon quantification derived from 788 soil samples (and growing)

and satellite data spanning five years in Saskatchewan. The data produced from Axiom's models provide:

- Soil organic matter and soil organic carbon quantification
- Soil nutrient, micronutrient and overall condition quantification, including:
 - Nitrogen
 - Phosphorous
 - Potassium
 - Sulphur
 - pH
 - Mg, Ca, Na, Zn, Cu, B, Al

Other applications:

- Mineral Exploration
- Right of Way and Pipeline Monitoring
- Forestry
- Hydrocarbon Detection
- Environmental Remediation
- Crop Health Analysis
- Pest & Invasive Species Detection
- Species Classification & Stand Discrimination
- Biomass & Growth Monitoring

