# Improving crop production in New York: combining artificial intelligence with low-cost drone technology

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THE PROBLEM: Developing technology permits the collection of vast amounts of plant phenotypic data, but our capacity to analyze and draw meaningful insight is limited. Such limitations have created a significant knowledge gap in understanding how genetic information is translated into complex phenotypes, slowing the development of crop varieties beneficial to NYS.

APPROACH: Utilizing the latest high-throughput phenotyping approaches in parallel with advanced data analytic techniques, we are starting to unravel the complexities of economically important disease phenotypes. For example, we are combining artificial intelligence algorithms with low-cost drones for real-time, in-field detection and quantification of Northern Corn Leaf Blight (NCLB), a disease responsible for over $2 billion of economic damage nationally.
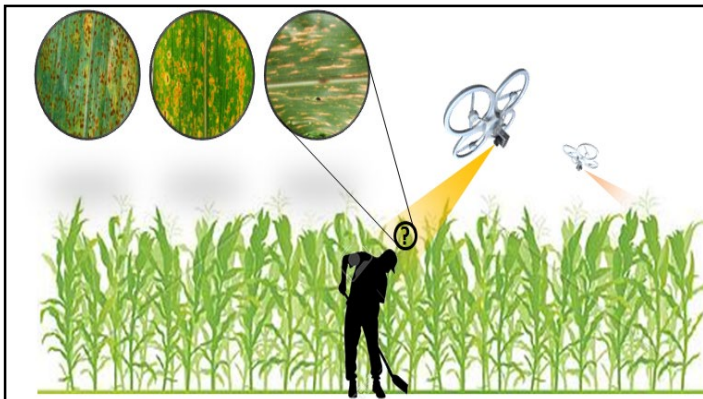
OUTCOMES: By better understanding how plants interact with their environment, we will be able to harness the coming wave of agronomic data to improve the prediction accuracy of crop performance, develop critical tools to monitor and manage disease outbreaks and spread, and provide growers with disease resistant corn hybrids.