

Most plant research happens in highly controlled lab conditions. Unfortunately, the plants that human beings care most about grow outside where weather, bugs, and animals all impact their growth and health. PhotosynQ is a platform for measuring plant health at a fundamental level in the field, where it matters most, and collecting that data across the world to create a global, open access dataset of plant health and physiological activity.

The PhotosynQ Platform and the MultispeQ instrument were developed in the Kramer Lab, part of the MSU-DOE Plant Research Laboratory. PhotosynQ connects the MultispeQ to a mobile device that uploads crop physiological data and key metadata to the PhotosynQ website ([www.photosynq.org](http://www.photosynq.org)) where users can visualize and map data, aggregate results, and apply sophisticated analytical tools. In the last few years, collaborators from more than 15 countries have collected hundreds of thousands of measurements on a diverse range of plant breeding, agronomic and plant physiology projects. Here are a couple examples:

* On-station evaluation of Long duration pigeonpea [https://www.photosynq.org/projects/on-station-evaluation-of-long-duration-pigeonpea]
* Michigan State University – Wheat Performance Trials [https://www.photosynq.org/projects/michigan-state-university-wheat-performance-trials?hl=Michigan+State+University+-+Wheat+Performance+Trials]

The MultispeQ is a sophisticated and inexpensive hand-held photosynthesis meter capable of collecting many plant physiological and environmental parameters including fluorescence based parameters like qL, qP, ΦII, LEF, NPQ, and absorbance based parameters like vH+, gH+ ECSt and relative chlorophyll content. It can collect environmental parameters like temperature, relative humidity, barometric pressure, leaf temperature, light intensity, cardinal direction and tilt. For more information about these parameters and the instrument check out our publication in Royal Society Open Science (<http://rsos.royalsocietypublishing.org/content/3/10/160592>) or the frequently asked questions (<https://www.photosynq.org/faq/photosynthesis>).

In order to ensure that anyone at Michigan State University has access to this technology, we offer a series of packages and services (price available below). If you are interested, please contact us.

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