Metadata Records
Irrigation Innovation Consortium-Supported Project Datasets

Please use a separate sheet for each dataset. Answers are automatically saved.
Questions? Contact Diane DeJong: diane.de_jong@colostate.edu.

Thank you!

Question	Your answer
Project name	Multi-Environment Vertical Agricultural Technologies: Innovative Irrigation and Monitoring Solutions with Machine Learning Integration
Project background	The objectives of this proposal are to 1) determine whether computer vision can be used to measure the height and fresh weight of various microgreens species throughout production; 2) evaluate the effects dynamic light-emitting diode (LED) lighting on yield, operating costs (e.g., electrical energy consumption and water use), and quality attributes of microgreens; and 3) investigate whether the integrated computer vision and dynamic LED lighting can automate microgreens production to pre-determined quality and operating standards. As a result of this project, we expect to see a simplified workflow (which reduces labor cost) as well as increased and more uniform yield (which boosts profit margins).
Dataset name	Hypocotyl Length (cm)
Primary author Include first & last name, institution affiliation, and email address.	Joshua Craver, Colorado State University, joshua.craver@colostate.edu
Primary contact The primary contact may be the same or different from the primary author. Include first & last name, institution affiliation, and email address.	Joshua Craver, Colorado State University, joshua.craver@colostate.edu
Dataset description Please provide a brief, clear summary description of the dataset contents. Indicate as applicable: purpose and scope; time period; areas of investigation; and any other special characteristics.	Please refer to the Experiment Protocol for detailed informaiton regarding setup and data collection. Data was collected at the CSU Horticulutre Center in Fort Collins, CO using laboratory facilities. Height from the bottom of each tray to the highest point of the microgreen canopy was collected nondestructively (cm) beginning 2 (kohlrabi, mustard, radish) or 8 days (cilantro) after germination.
Spatial coverage Please be specific as possible about the geographic coverage of your data, and record the information according to defined standards, such as FGDC or the Getty Thesaurus of Geographic Names. You can enter lat/long data, county names, state names, etc.	The experiment was conducted at the CSU Horticulture Center in Fort Collins, CO.
Temporal coverage Describe the temporal coverage of your dataset: Start: Time of day, Date, Month, Year Finish: Time of day, Date, Month Year	The experiment was conducted indoors, with specific envionrmental conditions reported in the Experiment Protocol. Fall 2020 - Spring 2021
Re-use limitations Describe known problems or caveats that would limit reuse of the data (e.g., uncertainty, sampling problems, blanks, quality control samples) and/or that future potential users of your dataset should know about. Or indicate "None."	None
Citations Please include full citations and DOIs for articles published based on or related to this dataset. Or indicate "None."	None
Keywords Please add a few appropriate National Agricultural Library keywords: https://agclass.nal.usda.gov/vocabularies/nalt	microgreens; light emitting diodes; far-red light
Tags Please add a few of your own user-defined tags that would be useful to others who might use your dataset in the future.	
Acronyms & abbreviations Please define any acronyms, site abbreviations, or other project specific designations used in your dataset. Or indicate "none."	LED light-emitting diode; PPFD photosynthetic photon flux density; FR far-red; B blue; G green; R red;
Other dataset storage location Has this dataset already been uploaded elsewhere? Yes or No Reasons may include a requirement as part of publishing a paper or storing data on GitHub or other locations to make accessible to others. If yes, please provide the link or other information to explain where the dataset is located and where or how it can be accessed.	No other dataset storage location