**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 of 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**
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**Dataset description**
Please refer to the Experiment Protocol for detailed information regarding setup and data collection. Data was collected at the CSU Horticulture 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**
The experiment was conducted at the CSU Horticulture Center in Fort Collins, CO.

**Temporal coverage**
The experiment was conducted indoors, with specific environmental conditions reported in the Experiment Protocol. Fall 2020 - Spring 2021

**Re-use limitations**
None

**Citations**
None

**Keywords**
microgreens; light emitting diodes; far-red light

**Tags**

**Acronyms & abbreviations**
LED light-emitting diode; PPFD photosynthetic photon flux density; FR far-red; B blue; G green; R red;

**Other dataset storage location**
No other dataset storage location