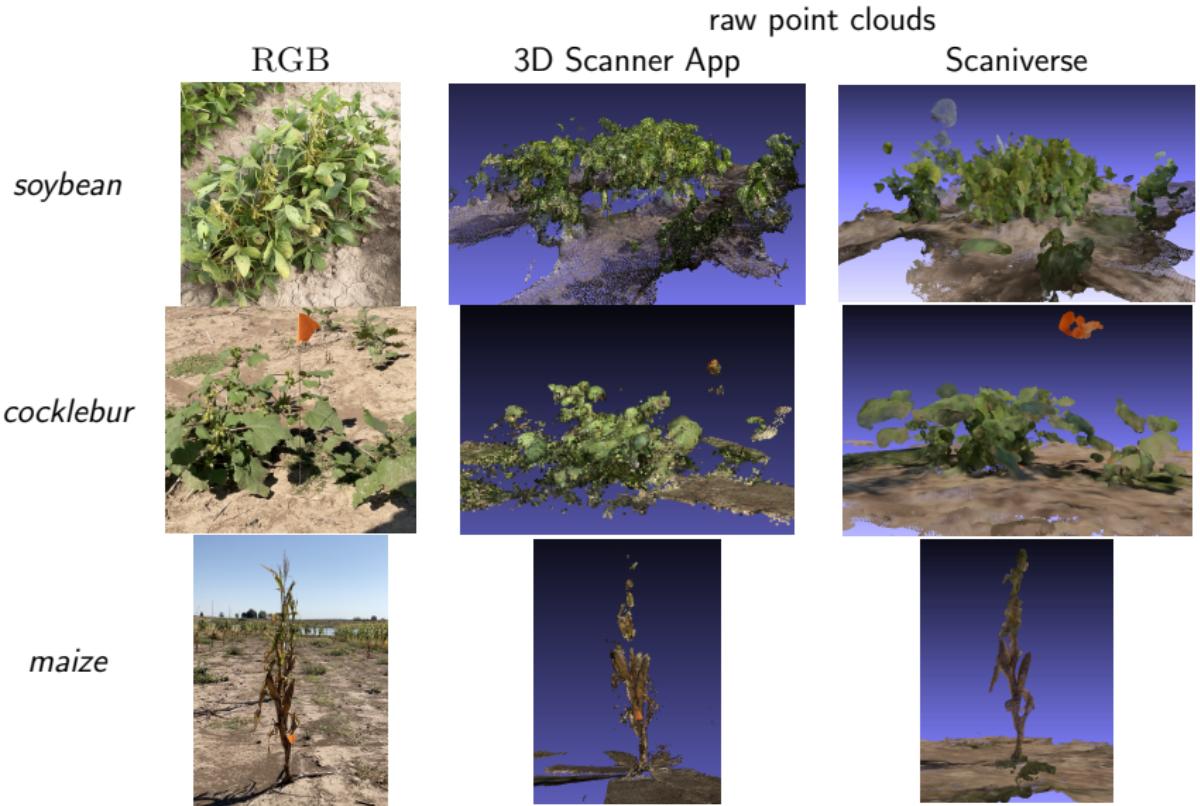


# Rationale

- 3D reconstructions often use Structure from Motions (SfM) of 360° RGB videos, but can benefit from depth information.
- LiDAR is less sensitive to ambient light, making it a very good candidate for agricultural applications.
- LiDAR is now available in consumer grade devices, such as Apple's iPads and iPhones.
- There are many free applications to get 3D point clouds.
- We explored 2 apps for collecting point clouds of field plants: 3D Scanner App and Scaniverse.

# Point Cloud Quality depends on Plant Morphology



# More Points make Smoother Plants

plant	3D Scanner App	Scaniverse
soybean	197,819	1,289,299
cocklebur	53,913	1,102,817
maize	96,807	1,503,680

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