Robotic Plant Care Assistant

Tech ID: 25944 / UC Case 2016-376-0

CONTACT

Amir J. Kallas
ajkallas@ucdavis.edu
tel: .



ABSTRACT

Researchers at the University of California, Davis have developed a robotic system can apply signaling to the crops and detect any important needs for the plant.

FULL DESCRIPTION

One of the main problems with the commercial development of automatic weed control is the feature of reliable recognition. The current technology used for weed detection depends on row patterns to detect crop row and unwanted crop plants. There is a need for an invention that can improve intra-row weed control and an automatic system that conducts plant care.

Researchers at the University of California, Davis have developed a system that uses crop signaling to identify crops and weeds. The signals are produced by biomarkers that utilize fluorescent proteins and physical labels (attached to the crop) for accurate identification. The system utilizes unique signatures for each crop and transfers that knowledge for later use in the automated weed management and plant care. The machine can detect the location of all plants that require care using a high spatial resolution map. It can also be utilized to selectively locate and get rid of individual weeds in the intra-row area without damaging the surrounding crops.

APPLICATIONS

- Weed detection
- Intra-row farming
- Plant care
- Farming

FEATURES/BENEFITS

- Accurate identification of weed
- High spatial resolution map used to locate weed

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,993,430	05/04/2021	2016-376

INVENTORS

- Billing, Ryan C.
- Fennimore, Steve
- Giles, Durham K.
- Neilson, Leland R.
- Nguyen, Thuy T.
- Roach, Jedediah I.
- Slaughter, David C.
- Vannucci, Burt F.
- Vuong, Vivian L.

OTHER INFORMATION

KEYWORDS

plant assistant, crop detection, weed detection, crop signaling, robotic plant assistant

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Devices
  - Processing and Packaging

RELATED CASES

2016-376-0

University of California, Davis
Technology Transfer Office
1 Shields Avenue, Mrak Hall 4th Floor,
Davis,CA 95616

Tel: 530.754.8649
techtransfer@ucdavis.edu
https://research.ucdavis.edu/technology-transfer/
Fax: 530.754.7620

© 2016 - 2021, The Regents of the University of California
Terms of use
Privacy Notice