# Robotic Plant Care Assistant

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

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## 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

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