PURDUE INNOVATES | Office of Technology Commercialization

Cellulosin has Synergistic Effect with Isoxaben

A new combination low-dose, low-cost herbicide fights resistant weeds and reduces the chance of developing further resistance.

According to the Weed Science Society of America, if weeds were left to grow freely, it would result in a 50 percent reduction in corn and soybean yield in the United States. This has led to herbicides being used on 97 percent of corn planted in a report by United States Department of Agriculture. The widespread use of herbicides has led to herbicide resistant weeds. This has created a need for novel herbicides to be used to control weed growth.

Researchers at Purdue University have developed a combination low dose herbicide. The herbicide contains synergistic herbicides cellulosin and isoxaben in nM concentrations. A 10 days study found that the novel combination herbicide inhibited root length growth by 50 percent for Arabidopsis plants.

Advantages:

-Low dose herbicide

-Low cost herbicide

-Reduced chance of resistance development

Potential Applications:

-Herbicide development

TRL: 3

Intellectual Property:

Provisional-Patent, 2018-09-04, United States | Utility Patent, 2019-09-04, United States | DIV-Patent, 2022-10-13, United States | CON-Patent, 2023-11-06, United States

Technology ID

2019-ZHAN-68367

Category

Agriculture, Nutrition, & AgTech/Precision Agriculture & Smart Farming

Chemicals & Advanced Materials/Specialty & Performance Chemicals

Authors

Chunhua Zhang (DECEASED)

View online

Keywords: combination low dose herbicide, synergistic herbicides, cellulosin, isoxaben, weed management, herbicide resistant weeds, novel herbicides, low cost herbicide, reduced resistance development, Arabidopsis plants, Agriculture, Crop Improvements, Crop Management, Crop Yield