PURDUE INNOVATES | Office of Technology Commercialization

Static Fractionation of Corn Kernels

An enzyme-directed method fractionates corn into components (germ, starch, sugar, pericarp) suitable for chemical building blocks, offering corn biorefineries alternative revenue and adding value to the feedstock.

As tax subsidies for ethanol production are phased out, corn biorefineries will be searching for alternative sources of income.

Purdue University researchers have developed an enzyme-directed method of fractionating corn into its components: intact germ, starch, sugar, and pericarp. These components are then suitable for production into chemical building blocks to make polymers. By dividing the corn into useable fractions, it adds value to the corn and provides corn biorefineries with alternative revenue options. In addition, the amount of corn consumed by chemical production would be less than what is currently used to produce ethanol, so it would have little impact on food production.

Advantages:

-Provides corn biorefineries with alternative revenue source

-Little impact on food production

-Renewable source for chemical production

Potential Applications:

-Biotechnology

-Food Industry

TRL: 3

Intellectual Property:

Provisional-Patent, 2012-04-12, United States | PCT-Patent, 2013-04-12, WO | NATL-Patent, 2013-04-12, Brazil | NATL-Patent, 2014-10-10, United States

Keywords: Corn biorefineries, enzyme-directed fractionation, corn components, intact germ, starch, sugar, pericarp, chemical building blocks,

Technology ID
66059

Category
Biotechnology & Life Sciences/Bioprocessing & Biomanufacturing
Chemicals & Advanced Materials/Green & Bio-Based Chemistry

Authors
Youngmi Kim
Michael R Ladisch

Further information
Aaron Taggart
adtaggart@prf.org

View online

polymers, alternative revenue, renewable source, biotechnology, food industry, Biotechnology, Food and Nutrition, Food Processing