

Crop Fibers

BIOREFINING PROCESS SOURCE

Esterification/transesterification, wet mill corn processing

DESCRIPTION

The lignocellulosic portion of plants that remain after esterification. This includes cellulose, hemicellulose and lignin.

REPRESENTATIVE BIOBASED PRODUCT OPPORTUNITIES

BIOBASED PRODUCT	CLASSIFICATIONS	MARKET OPPORTUNITY	MARKET SIZE
Corn fiber oil	Plant-based oil	As a pharmaceutical, corn fiber oil may reduce serum cholesterol levels.	80,000 tons could be produced at the corn processing industry's current level of production.
Corn fiber gum	Gum	This can act as an emulsifier, soluble dietary fiber or a thickener. Unlike other gums, corn fiber gum is white, which is desirable for food applications.	Unknown
Cellulose/ arabinoxylan (CAX) complexes	Bulking agent	A white powder that can be extracted from de-fatted and de-starched fiber, CAX complexes are one-third arabinoxylan, which can absorb 100 times its weight in water.	Unknown
Glucose	Sugar	\$140/ton ¹	Large
Polyamine conjugates	Pesticides	The efficacy of these as natural pesticides is being investigated.	Unknown
L-Arabinose	Sugar	L-Arabinose is naturally occurring L-sugar. It is used in pharmaceuticals and may be used in high intensity sweeteners.	Small

REFERENCES

¹ Elliott, Douglas C. et al. Biorefinery concept development based on wheat flour milling.
<http://www.pnl.gov/biobased/docs/wheat.pdf> (11 Apr 2004)

Stanley, Doris. "Corn Fiber Yields Oil and Gum Products." USDA Agricultural Research Services.
<http://www.ars.usda.gov/is/AR/archive/dec97/corn1297.htm> (3 June 2004)

Crop Conversion Science and Engineering Research Unit. "New Co-Products from Corn Fiber and Other Grain Processing Fractions." Eastern Regional Research Center.
<http://www.arserrc.gov/ccse/BiofuelsandBiobasedProd.htm> (3 June 2004)