

SCHEDULE OF FEES

Wet Milling

100 g.....\$120..per sample*
1 kilogram\$500....per sample
Pilot scale\$2000..... per day**

Dry Milling

1 kilogram\$100....per sample
Pilot scale\$2000..... per day

RVA.....\$30....per sample

*per replicate sample

**contact us to determine the amount of time required for your processing needs.

GLP analyses: please contact us for fees information.

Protein and fat analyses can be conducted on milling fractions.

Analyses are conducted by Illinois Crop Improvement Association, Champaign, Illinois. Costs are determined in advance on a case by case basis.

CONTACT

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UNIVERSITY OF ILLINOIS

BIOPROCESS RESEARCH
AND
TESTING LABORATORIES

*Procedures and Routine Testing
Schedule of Fees*



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BIOPROCESS RESEARCH AND TESTING

The bioprocess research program at the University of Illinois offers five milling procedures to determine processing characteristics of corn. Laboratory procedures illustrate milling differences due to genetic material, drying conditions, growing environment and other factors.

Tests follow strict standard operating procedures and follow methods similar to Good Laboratory Practices (GLP). Studies using fully documented GLP methods or large studies can be conducted under contractual agreements. Confidentiality and control of genetic material are maintained at all times.

WET MILLING

The wet milling process is used to produce starch (99.6% purity) as the primary product. Starch can be used to produce many biobased products, including high fructose corn syrup, ethanol and polylactic acid. Starch yield is affected by hybrid, growing conditions and drying methods. Starch also can be characterized by Rapid Visco Analysis (RVA).

100 gram Wet Milling

Wet milling at 100 g scale is used by seed companies to determine potential of genetic strains for high starch yields (extractable starch). The procedure gives data that accurately and precisely predict starch yields, and provides starch (~60 g), gluten, germ, coarse fiber, fine fiber and steepwater. Germ and coarse fiber are separated by screening. To determine milling yields, a total of 120 g corn is needed. The laboratory typically processes 1,500 to 2,000 samples each year.

1 kilogram Wet Milling

The kilogram scale procedure uses equipment similar to the commercial process. Milling fractions produced are starch (~600 g), gluten, steepwater, germ and fiber. Germ is separated by density and fiber removed by screening. Yields of starch and coproducts have been found to reflect yields found in the commercial process.

Pilot Scale Wet Milling

When sufficient product is needed for additional testing, pilot scale processing may be useful. Batch sizes are usually 25 kg and can yield approximately 15 kg starch. A Bauer mill is used for first and second grind and a hydrocyclone is used to separate starch and gluten. The procedure results in milling fractions of starch, gluten, steepwater, germ and fiber.

DRY MILLING

The dry milling process is used to produce large pieces of endosperm, called grits, that are used in a variety of breakfast cereals, snack foods and bakery products. The prime product from dry milling is the largest endosperm pieces, flaking grits. Dry milling fractionation is hybrid dependent. Products can be characterized by RVA.

1 kilogram Dry Milling

The kilogram scale procedure can predict accurately yields of prime flaking and smaller grits for cereal and snack food processors, as well as flour and hominy feed coproducts.

Pilot Scale Dry Milling

The pilot scale procedure uses the industry standard Beall degerminator for initial fractionation of the kernel. Batch size is usually 40 to 45 kg. The procedure can be used to produce enough coproducts for additional testing and/or animal feeding trials.

All laboratory procedures are checked with reference corn samples to verify yield data and reproducibility.