

Instructions and Definitions
Wet Mill Producers of Ethanol (M311C)

1. **Scope of survey** — This survey covers all establishments generating corn based products and by-products using the wet mill process to produce ethanol.
2. **Figures to be reported** — Companies with more than one establishment manufacturing the products covered by this survey are requested to complete a separate report form for each location. If you have not received a separate report form for each of your establishments, please write if you need additional forms. A separate report form is required for each wet mill which your company operates.
 - a. **Materials and oils to be included on this report**
 1. Corn or other grain processed by steeping whole kernels in water to release starch including those used in the distillation of beverage alcohol, industrial alcohol, and fuel alcohol.
 2. Report all quantities of ground corn and products produced for your own account or on a toll basis. All establishments reporting corn by-products should report corn grind. Corn grind is a necessary input in the production process of corn by-products.
 - b. **Wet mill products**
 1. *Food grade corn oil*: Corn oil extracted during the wet mill process and used in products for food preparation. Food grade oil is used in frying oil and is also a key ingredient in margarines.
 2. *Industrial grade corn oil*: Corn oil extracted during the wet mill process and used for industrial purposes. Some examples include the manufacture of lubricants, biodiesel fuels, soap, salves, paint, inks, and insecticides.
 3. *HFCS 42*: High fructose corn syrup which contains 42% fructose. Used in beverages, processed foods, cereals, and baked goods.
 4. *HFCS 55*: High fructose corn syrup which contains 55% fructose. Used in soft drinks.
 5. *Glucose & Dextrose*: Sugars produced from fermentation.
 6. *Starch*: A white, tasteless, solid carbohydrate occurring in the form of minute granules in plants. Starch is an important constituent of rice, corn, wheat, beans, potatoes and many other vegetable foods.
 - c. **Wet mill co-products**
 1. *Corn gluten meal*: A high protein concentrate, which typically contains 60 percent, 2.5 percent fat, and 1 percent fiber. It is a valuable source of methioine. Corn gluten meal also has a high level of xanthophylls, which makes it an attractive ingredient in poultry diets as a source of yellow pigment.
 2. *Corn gluten feed*: A medium protein ingredient composed of the bran and fibrous portions of the corn kernel. It may, or may not contain the condensed corn extractives. This by-product can be sold as wet or dry feed ingredient. The bran and condensed extractives (sometimes called germ meal) are combined and dried in a rotary dryer. Typically corn gluten meal contains 21 percent protein, 2.5 percent fat, and 8 percent fiber.
 3. *Wet corn gluten feed*: Wet corn gluten feed (45 percent dry matter) is perishable in 6-10days and must be fed within that time period or stored in an anerobic environment.
 4. *Corn germ meal*: Medium protein ingredient obtained from the corn germ fraction after the corn oil has been removed. It contains 20 percent protein, 2 percent fat, and 9.5 percent fiber. It has an amino acid balance that makes it valuable in poultry and swine diets.
 5. *Steepwater (liquor)*: A high energy liquid feed ingredient. It contains about 25 percent protein on a 50 percent dry matter basis. This product is sometimes combined with corn gluten feed, or may be sold separately as a liquid protein source for beef or dairy rations.
 6. *Carbon dioxide (CO2)*: Carbon dioxide is present during the fermentation stage of ethyl alcohol production and many wet mills collect that carbon dioxide and market it as a co-product. Some uses of carbon dioxide include carbonating beverages, manufacturing dry ice, and flash freezing meat.