



# MORE THAN BIOFUELS

## CORN FOR ETHANOL ALSO GOES HERE



In recent years, the expanding ethanol industry has meant success for corn growers looking for new markets for their versatile product. While field corn has hundreds of different uses, the amount going into ethanol has increased sharply, helping clear the air, soil and water of contaminants and providing nutritious feed for livestock via some important coproducts.

At present, an estimated 3 billion bushels of field corn is used for ethanol production, a number expected to increase in the years to come. Besides ethanol, this corn also will result in key coproducts that replace some of the corn going straight into feed for livestock. That's because only the starch portion of the corn kernel (about two-thirds of the kernel by weight) is used to produce ethanol. The kernel's remaining protein, fat, and other nutrients and minerals are passed through the process and used as animal feed, commonly known as distillers grains. In some cases, ethanol plants also remove the fat from the kernel and use it to produce corn oil for human food use.

Understanding these various coproducts requires knowing there are two processes by which corn is converted to ethanol, a dry milling process and a wet milling process.

Each bushel of corn produces **2.8 gallons of fuel ethanol**.

In the dry milling process, each bushel of corn produces **17.5 pounds of distillers dried grains with solubles** in addition to the ethanol. A high-protein livestock feed, corn distillers grains contain all the nutrients from the incoming corn minus the starch.

In the wet milling process, **13.5 pounds of gluten feed** are produced from each bushel of corn used. Corn gluten feed is rich in highly digestible fiber and is processed as either dry pellets or wet feed. These feeds are widely used for dairy and beef cattle, poultry, swine and pets. This process also results in **2.6 pounds of gluten meal**, a high-protein concentrate that is excellent cattle feed providing a high level of rumen bypass protein. Finally, this process also results in **1.5 pounds of corn oil** from each bushel used.

NOTE: A bushel equals 56 pounds, about the size and weight of a large bag of dog food.