

## Miracle Corn

Corn/acre produces 450 g of ethanol plus the protein/meal/oil equivalents (pounds) produce by soybeans /acre

Here is why: Corn is categorized as a C4 plant, meaning it has superior water utilization and genetic capabilities to fixate massive quantities of biomass above/ below ground through photosynthesis. This provides corn with the extraordinary ability to operate better than other categories of plants in conditions of drought, high temperatures, and nitrogen or CO<sub>2</sub> limitation. Additionally, corn's unique, very deep ,huge root system enables it to capture and utilize leaching fertilizer nutrients, such as nitrogen and phosphorous, to move them back to the surface as growing corn plants . Historically C4 grasses, such as corn, are nature's special tool to recycle nutrients in this manner to protect ground water.

**A multi-year USDA research project recently confirmed that no-till corn equaled switchgrass in SOC (soil organic carbon) formation, and that over half the increase in SOC was below one foot depth. The researchers estimated that deep soil SOC sequestration benefits of corn have been understated by 60 – 100% in modeling done to date.**

So-called “food vs. fuel” attacks have been conjured up by big oil as well as processed food producers and animal feeders who want subsidized U.S. corn to boost their profits. The ethanol industry eliminated the need for corn subsidies and lowered soybean prices by becoming a major new supplier of proteins (DDGS). World skyrocketing demand for soy proteins has been the primary driver for International Land Use Changes. Importantly: Corn/acre produces 450 g of ethanol plus the protein/meal/oil equivalents (pounds) produce by soybeans /acre.

Even Michael Pollan, an American author, journalist, activist, and professor of journalism at the UC Berkeley Graduate School of Journalism as well as a frequent critic of the current agricultural system, has effusive praise for corn's efficiency as a crop. “Few plants can manufacture quite as much organic matter (and calories) from the same quantities of sunlight and water and basic elements as corn.” Pollan goes on to praise corn's ability to extract carbon from the air in his book, *The Omnivore's Dilemma: A Natural History Of Four Meals*, when he states, “The C-4 trick represents an important economy for a plant, giving it an advantage...By recruiting extra atoms of carbon during each instance of photosynthesis, the corn plant is able to limit its loss of water and ‘fix’—that is take from the atmosphere and link in a useful molecule—significantly more carbon than other plants.”

**Substituting ethanol—derived from one of nature's most efficient converters of sunlight and water, most efficient carbon-fixing plants, and a highly efficient source of protein—for carcinogenic, oil-**

**derived, carbon-intensive and costly aromatic hydrocarbons offers society a rare win – win – win proposition.**