

Corn fields help clean up and protect the environment

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Reports of climate change, global warming and greenhouse gas emissions have been all over the news lately. What does this have to do with agriculture? After many decades of being pointed to as a source of environmental issues, field crop agriculture is being looked to as one of the solutions to global climate change. The basis for this environmental remediation affect is corn's and other crops' tremendous potential to remove carbon dioxide (CO₂), a major greenhouse gas, from the atmosphere. In fact, Michigan growers can now receive payment for storing carbon in the soil via private sector carbon credit trading managed through the Chicago Climate Exchange.

How much carbon dioxide does an acre of Michigan corn absorb in a growing season? That is a question that is often asked, and the answer may surprise many people. Our calculations show that number to be in excess of 36,000 lbs. of carbon dioxide per acre! Of course, much of that carbon is eventually returned to the atmosphere as the corn crop residue decomposes or the grain is consumed as feed or burned as biofuel, but farmers can maintain a significant amount of carbon in the soil with proper management including implementing reduced or no-till cropping systems. Currently, the Climate Exchange bases Michigan carbon payments on approximately 0.4 to 0.6 tons of carbon dioxide equivalent per acre per year depending upon your location and the specific management practices implemented. The price paid per unit of carbon is based annually upon current market prices.

When used as a renewable fuel source such as ethanol, corn also displaces petroleum-based gasoline, a significant contributor of carbon dioxide to the atmosphere. Each gallon of gasoline burned emits 19.4 lb. of carbon dioxide (5.3 lb of C) to the atmosphere. In fact, the USEPA estimates that the average car in the United States emits approximately 6 tons of carbon dioxide to the atmosphere annually. Current estimates put U.S. gasoline consumption at about 140 million gallons per year and climbing. The carbon emitted from gasoline is new additional carbon in the atmosphere – carbon that was formerly buried deep under the earth’s surface. Conversely, burning renewable fuels such as corn ethanol has the potential to be carbon neutral since emissions would be essentially recycled carbon.

Finally, in addition to the atmospheric environmental advantage of carbon sequestration, there are land-based environmental/agronomic benefits as well. Increased carbon levels in the soil provide better water infiltration, enhance nutrient cycling, help alleviate compaction and reduce surface run off.

To learn more about carbon credit trading, visit the [Michigan Conservation and Climate Initiative web page](#).

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