

# Integrated Pest & Crop Management

## Agriculture and Carbon Credits

By Ray Massey

According to the US Environmental Protection Agency's Inventory of Greenhouse Gas Emissions and Sinks, in 2006 the US released into the atmosphere 7,054 million metric tons of carbon dioxide equivalents (Note: a carbon dioxide equivalent is a measure of all greenhouse gas emissions reported in terms of the global warming potential of carbon dioxide). Table 1 provides a breakdown of where agriculture emitted and sequestered greenhouse gases (GHG).

Sector	2006 Million Metric tons of CO2 Equivalents
Total US Emissions	7,054
Total Direct Emissions from Agriculture	454
Crop and soil management	272
Enteric Fermentation	126
Manure Management	56
Total Sequestration	(778)
Land Use Changes	(33)
Forest Lands	(745)
Net Emissions from Land Management	(324)

Emissions from crop and soil management come predominately from nitrous oxide releases due to fertilization. Both dry and liquid manure management contributes to GHG emissions but liquid manure storage systems contribute the most GHGs and have the greatest potential to benefit from carbon reduction credits. Land use changes occur primarily from farming changes such as conservation tillage but also when land is taken out of crop production and put into grassland.

Several opportunities currently exist for being paid to reduce GHG emissions. Sequestering activities such as land use changes and forestry are obvious areas where getting paid to reduce GHG emissions would be welcome. With little or no change in management, land managers could receive payments for sequestering carbon. Currently, farmers adopting conservation tillage can receive a credit of .2 tons/acre in the Ozark region and .6 tons/acre in the rest of the state. For cropland in CRP or that is put into grassland, they can receive a credit of 1 ton/acre.

Though manure management is considered an emission of GHG by the EPA, livestock producers who

lower their emissions can also receive credits. If livestock producers implement activities such as capturing and flaring off methane from their lagoons and pits they can receive a credit for the resultant reduction in GHG.

But what do you do with GHG credits? You sell them. In the US, the Chicago Climate Exchange is where carbon credits are traded. Entities that have agreed to reduce their emissions, but been unable to, buy credits from entities that have sequestered carbon or reduced their emissions below the level they agreed to attain. Because the quantities being traded are large (one contract = 100 metric tons of carbon dioxide equivalent), most farmers will use an aggregator to market their carbon credits.

An aggregator is a business that gathers lots of small credits, bundles them together and sells them on the exchange. The two most familiar aggregators in agriculture are AgraGate (<http://www.agragate.com/>) and the North Dakota Farmers Union (<http://>

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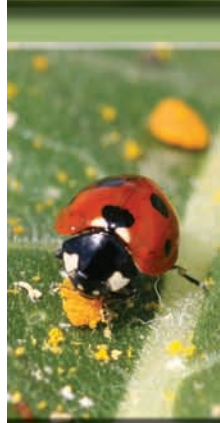
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carboncredit.ndfu.org/). Aggregators offer five year contracts to sequester carbon in soil at a price determined on the Chicago Climate Exchange. They retain about 10 percent for their service. In addition, they may retain some of the price until the contract is completely satisfied at the end of the five years.

When a farmer enters into a carbon sequestration contract, he is agreeing to certain land practices for the duration of the contract. For example, land under a carbon contract cannot be tilled even if compaction is a problem.

Currently, carbon contracts are selling for about \$6/ton. Last year at this time

the price was less than \$4/ton. At \$6/ton and receiving .6 tons/acre credit for no-tillage production, the price a farmer could receive is \$3.60/acre/year, minus the fees charged by the aggregator. The farmer would need to weigh the value of the credit against the limitations on production practices.

Should GHG emissions become regulated in the US, the price of a carbon credit is likely to rise. In Europe, where GHG emissions are limited, carbon sells for over \$30/ton. But Europe does not allow farmers to sell carbon credits.

And there is the big question for US farmers. Should they hope for

carbon regulations so that the price will rise and they can make money for doing something they may already be doing? Or should they realize that the EPA considers both crop and livestock production to emit GHG that can be regulated—with or without payments for reductions? I recently heard a person whose business depended on the government to say “Those who live by the sword, die by the sword.”

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