

By Dean Houghton

# Sell the sizzle

A warming climate and erratic weather challenge Corn Belt agriculture



**E**ight times during 2007, multiple Iowa climate stations recorded rainfall of 4 inches or more. That's the highest number of heavy rainfall events to hit the state in the more than 50 years such records have been kept. It's another hint that today's weather may just be growing more erratic.

Elwynn Taylor, the veteran Iowa State University climatologist, agrees that today's weather can be downright extreme. Those extremes keep farmers

► **Large photo:** Heavy rainfall events set a record in Iowa during the 2007 growing season, indicating a trend toward ever-more erratic weather.

► **Left:** Elwynn Taylor says farmers can help play a role in reducing carbon dioxide in the atmosphere by producing and using bio-based fuels.

on edge as they try to grow enough grain to meet demand for both food and fuel. "Increased demand for commodities doesn't change production risk, but it does raise the stakes," he observes. "Tie demand together with increased weather risks, and the benefits of good management and marketing decisions are greatly multiplied."

**Warming trend.** If you ask Taylor about his position on global climate change, you will get a long and studious answer. But in a nutshell, seeing more heavy storm events "is consistent with what you would expect to see during episodes of global warming," he points out. "Some years ago, it became apparent that the primary manifestation of global warming is increasingly erratic weather, rather than

a gradual increase of the averages."

Taylor points out that the idea of a changing climate is nothing new to those trained as climatologists. "Our climate is changing, but it has always changed," he says. Global warming was underway from 1880 to 1940, then a period of global cooling took over until 1972. Since that time, a global warm-up has been under way.

What's important for farmers, Taylor says, is that yields tend to be more consistent in the era of global cooling. "We are at a lot of risk if volatile weather during the next couple of years throws our yields to lower levels," he says. "We need to do all we can to insure that our crop can put down an extensive root system."

**Carbon connection.** Whether it causes global warming or not, there appears to be a buildup of one particular greenhouse gas—carbon dioxide—in the atmosphere. "It would increase a bit with a naturally warm-

ing planet," Taylor says. "It has increased that amount, plus it increases as we consume coal and oil faster than the earth creates them. We are almost a third of the way to doubling the amount of carbon dioxide."

CO<sub>2</sub> influences temperature near the ground, but not as much as some theories that were floated in the 1980s. "There were ideas that it would heat the earth 15 to 50 degrees F if CO<sub>2</sub> doubled," Taylor recalls. "The current thought that it might raise temperatures 2 to 5 degrees F is reasonable."

Farm-based fuels may be able to slow down this buildup of carbon dioxide. "My idea is that we can do just fine using more wind energy, solar energy, and biofuels without changing the CO<sub>2</sub> climate of the earth," Taylor says, "and it is a good idea to move that way if we can. I am proud to see Iowa as a national leader, if not the world leader, in this correction of our high-energy-demand path."

He adds, however, that for fuels such as ethanol to have an impact on the carbon equation, farmers will have to grow, harvest, and transport corn while minimizing use of fossil fuels. "If we can learn to grow corn without injuring any fossils, then we can say we are helping save the climate," he summarizes. "We're at a unique point where the climate affects our crops; those crops provide an increasing portion of our energy; and the kind of energy we consume affects our climate."

**Perfect storm.** While long-term climate changes are important, farmers are always interested in Taylor's forecast for the upcoming growing season. For 38 years, he has kept up a demanding schedule of presentations during the winter meeting season. For example, his January 2008 calendar showed 29 appearances across the Corn Belt as he sells the sizzle on the ag weather outlook for this summer.

Market volatility is one of his topics this year as he lays out a scenario for a perfect storm. According to Chicago Board of Trade records, market volatility hit an all-time peak on a monthly basis in June 1988 on drought concerns. In 2007, the yearly average for volatility set a record for the corn contract as the market tried to work through new levels of demand.

What would happen to volatility if a drought were to bring about those same supply concerns now that the market is in a demand-driven surge? Taylor points out that La Nina conditions are now in place, boosting odds that a corn crop will be under the projected trend yield. History shows the average time span between major droughts in the Midwest is about 19 years. The last major drought was 1988—and the U.S. has grown 19 good crops since. "Volatility likely will remain high," he says. "I'm seeing things that make me cautious." ■

► **Chart:** Long-term records based on air trapped in Arctic ice show a buildup of carbon dioxide in the atmosphere. Some increase is expected during global warming, according to Elwynn Taylor, Iowa State University Extension climatologist, but burning fossil fuels adds to the buildup.

Atmospheric carbon dioxide concentration and temperature change

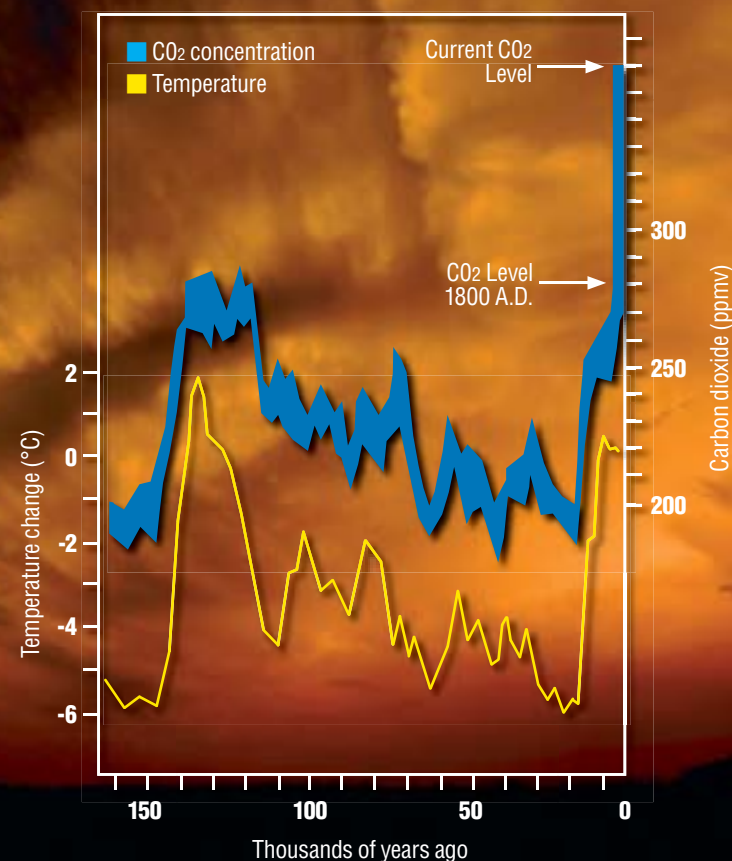


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