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Ag Decision Maker
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What's new with crop insurance in 2008

by William Edwards, extension economist, 515-294-6161, wedwards@iastate.edu

Corn and soybean producers in the Midwest need to make decisions about crop insurance by March 15 each year. If they don't advise their agent to make any changes, coverage will be the same as last year. However, changing market conditions make it advisable to review policy specifications each year.

What's new

Last year indemnity prices, available guarantees and premiums were all much higher than in 2006. That is not surprising, since all of these are based on expectations for harvest time prices as measured prior to March each year. Current corn and soybean market conditions make it likely that even higher levels will be reached in 2008.

Another new feature is a premium discount that is available to corn producers who plant a certain type of genetics, based on an expected decrease in yield risk.

Indemnity prices

Even if producers don't alter their percent protection level from year to year, the dollar value of their guarantee will change according to market prices. The price used to calculate the guarantee and determine the payment in case of a loss is called the "indemnity price." Where the indemnity price is set each year depends on market projections and the type of policy purchased.

Last year's revenue insurance (RA, CRC, GRIP) indemnity prices of $4.06 per bushel for corn and $8.09 per bushel for soybeans allowed many producers to lock in very attractive guarantees. Indemnity prices for 2008 will not be announced until March 1, but will likely be even higher than last year, especially for soybeans. Maximum indemnity prices for yield insurance (APH) have already been announced at $4.75 for corn and $11.50 for soybeans, an increase from the 2007 rates of $3.50 and $7.00, respectively.

The down side, of course, is that higher indemnity prices mean higher premiums. The average farmer premium for all corn policies in Iowa last year was $17.05 per acre, compared to just $9.62 per acre in 2006. The average soybean premium jumped from $7.03 to $8.27. And, despite the high value guarantees that were purchased in 2007, payouts for losses in Iowa were equal to only about 4 percent of the premiums that farmers paid in.

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Handbook updates

For those of you subscribing to the handbook, the following updates are included.

Cash Corn and Soybean Prices – A2-11 (4 pages)

Livestock Planning Prices – B1-10 (1 page)

Please add these files to your handbook and remove the out-of-date material.

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Inside . . .

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Estimated crop insurance premiums for different counties can be found on the University of Illinois Farmdoc Web site, at: www.farmdoc.uiuc.edu/cropins/, under Premium Calculator.

Type of policy

Iowa farmers have gradually been shifting their crop insurance away from yield insurance and toward revenue insurance over the last decade. Only about 15 percent of the insured acres in Iowa last year were covered with yield-based policies (APH and GRP). When indemnity prices are high by historical standards, revenue insurance makes even more sense, because the risk of declining prices is greater relative to the risk of low yields. This also makes group risk insurance protection (GRIP) somewhat more attractive than in low price years, since it offers exactly the same price risk protection as individual revenue insurance policies. GRIP's yield risk protection, however, is based on county level rather than farm level yields.

Producers who like to forward price much of their production prior to harvest can use CRC, or RA insurance with the "harvest price option," to protect themselves against harvesting fewer bushels than they contract. As long as they don't commit more bushels than they have insured, they can rely on the insurance indemnity payment to cover the cost of any shortfall. This year they need to consider carefully the odds that prices at harvest will be higher than in February. If there is only a small chance that the market will be higher in October or November, it may not be necessary to spend the extra premium to buy CRC or RA with the harvest price option instead of basic RA.

Guarantees

Producers need to carefully consider how many dollars of guarantee they need to purchase in 2008. Crop input prices are up sharply, as are cash rents. However, higher indemnity prices and proven yields may allow purchasing an adequate guarantee at a lower percent of coverage than in the past. For example, if a farmer had a proven yield of 151 bushels per acre and wanted to purchase a guarantee of $460 last year, a 75 percent coverage level was in order (151 bu. x $4.06 x 75% = $460). Suppose the same farmer needs a guarantee of $520 to cover costs of production this year, but the proven yield has been adjusted upward to 153 bushels per acre and the February futures price averages $4.86. A coverage level of only 70 percent is adequate now (153 bu. x $4.86 x 70% = $520).

Producers should carefully calculate their own coverage needs before meeting with their crop insurance agent this year. Note that insurance guarantees are based on futures prices. Only lost bushels are paid at that rate, though, while bushels actually produced are sold at the local cash price. A conservative approach is to recalculate the insurance revenue guarantee using the February futures price minus the expected basis for October. This gives a more realistic estimate of the minimum gross revenue available.

With sharply higher guarantees available, some producers look at revenue insurance policies as another marketing tool rather than a risk protection tool. Locking in a high guarantee can be somewhat like purchasing a "revenue put option." The cost of this guarantee needs to be compared to other marketing options, though, such as forward contracts, hedges and normal put options.

Biotech yield endorsement

The newest innovation in crop insurance is a premium discount for planting certain biotech corn hybrids. The Biotech Yield Endorsement (BYE) is available to corn growers in Iowa, Illinois, Indiana and Minnesota. To be eligible for a discount, farmers must plant at least 75 percent of the corn acres in an insurance unit to hybrids that contain the YieldGuard VT Triple or YieldGuard Plus with Roundup Ready Corn 2 technologies. These hybrids can be purchased from more than 250 companies that license the technology. Discounts are expected to average about 13 percent overall, but will be higher on APH policies than on RA or CRC policies. The discounts are not available on the group risk insurance policies, GRP and GRIP.

In 2007 the average farmer premium for corn in Iowa was about $17 per acre, so the average BYE discount expected would be a little over $2 per acre. This saving should be weighed against the added cost of the eligible hybrids and the value of any yield increases or other possible advantages. Potential benefits depend on whether or not the types of insect or weed pressure that these hybrids are resistant to pose a significant risk.

Indemnity Prices for Crop Insurance

Type of Policy	Corn		Soybeans	
	2008	2007	2008	2007
APH	$4.75	$3.50	$11.50	$7.00
RA, CRC, GRIP[1]	--	$4.06	--	$8.09

Equal to the average of the February CBOT price for November soybeans and December corn.

[1/]Announced March 1


Global warming – the science

by Eugene Takle, Professor of Atmospheric Science and Professor of Agricultural Meteorology, 515-294-9871, gstakle@iastate.edu and Don Hofstrand, value-added agriculture specialist, co-director AgMRC, Iowa State University Extension, 641-423-0844, dhof@iastate.edu

(first in series)

This series of articles will focus on global warming, the science behind it and the impact global warming may have on Midwestern agriculture. Climate change refers to any change in climate over time, whether due to natural variability or as a result of human activity.

The warming and cooling cycles

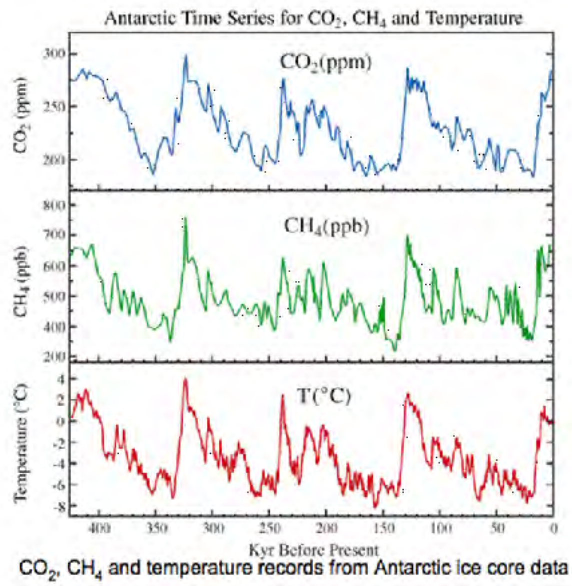
The earth has been going through periods of global warming and cooling for hundreds of thousands of years. With the use of "ice cores" of ancient ice layers, scientists have determined ancient temperature fluctuations in our atmosphere. The bottom line in Figure 1 shows temperature fluctuations over the most recent 430,000 years. Temperature during this period shows a rather regular cycle lasting about 100,000 years. The variation in temperature during a cycle is about 10 to 12 degree centigrade. Although the temperature line appears to move up and down abruptly, in reality the rate of change is very gradual over thousands of years due to the enormous time span covered by the chart.

During the last 15,000 years, we have been in a period of global warming with temperature rising. If we follow the traditional cycle, we would expect temperature to start a gradual decline over the next 70,000 to 80,000 years.

Two of the major greenhouse gases are carbon dioxide (CO_2) and methane (CH_4). Scientists have been able to track the historic concentration of these two greenhouse gases in our atmosphere. As shown in Figure 1, they track closely with the changes in temperature. The central question facing the science community is what will happen to temperature due to the recent and expected future increase is greenhouse gases.

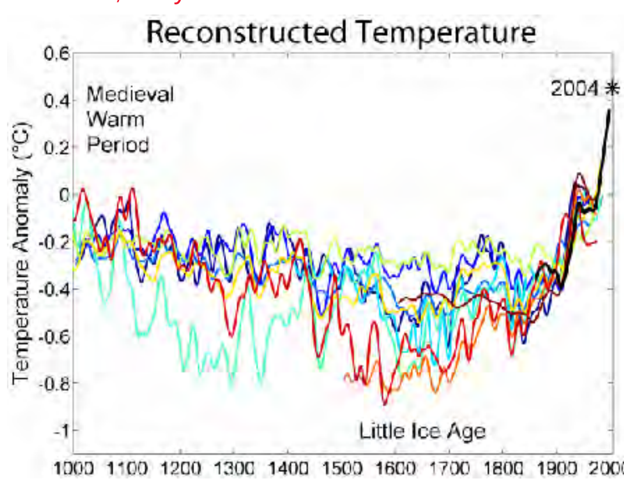
Temperature variations over the last 1,000 years are shown in Figure 2. This figure shows a comparison of ten different published reconstructions of average temperature changes. A pattern emerges of very gradual cooling over the first 900 years followed by a period of rapid warming during the last 100 years.

Figure 1. Antarctic time series for CO_2, CH_4 and temperature variations over the last 430,000 years.



Source: Vimeux, F., K.M. Cuffey, and Jouzel, J., 2002, "New insights in Southern Hemisphere temperature changes from Vostok ice cores using deuterium excess correction", Earth and Planetary Science Letters, 203, 829-843.

Figure 2. Reconstructed temperature variations over the last 1,000 years.



Source: Global Warming Art, http://www.globalwarmingart.com/wiki/Image:1000_Year_Temperature_Comparison_png

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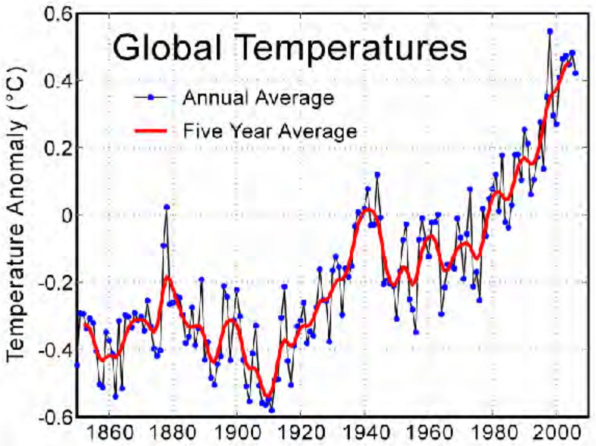
Figure 3. Temperature variations over the last 150 years.



Source: Source: Global Warming Art, http://www.globalwarmingart.com/wiki/Image:Instrumental_Temperature_Record_png
Compiled by the Climatic Research Unit of the University of East Anglia and the Hadley Centre of the UK Meteorological Office.

Temperatures over just the last 150 years since 1850 are shown in Figure 3. The annual average temperature varied greatly from year to year. However, by using a five year moving average, a trend can be deciphered. The trend was relatively flat from 1850 to 1900. Then it increased significantly during the 20th Century (although it dipped briefly from 1900 to 1910 and 1940 to 1950).

Global climate models

The scientific community creates complex climate computer models in an attempt to predict future global temperature changes. The accuracy of a model can be verified by its ability to predict past global temperature changes. Figure 4 shows the accuracy of a model based on five known climate change factors. As can be seen, temperature estimates made by the model tracked quite closely with the actual temperature levels during the period of 1900 to 1990.

The five climate change factors contributing to departures from long-term global average temperatures are greenhouse gas concentration, solar intensity, ozone levels, volcanic activity and sulfate levels. Three of these factors are anthropogenic and two of them are naturally occurring.

> Anthropogenic effects are those that are derived from human activities, as opposed to those occurring in natural environments without human influences.

The natural factors are:

1) Solar

The absorption of solar energy heats up our planet's surface and atmosphere and makes life on Earth possible. Sunspots correlate to the changes in intensity of solar radiation reaching the earth. Sunspot activity goes through variations and cycles, so it has the ability to warm and cool the earth compared to the long-term average. As shown in Figure 4, solar activity has contributed to warming (tracks above the dashed line) over the last century. Future sunspot activity will influence the amount of solar radiation reaching the earth and will impact global warming.

2) Volcanic

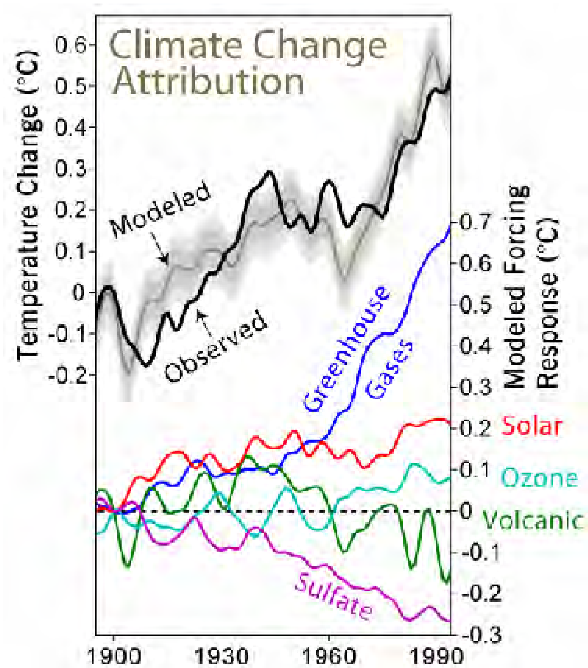
Volcanoes temporarily cool the earth. A decrease in volcanic activity during the first half of the century led to temperature increases, but more volcanoes during the last half contributed to cooling.

The anthropogenic factors are:

1) Greenhouse gases

Solar energy heats up the earth's surface. But

Figure 4. Natural and anthropogenic contributions to global warming.



Source: Global Warming Art. http://www.globalwarmingart.com/wiki/Image:Climate_Change_Attribution_png.
Natural and anthropogenic contributions to global temperature change (Meehl et al., 2004). Observed values from Jones and Moberg 2001. Grey bands indicate 68% and 95% range derived from multiple simulations.

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the energy does not stay bound up in the Earth's environment forever. Instead, as the earth warms, it emits thermal radiation (heat). This thermal radiation, which is largely in the form of long-wave infrared rays, eventually finds its way out into space, leaving the Earth and allowing it to cool. However, instead of passing into space, some of the infrared rays (heat) are absorbed by greenhouse gases and held in the atmosphere. Higher concentrations of greenhouse gases hold more heat in the atmosphere.

The major anthropogenic greenhouse gases are carbon dioxide, methane, nitrous oxide and chlorofluorocarbons. As shown in Figure 4, greenhouse gases in the atmosphere have increased substantially, especially since 1960. More information on greenhouse gases will be presented in the next article.

2) *Ozone*

Ozone is a gaseous atmospheric constituent. In the troposphere (layer of the atmosphere closest to earth), ozone is created primarily by human activity. In the stratosphere (atmospheric layer above the troposphere), ozone filters potentially damaging ultraviolet rays from reaching the Earth's surface. Ozone acts as a modest greenhouse gas, As shown in Figure 4, the contribution due to atmospheric ozone has changed modestly over the last century, with warming due to increase in tropospheric ozone partially offset by cooling due to loss of stratospheric ozone.

3) *Sulfate*

Sulfates occur as microscopic particles (aerosols). They increase the acidity of the atmosphere and form acid rain. They are known to reduce the effects of global warming. Sulfate particles have the capacity to scatter light rays, effectively increasing the earth's albedo (surface reflectivity). Also, the particles act as "cloud condensation nuclei." Essentially, these are particles around which cloud and rain droplets form. The abundance of these nuclei means that more and smaller water droplets form which diffuses light rays. As shown in Figure 4, the global increase of sulfate particles in the atmosphere due to industrial emissions (primarily in developing countries) is contributing to a cooling of the global atmosphere, which offsets part of the warming due to greenhouse gases.

The model shown in Figure 5 also estimates global temperature. When both natural and anthropogenic factors are included in the model, the prediction is closely correlated with the actual observations. However, when just the natural factors (solar and volcanic activity) are included in the model, a discrepancy emerges. Although the natural factors are a good predictor of actual warming in the early part of the century, in about 1960 they start to diverge. By themselves the natural factors do not account for the rise in global temperatures since 1960. Only when they are combined with the anthropogenic factors of greenhouse gases and sulfate does the model predict relatively accurately the actual temperature levels. This leads us to believe that anthropogenic factors have a significant role in the recent increase in global temperature.

The next two articles in this series focus on the role of greenhouse gases in global warming and the potential impact of global warming on Midwestern agriculture.

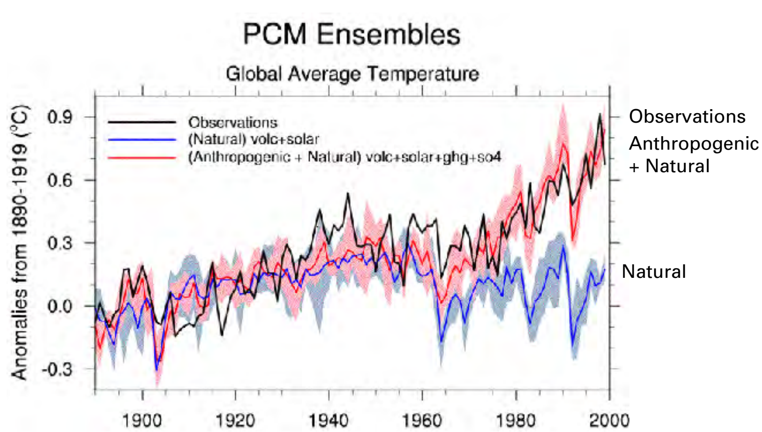
References

Intergovernmental Panel on Climate Change. 22 Jan 2008. <http://www.ipcc.ch/>.

Introduction to Climate Change. United National Environmental Programme. 22 Jan 2008. <http://www.grida.no/climate/vital/intro.htm>.

Global Warming Art. 22 Jan 2008. <http://www.globalwarmingart.com/>.

Figure 5. Global average temperatures (observed temperature versus predicted temperature)



Source: Jerry Meehl, National Center for Atmospheric Research

Dairy farming success in the bioeconomy

by Robert Tigner, Farm Management Field Specialist, 641-394-2174, rtigner@iastate.edu

A lot of the focus on the dramatic changes in agriculture has been the rapid expansion of ethanol production in the U.S., especially Iowa and surrounding states. This expansion, and a few other factors, has led to large increases in corn and oilseed prices. The change is mostly away from a supply driven price determination to demand driven price determination. That change has dramatically increased feed costs for dairy producers. More important is whether net profit margins have declined. Of course, the answer will vary by individual farm cost and milk price. Certain management principles can help dairy owners succeed in the new environment.

As a first step, don't sweat the small stuff, yet. Ask yourself what the largest expense in milk production is. Approximately 45% of milk production cost is feed, purchased and grown. Reducing feed waste, increasing dry matter intake and improving feed quality are all items that will help reduce feed cost per hundredweight. A periodic review, at least quarterly, can be done to make improvements. Improved feed quality will assist in more milk per cow and better cow health. Feed additives are common to a dairy cow diet, but do they add to the farm bottom line. Research, not just testimonials, should be the way to judge effectiveness. Corn has been an easy "fix" for feed problems, but other products are available to be used as an energy replacement. Another strategy could be to feed high moisture ground ear corn. Pound for pound it provides as much energy as shelled corn on a dry matter basis but one can harvest more pounds per acre.

The next largest cost on dairy farms is labor, including unpaid labor from the farm owners. Fully utilizing labor, labor efficiency, task efficiency and doing the important stuff first is important here. One of those is management and coordination. Management failures can be exceptionally costly in lost milk as well and higher expenses. Being ready for alfalfa harvest ahead of time, can make for higher quality haylage than that of your neighbor who isn't ready. Management also looks at tasks to be accomplished and assigns them in ways that benefit profitability most. Each person on the dairy team should handle the tasks they are best at, not just the ones they like most. For instance, the person on the dairy team best at handling pre and post fresh cows should have that as their major responsibility. This improved transition in cow care reduces and improves milk production cost and increases farm profit.

Far from suggesting that the small stuff is unimportant, I am suggesting that priorities need to be made correctly to yield the most profit for dairy farms. With the bioeconomy changes, least cost producers in any commodity will survive and prosper. Find cost reductions in the big stuff first and work your way down.

Updates, continued from page 1

Internet Updates

The following updates have been added to www.extension.iastate.edu/agdm.

Estimated Costs for Production, Storage and Transportation of Switchgrass – A1-22

Custom Farming - A Share of the Crop – A3-13

Grain Harvesting Equipment and Labor in Iowa – A3-16

Historic Farmland Values – C2-72

Tools

The following profitability tools have been updated on www.extension.iastate.edu/agdm to reflect current price data.

Ethanol Profitability – D1-10

Soybean Profitability – A1-85

Corn Profitability – A1-85