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## CULTURE WAR OVER FOOD AND FARMING

The Heuermann Lecture series for 2013-14 on the UNL East Campus has several noteworthy talks archived for viewing on the Internet. These are cutting edge topics that we are experiencing in today's agriculture. The talks are thought provoking and will cause you to think about the bigger picture of modern agriculture.

One example program is entitled *"Our Culture War Over Food and Farming"* presented by guest speaker, Dr. Robert Paarlberg. He's the author of the book *"Food Politics, What Everyone Needs to Know."* He really gets you thinking where we are heading and who is winning the battlefronts over conventional large scale agriculture and smaller, diversified farms. He believes alternative agriculture (small farms, farm direct, farmers markets, organic food, etc.) has won a cultural battle. Consumers want local, especially in-season produce, but they also want healthy food from long distances away too.

In the commercial sales arena, conventional agriculture wins and leads the way with about a 95% marketshare. Our production of food, feed and fuel on large farms is accelerating at an increasing pace from a rate that was already high. Fertilizer use in agriculture peaked in the U.S. in 1981 and pesticide use peaked in 1973. Plus the Keystone Alliance (Field to Market Program) is showing from 1980 to 2011 on a per bushel produced basis, farmers have decreased erosion by 67%, decreased water use by 53%, decreased energy use by 43% and decreased Greenhouse Gas Emissions by 36%. Food activists will use words like "Factory Farm" to vilify and you don't hear the success stories in current agriculture as often as we need to hear. Precision agriculture and new technologies will advance these successes even further in an extremely competitive atmosphere.

On the political front, anti-GMO or genetically modified food, activists have scored high in the past and have stopped GMO advancement in foods like wheat, tomatoes, rice and potatoes. However, the meat sector has won several recent battles at the Federal level.

Sally Mackenzie, UNL Professor in Plant Science, gave an outstanding lecture as a part of the series called *"Beyond GMOs to a More Honest Dialogue about Our Food."* She put today's science in perspective. Mackenzie said, there is no evidence genetically modified crops are unsafe to eat. Recombinant DNA is not unnatural, it's a fact of life. She says many articles on the Internet are bad science or politically motivated activism.

In California, civil engineers and water quality experts learned how to recycle water for Los Angeles and San Diego from "Toilet to Tap." To John Q public, it didn't matter the water was more pure than the source, they didn't want it, that's gross they said! But polling showed the public was ok with putting the "purified water" back into the drinking water lake where it was more natural to them, so that's what they did. The same issues confront us today with GMO's.

Did you know the Ruby Red, Organic Grapefruit was created using gamma irradiation to cause the mutation to occur for plant breeders to select from? It's not a GMO but it's a far less precise way to do plant breeding (could be 50 other gene mutations not studied) compared to the Bt corn technology, a GMO with one protein transgene.

A related science that also shows great promise is epigenetics. Mackenzie, one of the world's leading scientists in exploring this technology, said this process focuses on changing how plants express their genes, rather than changing the genes themselves. Early findings indicate this technology could significantly increase yields. This technology might be more acceptable to the public since it doesn't involve genetic modification.

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Heuermann Lectures are made possible by a gift from B. Keith and Norma Heuermann of Phillips, long-time university supporters. To find these outstanding talks go to: <http://heuermannlectures.unl.edu/2013-2014>

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