A JCS FAMILY FARMS PUBLICATION

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FRANKENFOOD

The GMO Debate

Genetically modified organisms (GMOs) are discussed across every media platform available to the consumer these days, with two opposing camps throwing opinions back and forth. If you're hoping to read this and gain insight into the final solution of this argument, you are wasting your time. The purpose of this article is to be entertaining and enlightening, nothing else. Now that I have covered that disclaimer, what exactly is a GMO?

The process of creating a genetically modified organism is basically copying a gene for a beneficial trait from one plant and inserting it in another plant. In other words, it means that a change has been made to the DNA of an organism. Companies such as Monsanto have used several methods of inserting this gene into the desired plant. This process has become much more precise and cost effective over the years. What started as little more than blasting the gene in with a gunshot has developed into a process that uses an organism, Agrobacterium tumefaciens, to insert the selected gene.

GMOs, while all the buzz today, are not a new development. The first GMO product was actually approved by the FDA in 1982. It was an insulin drug produced using genetically modified E. coli bacteria. According to David Zilberman, a UC Berkeley professor, 25% of new medicine produced today has been genetically modified. It was surprising to me to find that medicine, not crops for human consumption, were the first GMO's to be FDA-approved. The first GMO food to land itself in the grocery store was a tomato some 12 years later.

There are several benefits of genetically modified crops for growers and consumers alike. There are GMO crops that allow use of herbicide that would otherwise injury the crop. Roundup Ready corn has allowed farmers to use one herbicide to control all weeds resulting in higher yields at a lower production cost. Genetically modifying a corn plant to be pest resistant has resulted in less insecticide use as well as higher yields. Both these examples directly result in a lower price paid by the consumer. GMOs go far beyond corn though: Nearly 448 million acres planted worldwide contained types of GMO crops in 2014.

While the benefits of GMOs are many, there are numerous groups concerned with the long-term safety of human consumption of genetically modified food. There have been years of company-funded and independent research on this topic and no verified issues of safety with GMO consumption. Some argue that 40 years of research on the safety of GMOs are only a sampling in the cycle of human evolution and it is impossible to fully know the affect true long-term consumption will have on us.

The beauty of living in a developed country, such as the United States, is that we have the freedom of choice. Anyone who has been to the grocery store lately knows that there is no shortage of organic options. Organic foods are not allowed to be genetically modified. This increasing availability of organic produce and food shows a growing number

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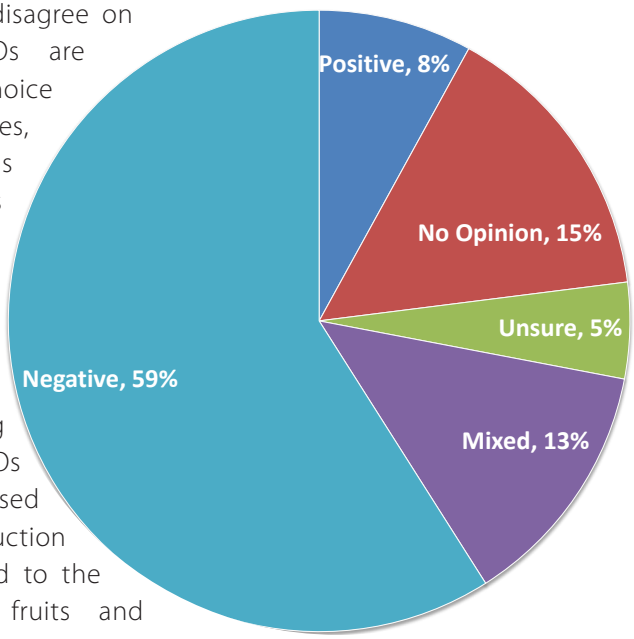
GMO continued...

of Americans find themselves opposing genetically modified crops. While this option is something valued in an affluent society, one in nine people on earth do not have enough food to lead a healthy life.

The major beneficiaries of the increasing research and use of GMOs are the developing countries with the vast majority of the world's hungry. The manipulation of traditional crops has led to much higher levels of production in these struggling countries. These technologies are so important in these areas that groups such as the Bill & Melinda Gates Foundation have given millions to help develop them further. So while we can all agree to disagree on whether GMOs are the right choice for our families, one thing is certain; this technology is truly life or death for many people in the developing world. GMOs have increased overall production levels and led to the creation of fruits and vegetables that are vitamin-fortified so consumers are able to get more from the food they do consume.



Consumer sentiment towards GMOs

Chinese Salad

A perfect light meal for a summer evening

Salad

2 pkg - Romain Noodles (chicken flavored)
1/2 C. - Browned, slivered almonds
1 C.- Browned sunflower seeds
2- 1lb. packages shredded cabbage
6 - Green onions - chopped
2 C.- cooked chicken

Dressing

1/2 C. - Oil
1/4 C. - Vinegar
1/2 C. - Sugar

Prepare Dressing: Bring to a boil all dressing ingredients and let cool while preparing salad.

Prepare noodles according to package directions. Cool.

In large bowl, combine cooled noodles, almonds, sunflower seeds, cabbage, onions, and chicken. Toss to blend. Coat salad with dressing. Refrigerate 6 hours. Toss and Serve.

If You Build It...

By Cathy Sladek

The entire staff of JCS Family Farms strapped on tool belts, donned hard hats and stepped into the world of home construction. A rewarding day was spent working alongside the staff of Habitat for Humanity.

Habitat for Humanity International was founded in 1976 by a recently retired couple, Millard and Linda Fuller. Their mission was, and still is, to bring people together to build homes, communities and hope. Originally known as "Partnership Housing," the concept centered on those in need of adequate shelter working side by side with volunteers to build simple, decent homes. The homes are not built for profit, and the new homeowners pay no interest when purchasing their house. They pledge to repay the organization for the cost of the home construction. This money then goes to the purchasing of materials for the next project. Since 1976, Habitat for Humanity has helped 6.8 million people find strength, stability and independence through safe, decent and affordable shelter.

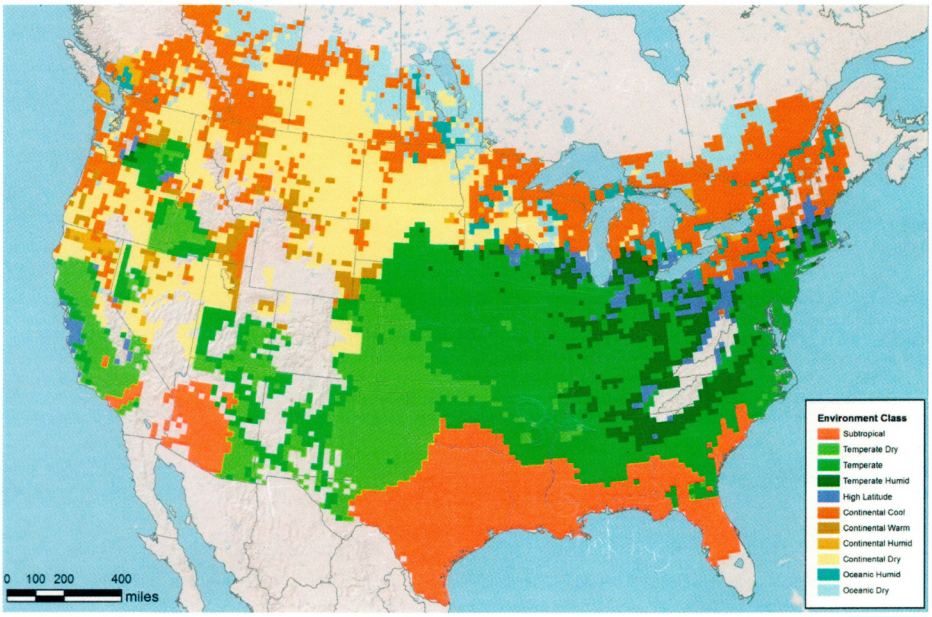
The general contractor for the site told us how excited she was that a group of farmers were coming to work on the house that day, because, "farmers know how to work hard." While on the building site, some of the JCS staff worked together to frame a garage entrance. Others worked on roofing while still others hung floor joists for the second story of the house. Undaunted by the extremely hot temperature that July day, the JCS team worked 8 hours. We are all used to working long days together, but it was especially fulfilling knowing that our efforts were going to help establish a "place to call home" for two needy families. The experience was so rewarding that we plan to make this an annual event.

Notes from the Old Cob...

As a farmer, I'm always being asked, "How was the weather this year?" And it seems that inevitably my response starts with something like, "Well it was completely different from last year." After giving the same response for several years, I start to question my memory, wondering if the problem is possibly age-related. Then I wondered if other people were doing the same, and thinking that I'm just another farmer who is never happy with what Mother Nature has dealt them.

I am writing this article with the benefit of some very interesting research that I recently received from Pioneer, data that has reassured me I've not lost my entire 57-year-old RAM! I have included the results of that data in this newsletter. Pioneer has used crop modeling and historical weather data (shown on a US map) to estimate the long-term frequency of weather environments that can be expected in different regions of the country. I have also included the summary of that data for the State of Iowa over the last 22 years.

The first thing that jumps out to me is that, over the last four years, Iowa has had four completely different growing seasons, with only 2013 being considered normal within "Temperate" conditions. Many of you recall 2012's "Temperate Dry" pattern, characterized by drought conditions which are typically found in states south and west of Iowa. Those of you with shorter term memories recall 2014's "High Latitude" pattern, that felt like northern Wisconsin all summer and kept our corn from maturing.



And that leaves 2015, another one for the record books, as we experienced a "Temperate Humid" pattern for most of the summer, a pattern which is typically experienced in states east of Iowa. This pattern isn't necessarily negative for yields, as witnessed by many record yields, but does present some unique challenges. Because of this historical pattern of wetter and more humid conditions, farmers in Indiana and Ohio plant hybrids, with higher disease resistance than we do in Iowa. Because of these conditions, we saw a tremendous amount of disease which led to a record yield response to aerial-applied fungicide. Even though we sprayed every acre, we still had some fields and certain hybrids where stalk rot caused large amounts of stalk lodging and harvest challenges. As we start a new year, the next question to be asked is, "What do you think the weather will be like in 2016?" If this data is any indication of what to expect, my odds of guessing correctly would be much better in Las Vegas!

-Jim Sladek