

What's Known About Genetically Modified Organisms

BY DR. MIKE ROSMANN

Genetically modified organisms (GMOs) are so commonplace in foods and other products that most Americans take them for granted, while the critics of GMOs worry. Genetically modified (GM) ingredients are in pharmaceuticals, clothing, cosmetics, plastics and about 70 percent of the items we use daily.

This is the second in a series of articles about recent innovations in agriculture. Today's column provides information about what is known thus far from scientific and other disciplines about GMOs.

Proponents of GMOs proclaim GM foods are similar to non-GM foods.

They note that spontaneous genetic mutations have been occurring since life began on Earth and aren't always improvements, like pesticide-resistant lice.

Genetic modification is the process of selective breeding that has been speeded up; the results can be observed in a single generation. Different from spontaneous mutations, GMOs are purposeful efforts to improve Mother Nature.

GMOs can have specific dietary benefits, such as the insertion of a genetic modification into rice that produces Vitamin A for eye health, reproductive success and disease resistance, thereby reducing the deficiency of this necessary vitamin in the diets of about 250 million children worldwide who consume too little else than rice. It's called "golden rice."

Other healthcare advances have resulted from GMOs, such as forms of insulin called humulin, first introduced in 1982, and several arthritis medications. Harvard University immunologist Dr. Kevin Bonham wrote in the May 30, 2013 issue of Scientific American that from an immunological viewpoint there is nothing inherently dangerous about GMOs.

Critics of GMOs abound. Jeffrey M. Smith wrote Seeds of Deception and Genetic Roulette: The Documented Health Risks of Genetically Engineered Foods, in which he hypothesizes that GMOs contribute to many health problems, especially allergies. Smith says the



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incidence of people experiencing allergies has increased 50 percent since people began to consume GM foods.

Jennifer Lang authored the 2015 book, The Whistle-Blower's Confession, in which she contends the active ingredient in several herbicides, glyphosate, is a carcinogen. GM plants, including about 90 percent of grains and oilseeds grown in the U.S., require glyphosate to grow relatively weed-free.

An indirect effect of GMO seeds for food and other consumable products is that they alter their local biomes and reduce their diversity. For example, weeds in crop fields are temporarily reduced, until exceptions like glyphosate-resistant water hemp and ragweed populate.

Weed-free fields may look good, but are the crops entirely healthful? Several investigators have reported that glyphosate residues in food and water can increase the production of estrogen in animals and humans.

High estrogen levels can enhance cancer proneness, especially in breasts, female reproductive systems and men's prostates. False pregnancies in animals fed certain GM grains have been found.

At a minimum, additional scientific evaluations are needed of the long-term use of glyphosate, its potential to enhance cancer and claims that GMOs contribute to allergies.

A well-documented fact is that GM crops can pollinate similar species intended to be non-GM crops, particularly when they grow near to each other. GM plant pollens can alter organic crops to levels that disqualify them from receiving the higher organic market prices they would otherwise earn. Finding pure organic seed for planting is also a worsening problem for organic farmers as GMOs proliferate.

What conclusions can be drawn? Many GM products enhance survival, but with qualifications.

GM foods are generally nutritious,

tasty and outcompete the plants and animals they replace, at least temporarily. The effects of GMOs on their biomes are not fully known over the long term.

Use of GMO seeds currently requires economic dependence on the companies that produce them and their agronomic treatments, such as required herbicides and insecticides. The manufacturers and distributors can control farmers' options and costs.

They can affect the markets for crops if potential purchasers refuse to buy certain GM goods, which is the basis of a class-action lawsuit currently.

GMO producers and food companies are mostly opposed to labeling foods and other products when GM, so consumers usually don't have this information when they purchase items, except at certified organic marketplaces.

The bottom line is that GMOs can contribute to rapid and beneficial changes in life, and also to economic monopolies. A business model that requires dependence on a limited number of patent-holders discourages diversity and fairness, while it encourages market control and greed.

Regulations are needed that allow for more business competition. Moreover, regulations should require full GM product liability, including liability for harmful effects of required pesticides and damage to non-GM farm production.

We know the earth and its inhabitants are better off having a diverse environment; competition has enabled survival thus far. The more choices, the better the ultimate outcome usually.

Consumers are requesting labels on all foods and products that indicate GM ingredients and origin. Consumers should be able to make informed choices about what they purchase and use.

The rights of people who choose to not use GM products should be respected.

Dr. Rosmann is a farmer, psychologist and adjunct professor. He can be reached at: www.agbehavioralhealth.com.



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Back Row: Connor Becker, Mya Gilbertson, Olivia Hunhoff, Isabella Maldonado, Ryker Heinz, Cruz Maldonado and Maileik Franklin
Front Row: Hannah Cihak, Haley Luke, Ava Gilbertson, Conner Nickles, Keaton Roth and Mitchel Zimmerman



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Back Row: Mason Kotalik, Cale Haselhorst, Everett Dixon, Davis Walsh and Paige Mitzel
Front Row: Isabel Kotalik, Sage Hufford, Caleb Schortzman, Draeton DeLozier and Lizzy Frazee

Beadle's Summer Readers

Beadle Elementary students were encouraged to participate in summer reading activities along with using educational technology websites throughout the summer. To meet the goal, students had to spend at least one hour per week on

these activities. Students were recognized for their extra efforts on September 2nd through a presentation of medals, certificates and other rewards in a small assembly. Dr. Kindle was on hand to provide certificates to the students.

Eagle Eye Ride Memorial Fund Donations



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Eagle Eye Ride Memorial Fund in Memory of Mary Carda Simek donates \$200 to each of the following schools: Beadle, Lincoln, Stewart and Webster.



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Eagle Eye Ride donates to Yankton Fire Station \$250. Thanks for all your support and helping us "Pay It Forward."

SD Recognizes Important Work Of Direct Support Professionals

PIERRE — South Dakota is honoring its workers who strive to build a bridge to inclusion for people with intellectual and developmental disabilities by setting aside Sept. 13-19 as Direct Support Professionals Recognition Week.

Direct support professionals (DSPs) are the primary providers of publicly funded long-term supports and services for individuals with disabilities. They work at the 19 agencies providing community support throughout the state as well as at the South Dakota Developmental Center in Redfield.

In his Executive Proclamation, Gov. Dennis Daugaard underscored the importance of DSPs, stating they help foster empathy and genuine understanding of people with disabilities as well as enrich their lives.

The proclamation also points out people with disabilities may be better able to find and keep work with the support of DSPs, echoing a priority of Daugaard's Employment Works Initiative.

"South Dakota's community supports and services rely on the state's workforce of DSPs," said Department of Human Services (DHS) Secretary Gloria Pearson. "This statewide observation is one way to honor these dedicated and compassionate professionals, who work hard to help keep people with intellectual and developmental disabilities

connected to their families, friends and communities."

Thousands of South Dakotans with disabilities are able to live and work as independently as possible because of the essential supports provided by DSPs, strengthening and enriching the communities in which they live.

Various programs, activities and ceremonies will take place across South Dakota Sept. 13-19 to honor the state's long-term supports and services workforce. DHS will offer an online salute to select DSPs Sept. 14-18 at dhs.sd.gov/SuccessStories. National Direct Support Professional Recognition Week will also kick off Sept. 13 to celebrate DSPs across the country.

Kinship Appreciation And Awareness Month

PIERRE — Gov. Dennis Daugaard has declared the month of September as Kinship Appreciation and Awareness Month in South Dakota to recognize the many families who have opened their homes to care for their kin in times of need.

Kinship care is a living situation in which a relative takes primary responsibility for the care of a family member, most often a child. Kinship care enables family members to live with people they know and trust, provides a sense of hope and reinforces the family member's sense of personal and cultural identity.

"Our first priority is to locate family members to care for children who find themselves in an unsafe situation," said Lynne A. Valenti, Cabinet Secretary of the Department of Social Services. "Families provide a safe, nurturing and familiar environment for children."

The month of September continues as a time to honor and recognize kinship care, promoting awareness to those who play a valuable role in supporting children in South Dakota.

To learn more about kinship care, contact your local Department of Social Services office or visit www.dss.sd.gov/.



Wiedmeier - King

Lonny and Ann Wiedmeier, Yankton and Doug King and Cherre Mayer, Yankton, announce the engagement and upcoming marriage of their children Carly Wiedmeier and Adam King.

The bride-elect is a 2009 graduate of Yankton High School and 2013 graduate of Rasmussen College of Mankato, MN and is employed at HSC as a mental health technician.

The groom-elect is a 2007 graduate of Yankton High School and is employed at Kolberg Pioneer as a certified welding inspector.

The couple is planning a September 19, 2015, wedding.

POW/MIA Recognition Week Set

PIERRE — At the request of the South Dakota Department of Veterans Affairs, Gov. Dennis Daugaard has proclaimed Sept. 13-19 as "POW/MIA Recognition Week," calling on all South Dakotans to honor those men and women who fought bravely for our freedoms.

"While we are grateful to all of those who have served our nation, this week is designed

to remember and recognize the sacrifices endured by those members of the Armed Forces of the United States who were held as prisoners of war or remain missing in action," the governor said. "The state of South Dakota continues to support efforts to account for every service member classified as Missing in Action."

Larry Zimmerman, secretary of the South Dakota

Department of Veterans Affairs, encourages all South Dakotans to set aside time during Sept. 13-19, to honor the POW/MIAs who fought to protect our freedoms and lost theirs, as well as remember those engaged in today's struggle to guard our way of life for future generations.

"In their service to our country, former prisoners of war and those missing in ac-

tion, have sacrificed mightily to maintain the promise of liberty that we hold dear," said Zimmerman. "POW/MIA week affords all of us a great opportunity to reaffirm our vow to never forget the courage of our nation's staunchest defenders — our former POWs and MIAs. We owe them and their families our gratitude."

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Mike Hoseus is a former corporate leader at Toyota Motor Manufacturing's Kentucky plant. He is currently executive director for the Center for Quality People & Organizations (CQPO), an entity developed by Toyota to share lean quality philosophy and human resource practices with education, business and community organizations.

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This workshop is offered through a special partnership between South Dakota Manufacturing & Technology Solutions (SDMTS) and the Regional Technical Education Center, Inc. (RTEC).