Gardening in a warming world: www.heraldtimesonline.com

IU experts talk about adapting to global climate change while working to slow its effects

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While climate scientists often give a dreary picture of a changing Earth, Michael Simmons doesn’t believe his plants will die in a barren wasteland.

The master gardener planted three apple trees for his last birthday.

Indiana University professors Ben Brabson and Rebecca Barthelmie gave a compelling argument for climate change Tuesday during a presentation at the Monroe County Public Library. They showed line graphs of carbon dioxide in the atmosphere that takes off at an almost 90 degree angle since the Industrial Revolution, and charts that suggest energy will only continue to be drawn from coal and oil.

Simmons, an instructor with the Hilltop Garden and Nature Center in Bloomington, is equally convinced that “global warming” is a real and potentially lasting phenomenon. Periods of drought and growing seasons are running longer. Storm events are intensifying. These changes present challenges for gardeners and farmers as they try to maintain their plants and soil.

He is resigned to this change, but, as a gardener, Simmons has started to work out a few ways that he can adapt to Indiana’s changing climate. At a panel discussion on global warming and its effects on farming, he followed two climate researchers in offering a silver lining — Granny Smith apple trees can be planted in a region that previously could not sustain them.

Bloomington has moved from Zone 5B to Zone 6 in the United State Department of Agriculture Plant Hardiness Map, meaning fruits and vegetables from more southern states can be grown in Indiana. Nevertheless, heat stress on native species will remain a problem as temperatures continue to increase and topsoil continues to harden because of sustained periods of drought.

“Gardening is going to be a different enterprise, and farming will be a different enterprise, in years to come,” Simmons said, before offering a few solutions to residents who attended the session at the library.

Soil and compost

Increased tilling to soften up hard topsoil can actually reduce the amount of organic matter in the soil. A reduction in that organic matter hinders healthy plant growth.

Simmons suggested the increased use of compost to reinvigorate soil with organic matter. A hundred pounds of compost can help the soil hold 195 pounds of water, which benefits plants during dry times. Compost can also add granules to the soil to help water better flow through the ground and to plants roots.

During dry months, Simmons recommended covering soil with crop residue to prevent topsoil from being beaten down by the sun.

Another thought is to utilize light colored mulch, which Simmons said could provide an 8- to 10-degree cooling difference for a plant.

Irrigation

Managing water, in a warming world, will be a difficult task in itself. As various forms of irrigation become utilized for saving plants from heat stress and maintaining farmers’ yields, water conservation should be important.

Simmons prefers drip situated near the roots of plants, rather than sprinkler systems, which he said doesn’t efficiently get water to where plants need it. At the same time, sprinklers often douse plants with moisture that sits and creates a haven for harmful bacteria. Drip irrigation, he said, is both more efficient — and targeting water to the plant’s root helps keep it alive.

Pests

The tulip tree scale was a terror for gardeners last summer, and, as Indiana remains a suitable climate for the bug, it will continue to impact helpless plants.

One product Simmons likes to use is “Surround” kaolin clay spray, which contains 95 percent kaolin clay, a naturally reoccurring mineral. By applying the clay to a plant, Surround creates a protective, white-film surface that can shield fruit-bearing trees from insects. The clay can “easily be rubbed off,” according to Surround’s own advertisements, and the fruit can safely be eaten.

Not giving up

Simmons, Brabson and Barthelmie had a tough time drawing optimism from their audience after describing the incentives that energy companies have to continue to use coal.

Brabson said the world can be run off of a half of a “Q” of energy, and there is almost 200 “Q” of coal in the ground now. Even with estimates that increase the planet’s need for energy over time, that leaves humans with enough coal to meet the planet’s energy needs for 150 years.

But Barthelmie and Babson agreed that about “99 percent” of scientists who study the planet’s climate do think it is warming and that this is a result of man’s endeavors. The issue is convincing politicians, who are tied to dollar interests, that spending money in the short term for alternative sources of energy could help avert significant impacts in the future.

Barthelmie looked at the idea of more efficient energy use as an “opportunity.”

“It’s not just about spending money. It’s about adapting,” Barthelmie said. “Why not be more efficient? Why not have better vehicles?”
Michael Simmons, master gardener and organic farming expert for the City of Bloomington’s Parks and Recreation Department stands in the garden at the Banneker Community Center.

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