UMass talks tough turf

Better grass means reduced water use, chemical runoff

By RICHIE DAVIS

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SOUTH DEERFIELD — Turf researchers were out standing in their field Thursday, despite the sweltering heat. The field itself was soaking up the heat. And that stresses grass, as it does other vegetation, making them more susceptible to disease, some of those researchers said.

More than 200 managers of golf courses, municipal parks, school and college campuses and landscaping services from around New England turned out for the University of Massachusetts’ annual “Turf Research Field Day.” At the Joseph Troll Research Center at the foot of Mount Sugarloaf, they learned about projects to cut use of water, fertilizers and pesticides.

One of the researchers, Michelle DaCosta of the UMass Plant, Soil and Insect Sciences Department, is studying which varieties of grasses use less water, for example, something researchers say is going to become increasingly important for commercial and home lawn care.

“We’re trying to figure out how we can use less water on turf grasses,” she said. “People tend to overdo it because they don’t really know, but if they maintain it properly, they don’t need a lot of water.” That’s important as water becomes less plentiful and some towns impose use restrictions, said DaCosta,
explaining the advantage of pre-conditioning a lawn in late spring with infrequent watering to encourage the roots to go deeper.

“Our biggest challenge is trying to convey to the homeowner that you don’t have to water your lawn every day, even if it’s like this,” she said. “I think in the future, there will be a mental change in attitude: It’s OK to have brown,” allowing parts of the lawn to go dormant until rainier, cooler weather returns. People tend to err on the side of using all this water, all these fertilizers and pesticides. If you’re maintaining it well from the beginning, you don’t have to do that. And healthy turf grass on lawns can actually sequester quite a bit of carbon,” to combat climate change.

Another UMass researcher, Geunhwa Jung, said last summer’s drought and high temperatures caused turf stress, leaving grasses susceptible to various pathogens, nematodes bacteria and fungi.

“People panic because they see the grass is dying. They say, ‘Water!’ “But when you water, you’re creating a favorable environment for pathogens to come in.”

Timing is key in watering, Jung said.

Afternoon watering is “bad practice,” because water is retained overnight, offering fungus a feast. Infrequent irrigation that allows the water to soak down deep is best.

Another problem, Jung said, is use of too much fertilizer because it can spur growth of disease along with grass.

“People care about their lawns so much, often they want to use fungicide to control diseases,” said Jung, who like many a doctor, advises patience as the best medicine for their grass. “Most of the time, grasses growing on home lawn are tolerant to overcome diseases. But if it doesn’t look good now, I say, ‘Take a little more time; the grass will come back.’” Even some professional turf managers at golf courses tend to use too much fungicide to combat a “dollar spot” disease that turns grass brown, so that the bacteria becomes more resistant, Jung said.

Absorbing pesticides

Researchers at the event also showed off approaches for using grasses that can best absorb pesticide runoff into waterways and wetlands, as well as a “constructed wetland” made of layers of sand and stone that could be used to reclaim waste water.

“Water reuse is going to become much more of an issue worldwide,” said UMass researcher Lesley ‘Mickey’ Spokas, as she explained a constructed wetland that can be used to treat septic waste or storm-water runoff or landfill leachate. “There are already places that are running out of clean water. It’s going to happen everywhere.”

The layered rock-and-sand system, which mimics a natural wetland, uses both aerobic and anaerobic treatment to biodegrade contaminants “This is a fantastic technology for places where you don’t have electricity,” said Spokas, who added that the technology is far ahead of the regulations, which prevent it from being used routinely in Massachusetts. Yet it’s been used for part of the municipal sewer system in Highland, N.Y., for 10 years, and a 5 million-gallon-a-day constructed wetland is being built to treat municipal wastewater in Guayaquil, Ecuador.

“It’s just taking advantage of what plants and microorganisms do, and using that,” said Spokas.

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