University of Florida: reprinted from **Questions and Answers: 2009 Florida-Friendly Landscaping™ Legislation:** http://edis.ifas.ufl.edu/ep440

Rocks, Artificial Turfgrass, and Rubber Mulch

1. **Q.** Is it permissible for homeowners to replace their yards with rocks, artificial turf, and rubber mulch?

A. Rocks

Florida-Friendly does not promote a landscape of all rocks or the use of artificial turf and rubber mulch. Such materials increase heat and may result in loss of habitat, or in habitat that does not support wildlife. If an HOA review board allows any rocks, Florida-Friendly recommends they be used in a reasonable way in landscapes that have plants. They also can be used for accents around heat-tolerant plants and trees, in rain gardens, or to lessen the impact of rainfall from roof overhangs. This last may be especially important as woody mulch along the foundation may attract termites, and rock will protect the soil from erosion without floating away or attracting pests.

Artificial/Synthetic Turfgrass

The Florida-Friendly Landscaping™ Program does not consider artificial turf to be a Florida-Friendly product.

Synthetic turf surfaces were found to have substantially higher surface temperatures than natural turfgrasses. Surface temperatures of synthetic turf can be 93°C(199.4°F) on a day when air temperature is 37°C(98.6°F). Heat transfer from the surface can contribute to physiological stress that may result in health-related problems (McNitt and Petrunak 2006). Especially when the synthetic turf fields were newer, rubber granules often contained polycyclic aromatic hydrocarbons (PAHs) at levels above health-based soil standards. The levels of PAHs generally appeared to decline as the field aged. However, the decay trend may be complicated by adding new rubber granules to compensate for the loss of the material.

Zinc contents were found to far exceed the soil limit (Zhang, Han, and Crain 2008). A limited scoping level field-monitoring study of synthetic turf fields by the US Environmental Protection Agency was conducted in two athletic fields and one playground to test metals and volatile organic compounds. It was revealed that metal concentrations were variable in a given site and between sites, and lead concentrations were low. Although there are no standards for lead in recycled tire material or synthetic turf, average concentrations were well below the EPA standard for lead in soil. It was suggested that it is not possible to reach comprehensive conclusions without consideration of additional data (U.S. Environmental Protection Agency 2009).

Healthy lawns clean and cool the air by absorbing carbon dioxide, releasing oxygen, and collecting dust and dirt. They filter stormwater runoff, facilitate groundwater recharge, and reduce erosion, glare, and noise. (For more information about turfgrass, visit http://fyn.ifas.ufl.edu/professionals/GI-BMP_publications.htm.)

Rubber Mulch

Recycled rubber mulch is not recommended for plant beds. Vegetation and organic mulch provide for a richer and more diverse landscape. A mix of vegetation attracts beneficial wildlife. Mulch made from tree bark or other plant material contributes nutrients to the soil as it breaks down.

2. **Q.** Is it permissible for homeowners to place rocks on their property between their houses and a neighbor's house to eliminate an irrigation zone to save water?

A. The HOA review board may need to approve this landscape modification. From a water filtration process, rocks are not necessarily more Florida-Friendly than turfgrass. Turfgrass filters runoff in a water conveyance area, or swale, between the two properties where the elevation is lower. However, if the turfgrass is not performing well and velocity of the water coming from the home sites is causing erosion, an alternative groundcover, including rocks, should be considered.

UF You Tube Video:

Dr. Jason Kruse – Assistant Professor/Turfgrass Specialist, UF

Used hand-held infrared thermometer to measure the surface temperatures of natural turfgrass, artificial turf, asphalt and concrete.

EPA:

Limited studies have not shown an elevated health risk from playing on fields with tire crumb, but the existing studies do not comprehensively evaluate the concerns about health.

February 12, 2016: U.S. Environmental Protection Agency (EPA), the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry (ATSDR), and the Consumer Product Safety Commission (CPSC) launched a multi-agency Federal Research Action Plan on Recycled Tire Crumb Used on Playing Fields and Playgrounds to study key environmental and human health questions.

www.epa.gov/tirecrumb)

Consumer Product & Safety Commission:

Current information from a number of health studies does not show an elevated health risk from playing on fields with tire crumb. However, these studies do not comprehensively address the concerns about potential human health risks associated with exposure to tire crumb.

Connecticut Department of Environmental Protection:

DEP was specifically tasked with evaluating the potential environmental risk associated with stormwater runoff from artificial turf fields that included a crumb rubber infill layer derived from recycled tires. Based on results of study, DEP concludes that there is a potential risk to surface waters and aquatic organisms associated with whole effluent and zinc toxicity of stormwater runoff from artificial turf fields. Zinc concentrations in the stormwater may cause exceedences of the acute aquatic toxicity criteria for receiving surface waters, especially smaller watercourses. The DEP suggests use of stormwater treatment measures such as wetlands, wet ponds, infiltration structures, compost filters, sand filters and biofiltration structures, to reduce concentrations of zinc in stormwater runoff to levels below the acute toxicity criteria.