

## **An extra step by home builders could work wonders for yards**

BY KATHERINE SALANT June 6, 2014

The soil that surrounds new houses in most production-built communities in the Washington area is of such poor quality that foresters and turf specialists call it “dead soil.”

How is that possible?

Before home construction begins, builders remove the topsoil and stockpile it to the side. When the house is completed, the topsoil is put back.

That provides some boost to a new yard, though not nearly enough, because all that stripping, stockpiling and respreading is disruptive. “The topsoil is not remotely the same quality as what was there before,” said Vincent Verweij, an urban forester with Arlington County Parks and Recreation.

But the biggest factor in the problem, Verweij said, is what happens to the subsoil after the topsoil has been removed.

“The builder is legally required to stabilize the subsoil to ensure the stability of the foundation, basement floor slab and walls and the grading around the house, and he does this by compaction,” he said. “But the compaction degrades the soil quality, increases its acidity, kills microbes and significantly reduces the ability of the tree roots and other roots to take hold and have access to nutrients.”

Although necessary, the compaction creates a type of soil so firm that experts call it hardpan. Mike Goatley, a turf specialist at Virginia Tech, said that trying to landscape in a yard with this type of subsoil is “like trying to grow plant materials in concrete.”

There is a solution, which requires a builder to take an additional step.

Typically, at the end of the job, a home builder engages a landscaping contractor to “scarify,” or lightly till, the surface of the compacted subsoil before spreading the stockpiled topsoil. Then the yard is sprayed with a mixture of water, green paper mulch, seed and straw. (In late fall or early spring, sod might be used instead.) The extra step would require the landscaping contractor to spread a two-inch layer of new compost and thoroughly rototill it to a depth of 4 to 5 inches before the spraying. To be effective, a high-quality compost from a reputable source, such as a local municipality’s compost-producing facility, must be used.

Breaking up the uppermost layer of subsoil greatly increases the soil’s ability to absorb rainwater, and adding the top-grade compost gives a huge boost to everything planted in the new yard.

For the past two years, Mark Carroll, a turf specialist at the University of Maryland, has run a pilot project in Howard County that enhances the yards of new houses in exactly that way. The treated yards look superior to those that did not get the extra amendments, Carroll said, and the

treatments reduce lawn maintenance. They will not need fertilizer for at least three years, and very little after that, because the soil amendments have long-lasting effects, he said.

The biggest plus of Carroll's program is not a homeowner's enhanced landscape, however. The entire region can potentially benefit. When more rainwater is absorbed in individual yards, less runs off and eventually enters the Chesapeake Bay. When far less fertilizer is used, the quality of the water that does run off is higher because it contains very little nitrogen and phosphorus, pollutants contained in fertilizer that have negatively affected marine life in the bay as well as in streams and rivers that drain into it.

Every local jurisdiction is concerned about runoff, and Fairfax County recently took action to address it. Beginning July 1, the county will require builders and developers of new-home communities to reduce both the volume of storm water runoff and the amount of phosphorus and nitrogen in it. Soil amendment is one of 15 approved ways that can be accomplished.

What would Carroll's soil treatment add to the cost of a typical new home in the Washington area? He estimated that rototilling and adding high-quality compost to the 5,000 square feet of exposed yard in a typical 60-by-120-foot lot would run about \$2,355.

On the other hand, Carroll's program could also save a builder money. If the volume of runoff is reduced enough, the builder might be able to install a smaller, less costly system to handle the storm water runoff that is not absorbed in each yard, suggested Jim Baish, a landscape architect and land planner in Frederick who designs land use plans for many new-home communities in the Washington area.

Of course, grass, shrubs and trees do grow in the yards of new houses with poor subsoil. And homeowners can add soil amendments to a new lawn on their own.

But, Goatley noted, it's much more difficult to do that after the turf is established, requiring much more effort and several applications to produce results.

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