

post to your gardens all the time). Here in the upper Midwest, however, many soils are built primarily from dolomitic limestone containing calcium and magnesium made from zillions of prehistoric clamshells. In fact, our soils often contain boatloads of calcium, since our concrete walkways and foundations are constantly leaching lime. *So you don't need gypsum as a means of adding calcium.*

So Shirley, where does this leave us? Personally, I tend to believe Dr. Minner, but I have absolutely no reason to disbelieve the country's largest gypsum manufacturer. No one showed me any definitive studies for "typical" Chicago soils. But back to basic truths: is your clay so horrible that you'd want to add gypsum to it no less than twice a year and as often as every two weeks, plus the work of adding organic matter too? I'm way too lazy—my garden's lucky to get just the compost and sometimes a little fertilizer on the roses.

Also, Shirley, recall that if your soil's compacted, gypsum won't do a thing for you: the only cure is to apply some muscle and compost to it or build a raised bed. If the soil is just tough-to-dig, then you are already obliged to dig in 2-3" of compost every year (I like the compost made from yard wastes way better than mushroom compost, which to me is simply mucky manure with old shoes and beer cans added). If I can afford it, I add "Profile" or "Turface" calcined clay. You could add 8" of sand to every 2" of clay (do not add less, or you will create concrete), but that seems pretty ridiculous.

I just this minute saw Jerry Baker on TV sprinkling pelletized gypsum laced with talc and bone meal (for a double calcium whammy) into the soil he was using to plant a tree. And the beat goes on... P.S: Shirley: did I help or hurt?

TREE PLANTING BASICS

"Hey Rommy: *Your directions for planting a tree are contrary to directions given by local nurseries, which say to amend the soil taken from the planting hole with 50% peat. Please clarify.* —**Connie Garry, via e-mail.**

TWG Editor: Well, Connie, there's about as many theories on planting trees as there are trees, so who ya gonna believe? The manager of design/build at one of the most well-known landscape contracting companies in the region agrees with your local landscapers (they do tend to clump together, y'know...): He writes, "It's a good practice to add some organic matter such as peat into the top 6-8" of the planting hole because it breaks up our clay soil a bit and helps roots get out of the root ball". On the other hand, Tony Aiello, woody plants curator at the *Chicago Botanic Garden*, sent me a wonderful article called "Tree Planting Basics" by Jeff Iles, assistant professor of horticulture at *Iowa State University (515) 294-0029*.

This article makes sense to me, and I am excerpting, with permission, from that part pertaining to digging the hole and amending the soil:

"Ideally, the planting hole should be two-three times the width of the rootball, container, or rootmass (the poorer the soil, the wider the hole), with sides that slope towards the base of the rootball. Wide planting holes provide a beneficial zone of well-aerated and well-drained soil that tree roots will readily exploit during the establishment period. In addition, sloped walls help direct growing tips upward

to the surface rather than in a circling pattern. Hole depth should allow the tree to be positioned so that the root collar or trunk flare is level with, or slightly higher than, the surrounding grade. Never dig the hole deeper than the height of the rootball or rootmass because the tree may settle deeper into the hole than intended. Planting too deep can cause trees to die within months of installation, or lead to other chronic problems (girdling roots, trunk rots, etc.) that significantly shorten their lives.

But what about planting trees in new housing developments where the "growing medium" is compacted clay subsoil? When confronted with situations where drainage is poor and soil oxygen is in short supply, only species tolerant of these challenging conditions should be used. Alternatively, you might install expensive and elaborate subsurface drainage systems, or plant trees in raised berms. If trees must be planted directly into poorly-drained or compacted soils, a wide, shallow hole should be prepared so as much as one-third of the rootball or rootmass protrudes above the surrounding grade. This technique raises the zone of active root growth above potentially saturated, oxygen deficient conditions. Planting "high" on poorly drained soil is particularly important for conifers.

Contrary to popular belief, soil removed from the planting hole is the most appropriate backfill material. Soil amendments like peat moss, ground bark, and composted manures mixed with native soil and used as backfill have not proven beneficial to tree establishment. In fact, studies

DE-BUNKING THE TREE BUNK: TAKE THE TEST!

True or False?

♣♣ Dig the hole just wide enough to accommodate the roots.

♣♣ Dig the hole extra deep.

♣♣ Add peat moss or gravel to enhance root growth and drainage.

♣♣ Don't worry about removing root enclosures like containers, burlap, and twine.

♣♣ Amend the backfill with organic materials and fertilizer.

♣♣ Remove one-third of the branches to compensate for root loss.

♣♣ Stake the tree to prevent any movement.

If you answered "true" to any of these questions, you have flunked the tree test. All of these practices are out-dated or ill-founded, according to the *Chicago Botanic Garden* and *Iowa State University*. So go back to school—the experts say you need to take a more up-to-date class. ♣♣♣♣

have shown tree root systems in amended soils remain confined to the amended soil in the planting hole, while trees planted without the "benefit" of soil amendments developed roots far beyond the original planting hole. And on poorly drained sites, soil amendments can collect too much water. Because amended soil has greater pore space than surrounding clay soil, water will move into it preferentially. During periods of heavy rainfall, the amended planting hole can fill up with water like a bathtub, causing root suffocation and tree death.

To determine the proper hole depth, examine the rootball to locate the original "ground level" at which the tree was growing in the nursery. Repeated cultivation in the nursery sometimes causes extra soil to accumulate around the trunk, disguising the original grade. Trees can be planted too deep when the planter assumes the top of the rootball is the original ground level. Peel back the burlap from the top of the rootball and look for the flared trunk base that increases in diameter as it meets the ground. Also look for roots. If these features aren't immediately apparent, scrape the soil away until fibrous roots are discovered. Now the true depth of the root system can be determined and an appropriate hole can be prepared...

[After backfilling], it is very important not to place excess soil, especially clay soil, over the planting site. When heaped over the plant roots, clay soil forms a layer that oxygen and water cannot readily penetrate. Adding clumps of turfgrass in the "overflow" also is to be avoided."

So, Connie, the roots will never leave that lucious soil mix you so carefully

concocted for them. But why did you concoct such a mix? Do trees growing across the street in the woods get peat moss, or is peat moss something that the garden center guy or peat moss excavator just really wanted to sell to you?

As I always say, "think like the tree". What ecosystem does it want? If you were a conifer, a birch, a baldcypress, or an oak, what ecosystem would suit you? For clues, go to a nearby Arboretum or Botanic Garden. There you will most often see huge mulched beds of mixed trees and shrubs (thickets, really) where the trees are not interfered with by fancy perennials (needing tons of water, fertilizer, and amendments); where the trees receive the natural fertilizer of their own fallen leaves; and where the trees are growing in the soil that was there and that's compatible with their ecology (a baldcypress is near the water, not near the parking lot). As I've observed them, those mulched beds of trees are nice and wide—as wide as the (eventual) canopies of the trees. And planting in these wide swathes means that the roots are not becoming compacted by hordes of tourists' feet or tractors or kids' bikes or cars pulling up on the grass above them. People tend to avoid entering these areas, except people like me who are always snooping around looking for plant identification tags.

So, Connie, there's a long answer to your short question, but obviously one that lots and lots of people—including professional "tree planters"—should heed. Hope it helps...next write back and ask me about whether you should remove the burlap or wire from the tree's rootball...
