

Sustainable Landscaping: Easier on your back, your wallet and the environment

Sandy Welches, Editor, MGV '06

*A presentation given by Dr. Linda Chalker-Scott
Washington State University Associate Professor and
Extension Horticulturist at the 2015 Ohio
Master Gardener Volunteer State Conference*

Why do many landscapes, especially woody shrubs and trees, fail? Dr. Chalker-Scott has studied this phenomenon for 15 years and has arrived at a pretty startling conclusion: we need to plant all woody plant material **bare root!** And she made a very compelling case for it on Saturday morning, August 29, to a large audience of MGVs from around the state.

She showed us many pictures of nursery plants that were supposedly planted "at grade" into their plastic containers or burlap bags, but the trunk's flare was actually buried in 3-4 inches of soil!

She also reminded us that these plants often start showing distress at 3 years or even earlier (browning leaves, etc.). And many of them just get ripped out of the soil by high winds and rain 6 or 7 years after planting because of deep flare burial and faulty root development.

Landscapes fail primarily because of:

- Poor quality roots
- Improper soil management
- Inadequate root preparation
- Installed too deeply (at the nursery and by us!)

Urban landscape soils:

- Can be heavily compacted and have abrupt layers, creating "perched water tables," where water enters the soil vertically, but then meets another layer of soil that is more impermeable, i.e., doesn't drain

- Do not necessarily resemble "native" soil types
- Need to be tested before selecting plants or adding amendments

All of the above apply especially when you are building a new raised bed or have built a house and the top layers of topsoil have been removed during construction.

Always know your soil composition when building new raised beds.

Ohio soil should contain no more than 4-10% organic matter. How much does your garden have? Soil tests often show way too much organic matter, like 20% and more. Dr. Chalker-Scott recommends this:

- **Amend** your beds only once: when initially creating them.
- **Use organic matter** as a mulch, not as an amendment
- **Top-dress** with compost yearly if you like, but do not dig holes or rake it vigorously into the existing native soil.
- When planting woody plants, **backfill** with the native soil.

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Installation and After Care of Woody Plants

Roots fail because:

- They have barriers between themselves and the native soil.
- They are structurally flawed and left uncorrected.
- They are installed too deeply.

REMOVING ALL MATERIALS FROM ROOT BALLS (SOIL, BURLAP, WIRE CAGES, ETC) AND CORRECTING ROOT FLAWS IMPROVES ROOT ESTABLISHMENT AND TREE SURVIVAL.

Here's what she recommends:

- Have adequate water and organic mulch on site.
- Keep roots shaded and moist at all times
- Remove containers and other foreign materials from the roots.
- Use a hose or a water bath to remove all media from the roots.
- Let root balls soak for several hours if they are too dry to work.

- In extreme cases, use the “cut and spread” method — making sure roots spread out on a flat plane.
- Prune excessively long and defective roots.

When installing:

- Dig a shallow hole only as deep as the root system and at least twice as wide.
- Arrange the roots radially and backfill with unamended native soil.
- Use root washing water in planting hole; it contains nutrients and microbes
- Add soil
- Stake only if necessary; most bar-rooted trees need no staking. If your tree or shrub is in leaf when it is installed, you may lose many of the leaves—especially if you have pruned the roots. New leaves will grow once the roots have established.

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