LANDSCAPE MYTH BUSTER

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LANDSCAPE TREE FACTS

- Trees growing in commercial settings live an average of 13 years
- Trees in residential areas average 37 years
- Trees in rural, undisturbed sites average 150 years
- Why?????

URBAN SITES AND HOME LANDSCAPES

- Improper planting
- Over-pruning and poor pruning
- Improper fertilization
- Compacted soils
- No or little topsoil
- Limited space for roots
- Improper staking
- Mechanical injuries
- Construction issues
- Pedestrian and vehicle abuse
- Adding/Removing soil

IMPROPER PLANTING IS THE NUMBER ONE PROBLEM

When transplanting trees or shrubs into landscapes, you should always amend the backfill soil with organic matter.

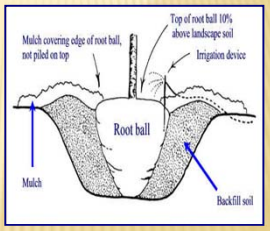
True or False

FALSE:

- Use native soils for backfill ***without*** amendment (any idea why?)
- In poorly drained soils water moves in but does not move out
- Roots are slow to move into native soil if the amended soil provides a better environment for growth

HOW SHOULD WE PLANT?

- In extreme cases, add topsoil to the entire area
- Dig hole at least twice as wide and the same depth or less than the root ball
- Loosen soil several feet out from plant



COMPACTED SOILS

If you have a clay soil, add sand to improve its texture and it's ability to drain properly

True or False

FALSE:

- Adding small amounts of sand actually compacts soil further
- To significantly alter a clay soil, sand must be incorporated to 50% or more of the total soil volume – not very practical
- Clay soils are not inherently bad, but can be problematic if they lack good structure
- So what can you do?

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- Many problems associated with clay soils (poor aeration, drainage, etc.) can be alleviated through good management practices (drain tiles, organic matter, added topsoil,etc)
- Remember that added topsoil or organic matter should not be added to individual holes but to entire beds or planting areas.
- Proper plant selection can reduce problems associated with heavy clay soils because some plants adapt well to heavy clay soils (wet site plants)

WHEN PLANTING A CONTAINER GROWN PLANT YOU SHOULDN'T DISTURB THE ROOTBALL.
TRUE OR FALSE

False:

*Plants often need corrective root pruning before transplanting

*Containerized plants are notorious for concealing fatal root flaws

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- Some root pruning at transplant time may be the best option. However:
- Spreading the roots out laterally is usually a better option

ROOTS EMERGING FROM A CUT ROOT

- The white roots are the new ones that are growing in response to the cutting; they are just one week old

CIRCLING ROOTS ;

- If not pot bound a few circling roots don't cause a problem but spread roots out and **remove** most of the bark for best growth. If they won't straiten – cut them

POOR ROOT SYSTEM

- Circling root 3 years after planting a 1 gal. liner
- It was much smaller 3 years earlier and should have been cut then
- The 1 gal. plant was also planted too deep (at arrow point)

EVEN LARGE TREES CAN SHOW DAMAGE

MANY ROOTS INSIDE BUT FEW ON THE EDGE OF ROOT BALL INDICATE QUALITY

- The media has been partially removed on this 15 gal. container red maple to expose the roots
- This high quality root ball has many small diameter roots
- There were few circling roots on the outside edge of the root ball

BALLED AND BURLAPPED ROOT BALLS MUST BE LEFT INTACT DURING TRANSPLANTING. TRUE OR FALSE

FALSE:

- They often contain soil significantly different than that of the transplant site.
- Differences in soil texture will impede both water movement and root establishment.
- Root defects can only be found and corrected if root ball soil is examined and most soil is removed.

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- Removing the heavy clay will make the plant lighter and easier to handle
- Sometimes plants are bagged too high and finding the top most root helps determine proper planting depth (this point is critical).
- Some burlap is synthetic and will not rot
- Recent research suggest removing all the soil by washing it off leads to greater success when transplanting smaller diameter trees or shrubs.

ROOT WASHING B&B PLANT

This was the soil line of the rootball

Photo by: Jim Flott, Spokane Urban Forester

WHAT IS WRONG WITH THIS PICTURE?

This

leads to this

Healthy soils always have a high organic matter content.

True or False

NOT NECESSARILY:

Possibly - but the reverse could be true as well. (Healthy Soils May Have Low Organic Matter Content)

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- Our soils, generally have less than 2% organic matter and that is enough for most landscape trees and shrubs (always a few exceptions —i.e. Roses, Hydrangeas, Azaleas, Blueberries, etc).
- Before you add organic amendments think about the long term effect (what happens after it decays?). Especially critical in turf areas.
- Be conservative with organic amendments; add only what is necessary to improve structure (2" in upper 6" mixed thoroughly).
- Adding topsoil to an area may be a better option for poor urban soils

TREES REQUIRE "DEEP ROOT FERTILIZATION" TO REACH THEIR ROOT SYSTEM. TRUE OR FALSE

FALSE

- In most soils the vast majority of the trees nutrient absorbing roots are in the top12" or less.
- Placing fertilizer below this level is both wasteful and potentially harmful to the ground water.
- Slow release fertilizer on the surface or possibly just below grass roots (4" depth) is best (no grass under trees is even better).

LEAF WILT IS THE BEST INDICATOR OF INSUFFICIENT SOIL MOISTURE. TRUE OR FALSE

NOT ALWAYS:

- Symptoms are the same for too wet and too dry
- Be sure to assess soil conditions before irrigating wilted plants
- If soil is chronically wet, consider installing a French drain or other passive means of drainage
- Alternatively, select trees and shrubs adapted to wet conditions

WHEN A TREE HAS LOST A LOT OF ITS ROOT SYSTEM (SUCH AS IN CONSTRUCTION DAMAGE) THE TOP SHOULD BE CUT BACK TO COMPENSATE FOR THE ROOT LOSS. TRUE OR FALSE

False

- Following root loss, unpruned trees seem to respond better than pruned trees
- The tree may lose some branches naturally – let the tree "decide" and remove these branches before they are dangerous.

BUT WHAT ABOUT NEWLY PLANTED TREES?

Transplanted trees and shrubs should have their crowns (tops) pruned to compensate for lost roots.
True or False

FALSE:

- There is no need to top-prune landscape plants.
- Only prune to remove broken, dead, or diseased branches.
- When pruning these branches, use thinning rather than heading cuts to preserve tree structure.
- For structural correction wait one year to prune if possible.

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- Avoid stress by proper post-transplant irrigation not by pruning!
- Avoid stress by post-transplant irrigation not by pruning! (worth repeating)

REMOVING THE ENTIRE BRANCH ON RIGHT IS AN EXAMPLE OF A THINNING CUT

EXAMPLE OF A HEADING CUT

Removing a branch anywhere other than a point of origin

HOW TO WATER A NEW TREE OR SHRUB

Newly planted trees and shrubs should be watered deeply but infrequently rather than shallowly and frequently

True or False

FALSE: FREQUENCY IS MORE CRITICAL THAN VOLUME?

- **The key part of the question was "newly planted"!**
- Experiment done on 4-inch hardened-off B&B trees where 1.5, 3, or 5 gallons of water were applied per inch trunk caliper.
- ➡ Results show that volume did not matter but frequency did.

FREQUENCY OF IRRIGATION BASED ON TREE SIZE WHEN PLANTED IN SPRING

Size of nursery stock	Irrigation schedule for vigor	Irrigation schedule for survival
< 2 inch caliper	Daily: 2 weeks Every other day: 2 months Weekly: until established	Twice weekly for 2-3 months
2 – 4 inch caliper	Daily: 1 month Every other day: 3 months Weekly: until established	Twice weekly for 3 – 4 months
> 4 inch caliper	Daily: 6 weeks Every other day: 5 months Weekly: until established	Twice weekly for 4 – 5 months

Adjust based on rainfall, soil drainage and time of year planted

YOU SHOULD ALWAYS CHOOSE NATIVE PLANTS FOR DROUGHT AND PEST TOLERANCE. TRUE OR FALSE

FALSE:

- Native plants are excellent choices for many situations but their specific climactic and soil needs should be considered.
- Native plants may have good resistance to native pest and no resistance to imported pest (chestnut blight)
- Many non-native plants and heirloom plants are proven choices for tough urban environments. Right plant – Right place is our recommendation.

TOPPING TREES IS LIKE A HAIRCUT SOMETIMES IT'S NECESSARY AND A TREE CAN ALWAYS GROW OUT OF A BAD ONE: TRUE OR FALSE

DO YOU THINK THESE TREES WILL EVER LOOK GOOD AGAIN?

BUT IT IS SO "PURTY"

SAME TREES A YEAR LATER

As if the pruning was not bad enough they paved over the roots since I took the first picture

- Tree topping is never a justifiable pruning practice; it decreases tree health and is aesthetically unappealing
- A topped tree will require may require more maintenance and has an **increased** potential to become hazardous

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- Certified arborists and other legitimate landscape professionals do not practice tree topping
- If problems caused by a tree cannot be solved through acceptable management practices, the tree should be removed and replaced with plant material more appropriate for the site

APPLY WOUND DRESSING AFTER PRUNING TO INSURE AGAINST INSECT OR FUNGAL INVASION.
TRUE OR FALSE

FALSE:

- Like all living organisms, plants have natural resistance mechanisms to fight pest or disease.
- Covering wounds with traditional sealants inhibits oxidative processes, which in turn will reduce callus formation and subsequent compartmentalization (sealing of wounds)

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- Optimal pruning time for insect or disease prone species is in the winter when temperatures and infection rates are lower.
- Sterilize pruning tools between cuts. Such measures can help reduce the transmission of certain plant diseases.
- If you must prune a disease-prone species when insects or fungi are active (i.e. during the warmer times of the year), a light coating of an insecticide or fungicide may be warranted.

THE ROOT SYSTEM OF A TREE IS A MIRROR IMAGE OF THE TOP. TRUE OR FALSE

ONLY IF YOUR TREE HAS BLOWN OVER

- Tap roots are very uncommon in mature trees.
- Almost the entire root systems of most trees can be found within three feet of soil and most water and nutrient absorbing roots are in the upper 12”
- Spread of root system often extends two to three times the width of the crown.

MULCH IS VERY BENEFICIAL AND YOU CAN’T USE TOO MUCH TRUE OR FALSE

YES AND NO

- Mulch is good in moderation (2-3 inches)
- Do not put mulch against plant stem
- Don’t add very much mulch directly over the root ball of a newly set plant
- Do not add more mulch each year unless old mulch has decayed or been removed
- Never add mulch on top of landscape fabric without removing old mulch

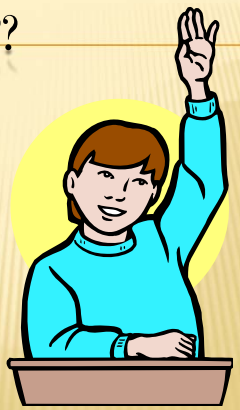
ROOTS ON TOP OF FABRIC IN MULCH

Mulch was continually added on top of landscape fabric and roots grew mostly in the mulch layer

WHY DO MANY MYTHS PERSIST?

- Lack of research to refute the myth
- Applying proper cultural techniques is too hard/too expensive, etc.
- Let someone "worry about it later" attitude.
- Money to be made by perpetuating the myth (think – tree topping)
- General ignorance of current research

QUESTIONS?????



SOURCES USED

- Edward F. Gilman, Professor, University of Florida
- Horticulture Myths from Dr. Linda Chalker-Scott
- International Society of Arboriculture