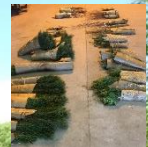




Care and Handling of Bareroot Tree/Shrub Seedlings – Manistee Conservation District



YOUR SEEDLINGS' TRIP HOME – When transporting your seedlings, here are some tips:

- Keep the roots moist, but DO NOT oversaturate them.
- Keep the seedlings cold prior to planting (ideally above 32 degrees Fahrenheit, but not warmer than 45-50 degrees Fahrenheit).
- DO NOT store the seedlings in a hot trunk of a vehicle, DO NOT freeze them, and DO NOT leave them unbundled and exposed to air that can dry out the roots.

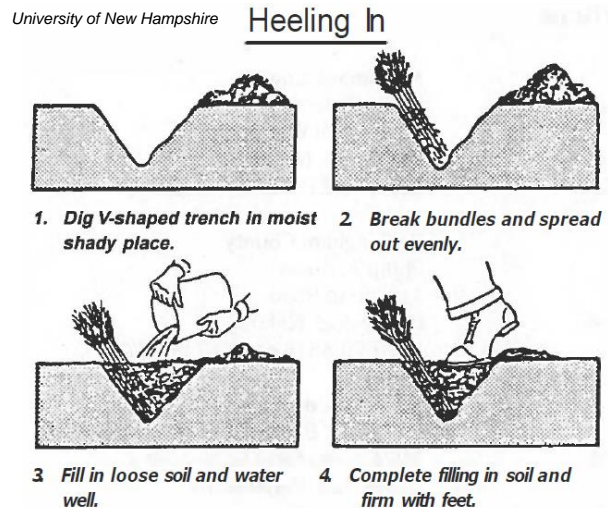
PLANT THE SEEDLINGS RIGHT AWAY! Try to plant bareroot seedlings within 48 hours of receiving them. If you cannot plant right away, know that survival rates may drop quite a bit. A “Plan B” option (not as good as planting right away!) is to store them in cold storage as described above (you may need to re-wet the roots [re-bundle them in the nursery paper after doing so!]) for no more than one week, or “heel them in” until you plant them. In Northern Lower Peninsula Michigan, April to early May or October are the planting seasons for bareroot seedlings.

SITE SELECTION – Did you properly match your seedling species to the appropriate soil conditions and light environment? If you have questions, contact the Manistee Conservation District and ask!

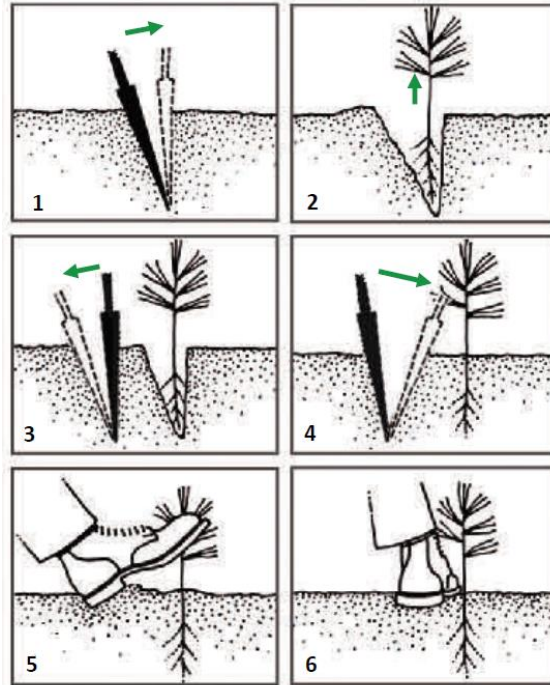
HOW FAR APART SHOULD SEEDLINGS BE PLANTED? There are MANY opinions about this. Here are some general recommendations: Conifers planted for timber plantations – 7 feet within rows and either 7 feet or 8 feet between rows. Conifers planted for a windbreak or visual screen – plant multiple, staggered rows at 15-20 feet (to allow for long-term lateral branch growth close to the base of the trunk) between rows and within rows. Deciduous trees planted for wildlife habitat or wood products (they can serve as both!) – 10-12 feet between seedlings. Shrubs for wildlife habitat or other purposes – 6-8 feet between seedlings.

PREPARING THE SITE – There are many approaches and for larger projects where several hundred to several thousand seedlings are planted in blocks, spending an entire season controlling the “weeds” prior to planting the seedlings can be helpful. Otherwise, use a scalping method (rip the weeds up with a garden tool WITHOUT REMOVING TOO MUCH OF THE BENEFICIAL TOPSOIL) to clear the weeds in a circular area with a diameter of ~3 feet, then plant the seedling in the middle of that circle. Also, if the soil is compacted, this can be stressful on seedling roots and lead to death – cultivating or tilling the planting area is recommended to aerate the soil if compaction is an issue.

IT'S TIME TO PLANT! For larger projects, if the site conditions are suitable, some contractors offer machine planting services. Otherwise, hand planting is how you will plant the seedlings. A planting bar or “dibble” is a great tool for this (you can shop online or contact a local garden store and ask about dibbles). A shovel also works. It is important that you plant at the proper depth, DO NOT J-root the seedlings, and properly backfill the soil. If you have heavy clay soil, contact the Manistee Conservation District for advice as this is a challenging soil type for planting and requires special precautions.



WATER THE SEEDLINGS RIGHT AWAY! As with other components of seedling planting, there are MANY opinions about this, but one recommendation to water immediately, the next day, three days after that, then three days after that. If drought conditions persist, then continue to water weekly (sandy soils) to every 10 days (heavier soils). This should be done during the first growing season, and possibly the second and third growing seasons if prolonged drought periods take place each year.



Planting with a dibble – Ohio Department of Natural Resources

Iowa Department of Natural Resources 2002

PLANTING GEL? The research on this topic is inconclusive overall. Planting gel does help roots hold moisture, but research is highly variable in terms of whether that translates to higher survival. Some studies have demonstrated higher survival due to planting gel, whereas other studies have shown it does not matter. If you believe it helps based on your experience, the Manistee Conservation District sells this product.

FERTILIZATION – If you matched your seedling species to the soil type, fertilization should typically not be necessary. Quick-release fertilizers can actually be harmful and create a “salting effect” on young seedlings. There may be some slow-release fertilizer options, but still proceed with caution. Also, biochar as a soil amendment has been shown to increase seedling survival.

PROTECTION FROM WHITE-TAILED DEER! – Many seedlings require protection from being over-browsed by white-tailed deer. Ask the Manistee Conservation District if you are not sure. Protection options include fencing, cages, tree or shrub tubes, and effective repellents such as fear-based repellents (e.g., bloodmeal). The Manistee Conservation District sells tree tubes, as well as bloodmeal.

FOLLOW UP WEED CONTROL – During the first growing season, keep weeds under control by using a fabric or coconut weed barrier (shop online or contact a local garden store), using mulch, hand pulling them, or using herbicide.

QUESTIONS? Contact Josh Shields, forester and wildlife biologist with the Manistee and Mason-Lake Conservation Districts, via phone at 231-889-9666, or email at joshua.shields@macd.org

References:

*Iowa Department of Natural Resources State Forest Nursery. 2002. *Successful tree planting: for land's sake.*

*Ohio Department of Natural Resources. *Bare-root tree planting guide.* Ohio Department of Natural Resources bulletin. Available at https://ohiodnr.gov/wps/wcm/connect/gov/f18822e4-54d8-46cc-96f5-f999359e6351/ODNR+Bareroot+Tree+Planting+Guide.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIK0N0JQ00QO9DDDDM3000-f18822e4-54d8-46cc-96f5-f999359e6351-nhZz0pt

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