

## Advantages and Disadvantages of Different Forms of Planting Material

Material Planted as:	Advantages	Disadvantages
<b>Seed</b>	Cheap, plentiful, easy to store, light weight, easy to transport, easy to sow. Low investment if it fails.	Low success rates, high predation from birds, rodents and insects, mold, high seedling mortality. Not useful in wetlands as main form.
<b>Seedlings, Sets, Divisions</b> (leafed out with bare roots in water)	Reasonable prices, light weight, many can be planted in a project, high success in flooded environments.	Vulnerable to wave energy, easy for birds to pull out.
<b>Liners</b> (small seedlings in pots)	Reasonable prices, developing root systems	Require good after care, watering in. Plants are small
<b>Plugs</b> (in plug trays)	Many plants can be produced in a tray. For grasses, root systems begin to develop well	Removal from trays can be work. Uniform root systems may not develop for non-grasses. Soil volume so small that moisture stress occurs quickly.
<b>Plugs or cores</b> (from sod)	Easy and can yield many cores. Can be used with native soils or from natural populations	Can include weeds. Can leave root systems in ground. If harvested from native populations, holes may persist.
<b>Containers</b>	Allow adequate root development and use of larger plants. Containers protect plants to some degree. May be stored on ground with plants upright. May be watered using hoses, sprinklers. Available and can be planted any time of year. Easy to up-size.	Expensive. Damage from sun common. Containers hide root problems. Pot-bound condition common. Plants in large containers may have small root systems.

<b>Plant bands</b> (open bottomed paper containers)	Open bottoms allow air pruning of roots. Many can be stored and grown in milk cases. Paper biodegrades after planting.	Requires special wire benches for support. Filled cases are heavy. Paper may wick water out of soil
<b>Tree tubes</b>	Work well for tap-rooted trees. Come in various sizes.	Generally do not last long; roots outgrow tubes
<b>Bare Root</b>	Cheap. Light weight. Can be stored in sawdust bed or cooler.	Are available only in late fall or winter. Must be planted before leaf-out. Limited to certain species.
<b>Ball and Burlap</b>	Works for larger specimens. Plants usually dug immediately before they are needed.	Expensive. Hard work. May require special machinery.
<b>Bulbs, Rhizomes, Corms</b>	Light weight. Easy to install. Good performance. May be available year 'round. Good for some aquatics.	Duck food. May float. You do not know what kind of success that you have until material sprouts (usually in Spring).
<b>Live stakes</b>	Cheap to free. Good success rate in moist soils. Can plant high volumes of material.	Few species work (Willows, poplars, red osier dogwood, snow-berry). Harvest can damage existing populations. Can result in low genetic diversity.
<b>Pull-ups</b> (live rooted saplings)	Free. Root well in moist soil. Will keep for a while.	Limited to saplings near site.
<b>Layering</b> (rooting woody vegetation in place)	Free material.	Low volume. Few species work.

<b>Sod</b>	Works well with grasses. Good for salvage.	Sod is heavy and requires specialized sod cutters. Does not work for bulbs, woody plants.
<b>Soil seed bank</b>	Can be used to replace existing soil or inoculate.	Soil is heavy. Difficult to work with in wetlands because of wheel loading. You get weeds along with desirables.
<b>Haying</b> (harvesting live hay with seedheads intact)	Works well in mixed grasslands.	Seeds will be from whatever is ripe at time of harvest. Weeds come along.