White oak seedlings

Blackford Valley Farm | Planting guide

White oak (*Quercus alba*) is a long-lived native shade and timber tree with acorns used by deer, turkeys, squirrels, and other wildlife. It is a large-tree choice rather than a quick source of nuts; seedling growth and acorn yield vary by site and year.

Site and growth

- **Space:** Make room for a broad crown and a tree that may reach roughly **60–100 feet** on favorable sites. Keep it well away from structures and overhead wires.
- **Soil and pH:** Prefer **deep, moist, slightly acidic loam**, **moderately well drained or better**, in sun or a bright woodland opening. Clay is tolerated if aerated. NC State and Iowa State support slight acidity, not a verified pH 5-6.5 optimum. Unlike chinkapin oak, white oak is not a first choice for limestone-rich alkaline ground: high pH can limit iron availability and cause chlorosis (yellow leaves with greener veins), weakening growth.
- **Roots and water:** A deep taproot develops where soil permits. Shallow bedrock, compacted layers, or a high water table restrict usable rooting volume. Established trees tolerate some drought, but young seedlings need moisture checks and supplemental water through dry spells. Avoid prolonged flooding and saturated soil: oxygen-starved roots can decline or die. Severe drought can kill seedlings; compaction makes both water and aeration problems worse.
- **Climate:** This native oak is widely grown in the Midwest; check local hardiness and site conditions.

Read the soil map

Open Soil Location Info for preliminary screening, then check the planting spot and test soil. Map-unit estimates may not describe the soil at your hole; missing data are not proof of no limitation.

- **pH by depth:** Compare surface and subsoil layers. Acidic topsoil over alkaline subsoil still warrants caution as roots expand; confirm with depth-specific samples before choosing amendments.
- **Wetness and rooting:** Read drainage, seasonal water-table depth, flooding, ponding, bedrock, and rooting restrictions together. Choose an aerated upland root zone, not a permanently wet depression.
- **Available water storage (AWS):** Upper-100-cm storage is potential plant-available water, not current moisture or a watering schedule. Low AWS or shallow usable soil means closer drought checks; high AWS does not excuse poor drainage.

Acorns and wildlife

White oak belongs to the white oak group; its acorns mature in **one growing season**. Deep, aerated soil and adequate moisture support growth and crown development; drought, restricted roots, and chlorosis can limit future bearing capacity. Give several oaks room for mature crowns and pollen movement. Acorn mast varies with genetics, weather, pollination, and year; better soil does not guarantee annual crops. A species-specific site index compares dominant-tree height at a stated reference age, not acorn yield; never assume a missing age or convert it to nuts per tree. Acorns for people require correct identification and processing; do not eat them raw.

Mature acorns can attract deer to a hunting property in fall, though crop size, drop date, and local deer movement vary; plantings cannot guarantee a hunting opportunity.

Plant your potted seedling

We sell and recommend **potted seedlings**. Our planting method requires a **square hole, not a round one**. A wider hole is preferred, not required; it must fit the root ball without squeezing it. Dig no deeper than the root ball in its pot, and shallower as needed to leave the **top of the root ball slightly above surrounding ground level**. Rest it on firm soil so it does not settle too deep. Water the pot before removal; support the root ball, not the stem, and keep it together. Check for circling roots rather than forcing a root-bound ball into the hole. Backfill around the sides with native soil, taper soil to cover exposed side roots, and water thoroughly. Keep the root flare exposed; do not pile soil or mulch over the ball's top or against the trunk. Check both the root ball and nearby soil for moisture while roots establish.

Protect and establish

In browsing country, a securely staked, ventilated **5–6-foot tube** or tall cage is close to essential for a young oak. Deer browse and rub stems; **rabbits, mice, and voles** can strip bark and kill seedlings. Seat and secure the tube at ground level, inspect inside, and keep grass and weeds clear around it: rodents can tunnel beneath an open base or nest in thick vegetation. Water new trees during drought and maintain the guard until the growing point and bark are less vulnerable.

A good fit for

Long-term woodland, shade, and wildlife projects on well-drained ground.

Persistent chlorosis, sudden wilt, or dieback needs diagnosis, not automatic fertilizer or extra water. Soil stress is not itself oak wilt. In Iowa, prune oaks in **December-February** to reduce infection risk; follow Extension wound guidance for unavoidable spring or summer cuts.

Learn more

- US Forest Service: white oak silvics
- NC State Extension: white oak soils, roots, and chlorosis
- Iowa State Extension: white oak soil and drainage
- Iowa State Extension: oak pruning and oak wilt
- Penn State Extension: tree planting and vole management