Northern pecan seedlings

Blackford Valley Farm | Planting and care guide

Pecan (*Carya illinoinensis*) is a large, long-lived nut tree. Our ultra northern pecans are **seedlings, not grafted cultivars**. Nut size, shell thickness, bearing age, flowering, disease resistance, and ripening differ among seedlings. A northern label does not guarantee annual crops on every Iowa site.

Choose the site and allow room

Give pecans **full sun, deep, well-drained soil, and ample moisture without persistent waterlogging**. Avoid frost pockets and shallow, compacted ground. Mature pecans can exceed 70 feet tall with very broad crowns. For widely spaced landscape trees, roughly **40-60 feet apart** is a starting range; mature orchard designs may need 70-80 feet or planned thinning. Leave room for machinery and harvest, away from overhead wires and buildings.

Winter survival is not the same as ripe nuts. Iowa State's archived Growing Nuts in Iowa guidance says northern pecans can grow through most of Iowa but generally ripen nuts in the southern half. A cool summer, early freeze, seed source, and individual genetics all affect success. On marginal sites, plant a trial rather than assuming dependable production.

Soil, roots, and crop potential

Pecan is a **river-valley hickory**, adapted to deep soils with a substantial moisture reserve, not permanently stagnant water. It develops a strong taproot and wide-spreading lateral and surface roots; a deep root does not make a newly transplanted tree drought-proof. Avoid cultivation that damages surface roots. NC State recommends deep, well-drained soils with moderate water-holding capacity, ideally **3-4 feet** of soil. Sandy loams and well-drained clay loams can work; OSU notes that permeable clay subsoil can improve water storage. Shallow, compacted, or impermeable layers reduce usable rooting space and drought reserves.

Prefer mildly acidic soil. NC State recommends **pH 6.0-6.5** for production; Oklahoma State's orchard guidance gives **6.0-7.0**. These are management targets, not absolute survival limits. Botanical descriptions report wider acidic/alkaline tolerance, but survival is not equivalent to strong growth and filled nuts. On basic soils, zinc may become unavailable at **pH 7.0 and above** even when present in a soil test; over-liming can induce zinc and iron deficiencies. Use laboratory soil testing and, for established trees, foliar analysis to guide correction. Fertilizer cannot fix inadequate rooting depth or water supply; see OSU's fertility guidance.

Moist is not waterlogged. Pecan can tolerate occasional flooding, but timing and duration matter. Standing water blocks oxygen needed by roots; prolonged saturation reduces productivity and can kill trees. OSU's orchard-selection benchmark is a wet-season water table at least **5 feet below the surface**, not a universal survival cutoff or a trial of our ultra northern seedlings. A shallow water table can confine roots and leave the tree less drought-resilient when the soil later dries. Favor moist, drained ground over a depression that holds water.

Good soil helps both tree and crop. Adequate moisture, aeration, rooting room, and diagnosed nutrition support canopy growth and well-filled kernels. Dry, light soils often need irrigation for consistent production; severe establishment drought threatens survival. A mature tree may survive drought yet produce poor nuts. Good soil does not override short seasons, frost, pollination failures, alternate bearing, or disease.

Soil map

Use our soil map for screening, with NRCS Web Soil Survey for further reports. Compare **drainage, flooding/ponding, and seasonal water-table depth** with the need for aerated roots. Read **pH layers** by depth: acidic topsoil can conceal basic subsoil. **Root restrictions and bedrock depth** flag limited rooting room. **Available water storage (AWS)** is an estimated reserve over the reported soil depth, not current moisture or an

irrigation prescription; young roots cannot yet use the whole profile. More stored water is helpful only where roots can grow and breathe. Survey estimates may miss local soils, compaction, or drainage changes; confirm in the field and use a laboratory soil test for amendments. Missing values mean unknown, not safe.

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.

Pecan develops a strong taproot; preserve it within the intact root ball and do not bend it upward during transplanting.

Establish and protect

Check soil moisture once or twice weekly and more often in hot, drying weather. Water the rooting area when it begins to dry; avoid saturated soil. Continue checking into fall until the ground freezes, and during dry spells in later establishment years. Keep grass and weeds back; apply **2-4 inches of mulch**, tapered away from the trunk and root flare. Do not pile mulch against bark.

Establishment watering: Apply water slowly to wet the actual rooting area, then allow drainage; surface wetness alone is not enough. Check beneath mulch and adjust to rainfall, heat, soil texture, and root spread. No universal gallons-per-tree schedule fits every site. **Mature-tree watering:** Larger canopies and crops use more water. Monitor the broader root zone, not only beside the trunk; water shortages during spring shoot growth, nut sizing, and especially late-summer/early-fall kernel filling can reduce crop quality. Use soil-moisture checks and local irrigation advice rather than copying southern-state gallon rates or calendar dates to Iowa.

Protect against deer browsing and antler rubbing with a tall cage or maintained tree shelter; add suitable lower protection against rabbits and rodents. Inspect guards, stakes, and ties for rubbing or constriction, and adjust as the tree grows. Stake only if needed for stability, using flexible ties, and remove support once established. Avoid heavy pruning of new trees. Do not apply routine fertilizer or zinc treatments without a soil/foliar diagnosis and local advice.

Pollination and expectations

Pecans are wind-pollinated. Male pollen shed and female flower receptivity often occur at different times on the same tree. **Plant several genetically different pecans** and observe flowering overlap; genetically distinct seedlings alone do not guarantee compatible timing. Selected orchards use complementary Type I (pollen first) and Type II (female flowers first) cultivars. Do not assign a seedling its seed parent's flowering type or promise pollination from one neighbor.

Expect a long wait and variable performance, not a fixed first-crop date. Seedling nut quality may take many years to evaluate. Crops can alternate between heavier and lighter years. Adequate moisture during nut filling matters; winter hardiness, good growth, and flowering do not by themselves establish reliable harvests.

Watch the crop and harvest

Scout for leaf and shuck disease, pecan weevils, and other pests. **Scab resistance varies**, and wet conditions favor disease; a northern seedling is not automatically resistant. Seek a diagnosis and current Iowa Extension advice rather than following a blanket pesticide schedule. Mature-tree spraying requires specialist equipment.

Scab is a foliage/shuck disease favored by rainy, humid conditions and prolonged leaf wetness; susceptible trees can lose a crop even on well-drained soil. Root oxygen stress from saturated soil is a different problem. Improve air movement and avoid crowding, but do not treat good drainage or good nutrition as disease immunity. Wilt, yellowing, or dieback can reflect water stress, nutrient problems, or disease; diagnose before adding more water or fertilizer.

Harvest as **shucks split and nuts release**, not by a promised calendar date. Nuts whose shucks remain closed at a hard freeze may not mature normally. Collect promptly, discard moldy or damaged nuts, dry sound nuts before storage, and refrigerate or freeze to slow deterioration. Wildlife may take a substantial share. No yield or hunting-season drop date is guaranteed.

Sources and further reading

- Iowa State Extension: Growing Nuts in Iowa (archived; regional ripening caution)
- Missouri Extension: Growing Pecans in Missouri
- Missouri IPM: Pecans, flowering types and harvest
- Oklahoma State Extension: Managing Pecans in the Home Landscape
- NC State botanical profile: Pecan (species traits and wider tolerance, not a yield guarantee)
- Iowa State: new-tree care

Prepared October 2026 from the linked sources. Production guidance for grafted orchards does not establish our seedlings' yields or disease resistance. Southern-state cultivar, irrigation, and chemical recommendations are not automatically suitable for Iowa.