



WALNUT NOTES

Planting Seedlings

Black walnut plantations can be established by either planting seeds (see Note 2.03: Direct Seeding) or by planting seedlings. Most plantations are established using bare-root, nursery-grown seedlings because it's more predictable than planting seeds and because it's cheaper than planting containerized stock (see Note 1.03: Growing Containerized Walnut). If that's what you decide to do, here are the steps to follow.

1. Prepare and Lay Out the Planting Site

For timber production, spacings of 10 or 12 feet square (436 or 302 trees per acre, respectively) are recommended because these spacings allow room for mechanized weed control and allow trees to reach a 5-inch average d.b.h. without thinning. Band or spot-spray herbicides within the tree rows before planting to (1) remove the immediate competition, (2) mulch the soil surface, keeping soil moisture from evaporating, and (3) leave weeds between the rows to provide some shade and wind protection (see Note 2.01: Choosing a Good Walnut Site and Note 2.02: Site Preparation).

2. Order Seedlings

Obtain seedlings from a private nursery or from your State nursery through your State forester or local extension agent (see Note 1.04: Seedling Sources). If you order ungraded seedlings, order extra so you can cull out all seedlings with damaged or diseased roots and the smallest 10 to 20 percent of the seedlings.

3. Prepare the Seedlings

The care you give your seedlings after they arrive from the nursery and during planting will have more bearing on their survival and early growth than how they are planted. Seedlings should be planted as soon as possible after they arrive. Open packages when they arrive and rewet roots if necessary. Bundled seedlings can be stored for several days in a cool, shady place if protected from freezing or stored for 2 to 4 weeks in cold storage (34 to 38° F) without seriously deteriorating. Stack bundles so air can freely circulate around each bundle to prevent "heating" within the seedling bundles.

Seedlings can also be temporarily transplanted into "heeling-in" trenches. Dig a V-shaped trench that is deep enough to cover the entire root system and long enough to spread seedlings out along the sloping side. Pack soil firmly around roots, and water as needed. Trenches should be dug in a shady, somewhat protected area and mulched to give the seedlings additional protection.

Before planting, soak seedling roots in water for 1 to 2 hours; keep seedlings moist when planting by carrying them in planting trays or canvas planting bags packed with moist peat. Before planting, prune the seedling taproot to a length of 8 inches and all lateral roots to a length of 1 to 2 inches. Do not shear lateral roots off because this reduces the number of potential sites for new root growth. Do not plant seedlings when there is snow on the ground, when soils are too wet, or if frost-heaving can still occur.

4. Plant the Seedlings Walnut seedlings can be planted using either the hole or the slit method.

Hole method.-Use a shovel, grub hoe, mattock, or post hole digger to dig a hole deep and wide enough to spread the root system out in all directions. The seedling root collar should be placed about 1 inch below the groundline. Layer soil back into the hole 2 to 3 inches at a time to minimize the size and number of air pockets. If you use a mechanical auger or post hole digger in heavy, wet soils, the sides of the hole can become “plastered” forming a “pot” through which the seedling roots cannot penetrate (fig. 1).

Slit method.-Make a 10-inch-deep vertical slit with a planting bar, tile spade, or mechanical tree planter. Insert the seedling taproot to the bottom of the slit and lift it slightly to spread out lateral roots. Firmly tamp soil around the roots at both the top and bottom of the slit. Air pockets, especially those at the bottom of the slit, help to reopen the soil when it dries out and shrinks. If you use a tree planting machine, make sure the slit is deep enough to prevent the seedling from forming L-shaped roots along the bottom of the slit. In addition, you should follow the machine to straighten and tamp soil around each seedling. If the seedling is planted on a slant, a sprout may originate from the root collar and replace the original stem (fig. 2).

Walnut seedlings normally must go through a brief period of transplant shock before they adapt and begin growing new shoots.

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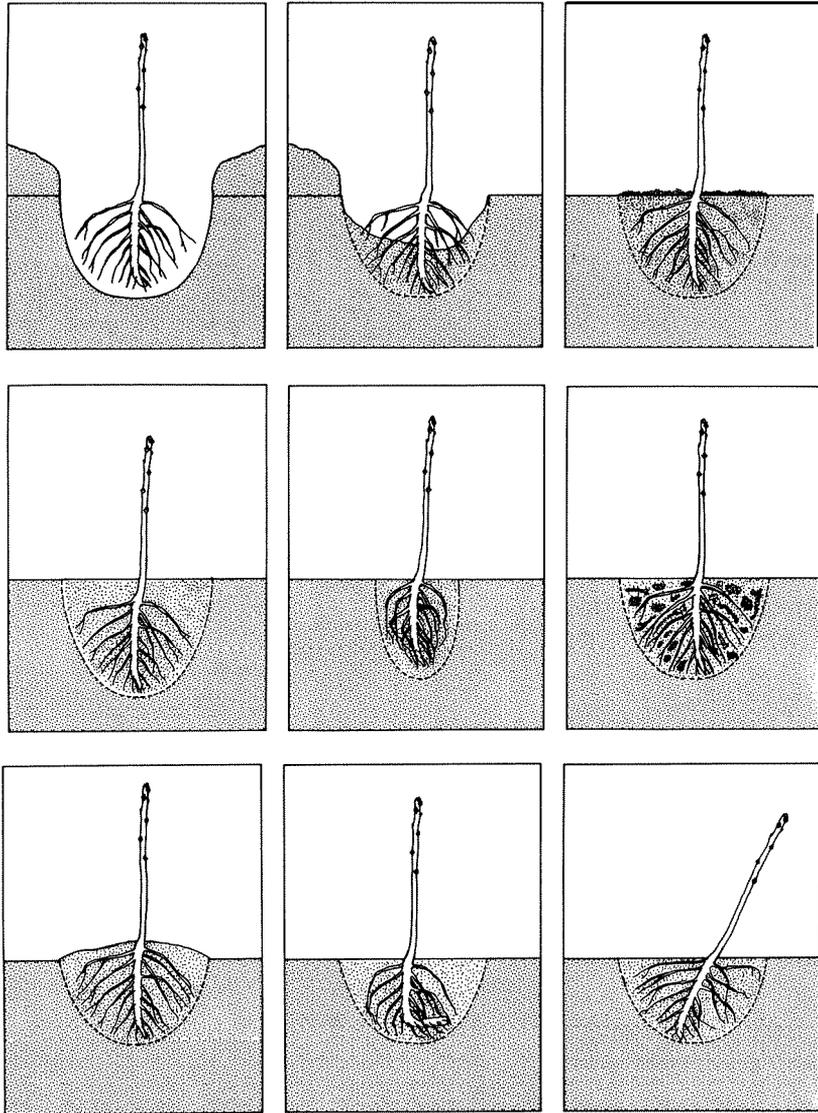


Figure 1.-Hole method of planting large or fibrous rooted seedlings.

CORRECT METHOD FOR HOLE PLANTING

- A. Dig hole slightly larger than the rootball when spread out.
- B. Set seedling root collar slightly deeper than top of hole, partially fill hole, and firm soil
- C. Fill hole, firm soil, and add loose soil as mulch.

INCORRECT METHODS FOR HOLE PLANTING

- D. Seedling set too deep, hole too large.
- E. Compacted rootball, hole too narrow.
- F. Duff and debris added to hole which may form air pockets
- G. Hole too shallow and will lead to exposed roots.
- H. "L"- or "J"-rooted, hole too shallow.
- I. Seedling not vertical, hole too shallow.

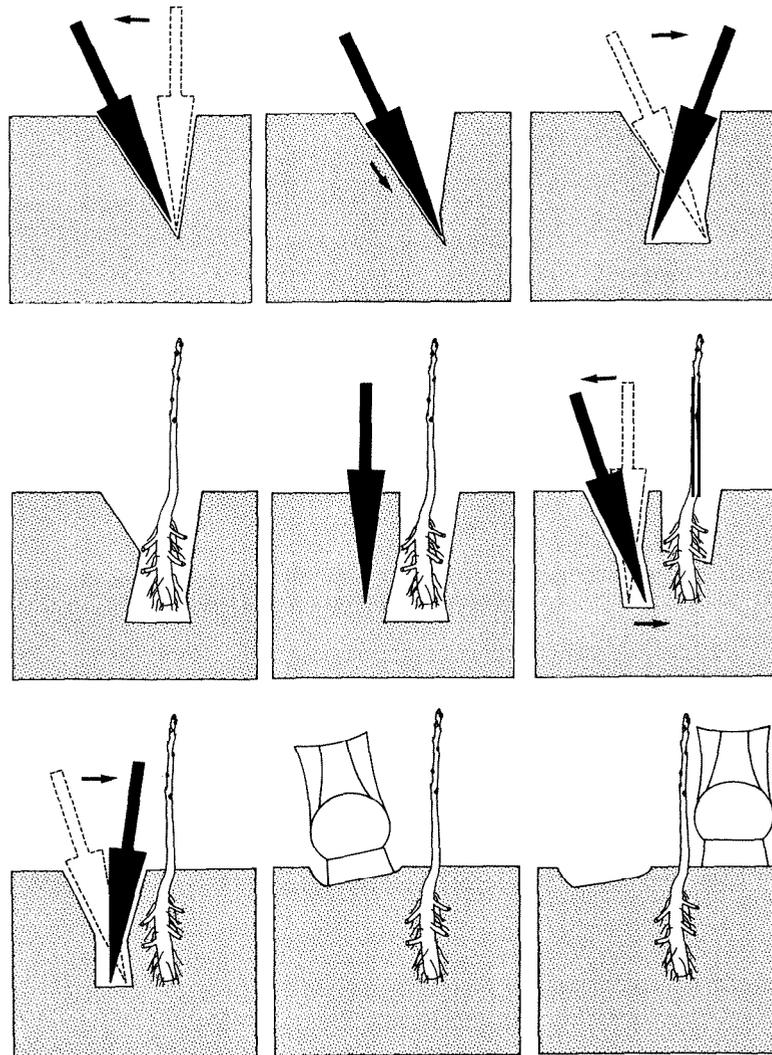


Figure 2.-Slit planting method with planting bar or tile spade.

- A. insert bar straight down and pull backward.
- B. Push bar down at same angle to get a new bite.
- C. Push bar to vertical position.
- D. Remove bar and set seedling in hole at correct depth.
- E. Insert bar straight down about 2 inches behind first hole.
- F. Pull bar back and tightly pack soil around lower roots.
- G. Push bar forward and tightly pack soil around upper roots.
- H. Repeat steps E to G and close new hole with shoe heel.
- I. Firm soil around seedling with shoe heel.