



# WALNUT NOTES

## Seed Handling

Walnuts are usually collected in the fall or early winter shortly after falling or being shaken from the tree. Because they are a favorite food of squirrels and other rodents, ripe walnuts should be collected as soon as possible to minimize losses. When ripe, walnut husks are yellowish green to dark brown. Once off the tree, walnut seeds must be handled several times before they're ready to be planted. Remember: wear rubber gloves when handling walnuts. The husk material can severely irritate and stain your skin.

### 1. Husk

Although walnuts may be sown with intact husks, they are easier to handle without husks. If you plan to store walnuts, husk them as soon as possible, while they're still firm. Here are three ways:

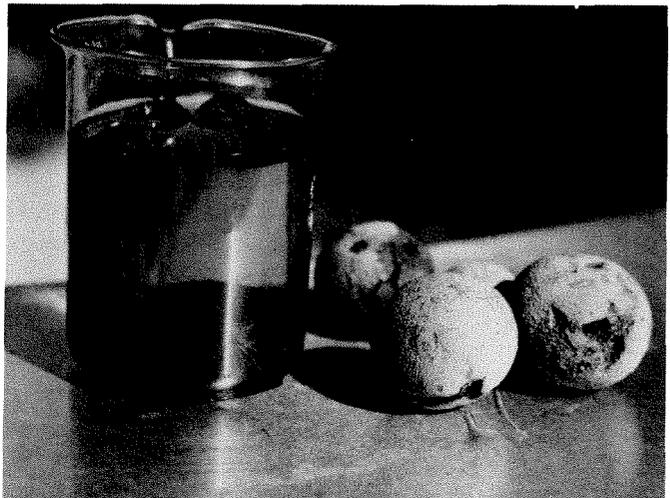
- Remove husks with mechanical hullers similar to corn shellers (easiest method but hullers are not always available to small landowners).
- Mix equal volumes of nuts and water in a cement mixer; blades in the cement mixer remove husks when the mixer is turned.
- Drive over walnuts repeatedly with a small car or pickup truck until the husks are crushed.

If husks remain on stored nuts, heat builds up and the nuts become less viable. For this reason, keep unhusked walnuts in porous bags (like burlap sacks) until the husks are removed. With time, the husks dry out and harden, making them even more difficult, if not impossible, to remove.

### 2. Test for Viability

Within 3 days after husking, immerse walnuts in water to separate filled and empty seeds (fig. 1). Filled seeds sink and will probably germinate; empty seeds float and

Figure 1.—Freshly husked walnuts can be tested for viability by immersing them in water.



should be discarded. Do not allow walnuts to dry out before testing them—all dry seed will float. Drain filled seeds by placing them on a wire screen for about 15 minutes. They will then contain the proper moisture content (about 30 percent) for either stratification or storage.

### 3. Stratify

Freshly gathered seeds are dormant and require 3 to 4 months of cold stratification to germinate properly. Note: stratification will not work with seeds that have been allowed to dry out. Seeds of northern origin may require longer periods of cold treatment than those from more southerly sources. Small seedlots are commonly stratified by holding nuts for 90 to 120 days in moist peat or sand at 34° to 41° F (2° to 5° C) in 4-mil plastic bags closed with wire ties. Alternating daily temperatures between 37° and 52° F (3° and 11° C) results in even greater and more uniform germination. Or, nuts may be stratified by storing them in well-drained outdoor pits from December through March (fig. 2). Construct the pits by alternating single layers of nuts and 2-inch layers of sand. Cover with at least 6 inches of soil. Pit depth depends on the number of nuts to be stratified, but most pits are 3 feet deep.

Figure 2.—One way to stratify nuts is to store them between layers of sand in a well-drained outdoor pit.



### 4. Store

Because large nut crops may occur only every 2 to 3 years, some walnut seed has to be stored for sowing during poor seed years. Successful seed storage depends on proper seed moisture content. For example, walnut seed may be stored at subfreezing temperatures for up to 1 year if the seed moisture content is reduced to 17 percent. However, if husked nuts are to be stored at 37° F (3° C), then moisture content should be between 20 and 40 percent. Here's how to determine moisture content:

$$\text{Moisture content} = \left( \frac{\text{Wet weight} - \text{Oven dry weight}}{\text{Wet weight}} \right) \times 100$$

You can use this formula with a sample of only 5 nuts. Obtain oven-dry weight by weighing nuts after cracking and leaving shells and nuts in an oven at about 220° F (103° C) for 16 hours.

Walnut seed stored at subfreezing temperatures at reduced moisture content must be soaked to increase the moisture content to approximately 30 percent. It must then be stratified before sowing.

5. sow

Although stratified seed can be sown in the spring, most nurseries sow walnuts in the fall to avoid filling valuable storage space with large bulky seed. Seedbeds containing fall-sown walnut must be mulched and covered with wire cages to minimize predation by rodents. Walnuts are usually sown in the nursery at a depth of 1 to 2 inches at a rate of around 8 sound seeds per square foot (86 sound seeds per square meter). In addition, walnuts may be sown directly in the field, avoiding the nursery altogether (see Note 2.03: Direct Seeding).

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