



Harvesting and Handling at Home

Overview

Harvesting is one of the most rewarding parts of growing pecans, but it's also one of the most time-sensitive. Once nuts begin to fall, the clock starts ticking. Delays in gathering, cleaning or drying can lead to mold, off-flavors or kernel darkening that reduce quality and storage life. Fortunately, with a little planning and a few simple tools, home growers can harvest and handle pecans in ways that preserve their flavor, texture and value.

This publication will cover:

1. **When and How to Harvest Pecans at Home:** Signs of nut maturity and shuck split, importance of timely harvest to prevent quality loss, and differences between natural drop and mechanical shaking.
2. **Harvesting Methods for Home Orchards:** Hand-harvesting tools and techniques, using tarps, rakes or nut rollers, and when mechanical shakers or sweepers may be practical.
3. **Cleaning and Sorting After Harvest:** Removing leaves, sticks and debris; simple home-scale cleaning methods; and why early cleaning improves drying and storage.
4. **Drying Pecans for Quality and Storage:** Why drying is essential after harvest, target moisture levels for short- and long-term storage, natural drying versus small-scale mechanical drying, and how to avoid rewetting and mold.
5. **Storing In-Shell Pecans at Home:** Ideal temperature and humidity for storage, how long pecans can be stored in-shell and when to consider refrigeration or freezing.
6. **Shelling Pecans at Home:** When to shell (immediately versus just before use), manual shelling tools and tips for home-scale cracking.
7. **Understanding Basic Grading for Home Use:** What “percent shell-out” means, simple visual grading (full versus shriveled kernels) and when to sort out moldy, dark or damaged nuts.

1. When and How to Harvest Pecans at Home

Signs of Nut Maturity and Shuck Split

Pecans are ready to harvest when the green outer husks (called shucks) begin to split open naturally, revealing the brown shell inside. This process, known as **shuck split**, is the most reliable sign of maturity. It typically occurs in Louisiana between **late September and early November**, depending on the cultivar and weather conditions.

Look for:

- Shucks splitting along natural seams
- Shells turning brown and separating easily from the husk
- Nuts beginning to fall naturally from the tree

Avoid harvesting too early. Immature nuts may shrivel during drying or fail to develop full flavor.

Importance of Timely Harvest to Prevent Quality Loss

Once mature pecans begin to fall, it's important to **collect them promptly**. Nuts left on the ground too long are vulnerable to:

- **Moisture damage** from rain or dew
- **Mold and rot**, especially in humid conditions
- **Insect or animal feeding**
- **Darkened kernels** and off-flavors from rewetting

Even in home settings, **daily or near-daily collection** during peak drop is ideal to preserve quality.

Differences Between Natural Drop and Mechanical Shaking

In commercial orchards, mechanical shakers are used to harvest pecans all at once. In home orchards, however, most nuts are collected as they **drop naturally** over several days or weeks.

If you have access to a small tree shaker or can gently shake tree limbs by hand, you may be able to **encourage mature nuts to fall**. Only do this **after shuck split** has begun. Shaking too early can damage the tree or dislodge immature nuts.



Green outer husks (shucks) split along natural seams, revealing the brown shell inside. This is the most reliable sign that pecans have reached maturity. Photo by William Reid



Dry, brown shucks are completely opened, allowing nuts to separate easily and fall naturally from the tree. Harvest should begin promptly to avoid losses from wildlife or weather. Photo by William Reid



A hydraulic tree shaker clamps onto the trunk and vibrates a tree to dislodge mature pecans quickly. This method is common in commercial orchards but rarely used in home settings. If shaking by hand or with small equipment, wait until shuck split has begun to avoid damaging the tree or removing immature nuts. Photo by William Reid

2. Harvesting Methods for Home Orchards

Harvesting pecans at home doesn't require expensive equipment, but the right tools and timing can make the job easier and help preserve nut quality. Whether you're picking up a few trees' worth of nuts or managing a small orchard, there are several practical options.

Hand-Harvesting Tools and Techniques

For most home growers, hand-harvesting is the simplest and most cost-effective method. Pecans can be gathered directly from the ground after they fall or are shaken loose. To make the process easier, consider using nut rollers, rakes or tarps:

Using Tarps, Rakes, or Nut Rollers

Several options for harvesting include:

- **Nut rollers** (also called nut wizards or nut gatherers) are handheld tools that pick up nuts with minimal bending. They work best on lawns or smooth orchard floors when nuts are dry and not buried in grass or debris.
- **Rakes** or leaf blowers can help clear leaves and debris or form windrows and piles. Be gentle to avoid damaging the shells.
- **Tarps** are especially useful when harvesting from just a few trees. Spread them under the canopy before shaking or during peak drop. Afterward, simply fold and pour the nuts into a container.

When collecting nuts, use breathable containers like mesh bags or ventilated buckets to prevent moisture buildup. Avoid plastic bags unless the nuts are fully dry, as trapped humidity can lead to mold and spoilage.

Frequent gathering is important. Leaving pecans on the ground too long increases the risk of mold, darkened kernels and insect damage, especially in humid or rainy weather. As you gather, separate immature nuts—often dropped with green, un-split shucks—from mature, well-filled ones. Immature pecans typically have poorly developed kernels and are unlikely to cure well.

When Mechanical Shakers or Sweepers May Be Practical

While most homeowners won't need commercial-scale equipment, small-scale mechanical tools can be helpful in certain situations. These tools are best suited for relatively smooth, dry ground and may require some practice to use effectively without damaging trees or nuts:

- **Handheld or trunk-mounted shakers** can be used to dislodge nuts from trees with dense canopies or when natural drop is slow. Some models use a motorized grip or strap to vibrate the trunk, while others rely on manual shaking.
- **Walk-behind sweepers or blowers** use rotating brushes or paddles to gather nuts into rows for easier pickup. They're most effective on short grass or bare soil and can save time in larger home orchards.
- **Leaf blowers** can also be used to move nuts into windrows, especially when debris is light. Battery-powered models are quieter and easier to maneuver around trees.

If you're considering mechanical tools, test them on a small area first to ensure they suit your orchard conditions and don't bruise the nuts or bark.

3. Cleaning and Sorting After Harvest

Removing Leaves, Sticks and Debris

Freshly harvested pecans often come mixed with leaves, twigs, shuck fragments and other debris, especially if they were gathered from the ground or shaken from the tree. Removing this material early helps prevent mold, speeds up drying and improves the appearance of the nuts.

For small harvests, debris can be removed by:

- **Hand sorting:** Pick out large sticks and leaves by hand.
- **Screening:** Use a simple mesh screen or hardware cloth to sift out smaller debris.
- **Blowing:** A leaf blower set on low can help blow away lightweight material while heavier nuts stay in place.

Simple Home-Scale Cleaning Methods

Home growers don't need commercial cleaning equipment to get good results. A few low-tech tools can go a long way:

- **Laundry baskets or colanders** can be used to rinse and drain pecans if they're muddy.
- **Box fans or shop vacs (on reverse)** can be used to blow off light debris.
- **Rolling nuts across a sloped board or screen** can help separate heavier nuts from lighter trash.

If pecans are especially dirty or have been harvested in wet conditions, rinse them briefly in clean water and allow them to dry thoroughly before storage. Avoid soaking, which can increase the risk of mold.

Why Early Cleaning Improves Drying and Storage

Cleaning pecans soon after harvest improves airflow around the shells and reduces the risk of mold or off-flavors. Debris like leaves and shuck fragments can hold moisture, which slows drying and may lead to spoilage. Clean pecans also dry more evenly and are easier to inspect for damage or defects.

4. Drying Pecans for Quality and Storage

Why Drying Is Essential After Harvest

Freshly harvested pecans may look dry on the outside, but the kernels inside often retain significant moisture, especially if the nuts were shaken from the tree before fully drying on the limb. If not dried properly, pecans are prone to:

- Mold growth
- Kernel darkening
- Off-flavors or rancidity
- Reduced storage life

Drying is one of the most important steps in preserving pecan quality. It helps stabilize the nut, improve flavor and prepare it for storage.

Target Moisture Levels for Short-Term and Long-Term Storage

Pecan kernels should be dried to the following moisture levels:

- **8% or less** for short-term storage (under 3 months)
- **4.5% or less** for long-term storage (3 months or more)
- **3.5%** is ideal for maximum shelf life in refrigerated or frozen storage

These levels help prevent mold and slow the breakdown of oils that cause staleness.

Natural Drying Versus Small-Scale Mechanical Drying

Natural drying is often sufficient for small home harvests, especially in dry weather:

- Spread pecans in a **single layer** on screens, trays or cardboard in a well-ventilated, shaded area.
- Stir or rotate the nuts daily to promote even drying.
- Avoid direct sun, which can overheat the shells and darken the kernels.
- Drying may take **seven to 14 days**, depending on humidity and air movement.

Small-scale mechanical drying can speed up the process and reduce weather risks:

- Use a **dehydrator, modified food dryer or homemade drying box** with warm air circulation.
- Keep air temperature **below 100 F** to avoid damaging flavor or texture.
- Ensure good airflow and monitor moisture levels if possible.

Drying is fastest when nuts are clean and free of leaves or shuck fragments. To check curing progress, crack a few nuts after 7–10 days. Properly cured kernels will have a firm texture, golden-brown color, and a clean snap when broken. If the kernel feels rubbery or looks pale, continue drying.

Avoiding Rewetting and Mold

Once pecans are dry, they are **very sensitive to moisture**. Rewetting can cause:

- Shell staining
- Kernel darkening
- Bitter or musty flavors
- Rapid mold growth

To prevent this:

- **Harvest only in dry weather** when possible.
- **Do not leave nuts on wet ground** or in damp containers.
- **Store dried nuts in breathable containers** (like mesh bags or baskets) until ready for shelling or long-term storage.

5. Storing In-Shell Pecans at Home

Ideal Temperature and Humidity for Storage

Once pecans are dried to the proper moisture level (around **4.5%** for long-term storage), they must be kept in conditions that prevent rewetting, mold, and quality loss. The ideal storage environment for in-shell pecans is:

- **Temperature:** 32 F to 34 F (refrigerator or unheated indoor space in winter)
- **Relative humidity:** Around 65%

These conditions help maintain kernel quality and prevent mold growth. If you plan to store pecans for more than a year, **freezing** is recommended. Pecans tolerate freezing well and can be stored at **0 F for up to two years and often longer** without loss of quality.

Storage life depends on both temperature and moisture. The following table provides a general guide.

How long pecans can be stored in-shell.

Storage Temperature	Approximate Storage Life
70 F (room temp)	3 months
50 F	6 months
32 F	12 months
0 F (freezer)	24 months or longer

Keep in mind that **pecans stored at room temperature** are more likely to develop off-flavors, especially in humid environments. If refrigeration or freezing isn’t available, store pecans in a **cool, dry and well-ventilated** area and use them within a few months.

When to Consider Refrigeration or Freezing

Refrigeration or freezing is especially helpful if:

- You plan to store pecans for **more than three to six months**
- You want to **preserve flavor and texture** for holiday baking or gift-giving

Use **airtight containers** or heavy-duty freezer bags to prevent moisture absorption and protect against odors. Pecans can absorb smells from onions, gasoline or musty storage areas, so keep them away from strong-smelling items. Label containers with the harvest date to help track freshness and rotate older stock first, especially when storing multiple batches.

6. Shelling Pecans at Home

When to Shell: Immediately Versus Just Before Use

Pecans can be stored either in-shell or shelled, but the timing of shelling affects quality and shelf life. In general:

- **Leave pecans in-shell** if you plan to store them for more than a few months. The shell acts as a natural barrier against moisture, oxygen and light.
- **Shell pecans shortly before use** for best flavor and texture, especially if storing at room temperature.
- If you plan to **freeze shelled pecans**, shelling in advance is fine — just ensure they are fully dried and stored in airtight containers.

Manual Shelling Tools and Tips

Home growers can shell pecans using:

- **Handheld nutcrackers** (lever or plier-style)
- **Tabletop shellers** for larger batches
- **Hammers or vises** (used carefully) for small quantities

To reduce kernel breakage, crack the shell gently at both ends and avoid crushing the middle. Some cultivars shell more easily than others. Thin-shelled varieties are often easier to work with. For best results, shell pecans after they've cured for at least 10 to 14 days. This allows the shell to separate more cleanly from the kernel and improves flavor.

— **TIP: Conditioning Pecans Before Shelling.** To make shelling easier and reduce kernel breakage, you can **condition** in-shell pecans by allowing them to absorb a small amount of moisture before cracking.

For small batches:

- Place pecans in a **sealed container** with a **damp (not wet) paper towel**.
- Let them sit at **room temperature for 24 to 48 hours**.
- **Shell immediately** after conditioning. Do not return conditioned nuts to storage.

For large batches (e.g., 50 pounds or more):

- **Divide into smaller batches** (5 to 10 pounds each).
- Place each batch in a sealed container (like a cooler or plastic bin).
- Add **one or two damp paper towels**, or place the towels in an open jar inside the container to avoid direct contact.
- Let sit for **24 to 48 hours**, then shell promptly.
- **Do not condition more than you can shell within a day or two.**

Important: Never return conditioned nuts to storage. Moisture introduced during conditioning can lead to mold, darkened kernels or off-flavors if nuts are not shelled and used promptly.



A lever-style tabletop sheller is designed for cracking pecans with minimal kernel breakage. After curing for 10 to 14 days, nuts shell more easily and produce cleaner halves. Use gentle pressure at both ends of the nut to avoid crushing the center.

Photo by William Reid

7. Understanding Basic Grading for Home Use

After shelling your pecans, it's helpful to evaluate the quality of the kernels. While commercial growers follow U.S. Department of Agriculture grading standards, home growers can use a simplified approach to sort out poor-quality nuts and better understand what went right — or wrong — during the growing season.

Estimating Percent Shell-out

One of the most useful measures of pecan quality is **percent shell-out** — the percentage of the nut's weight that is edible kernel. To estimate it:

1. Weigh a sample of in-shell pecans (e.g., 1 pound).
2. Crack and remove the edible kernels.
3. Weigh the kernels and divide by the original weight.
4. Multiply by 100 to get the shell-out percentage.

A shell-out of **45% to 55%** is typical for well-filled nuts. Lower percentages may indicate poor kernel fill due to drought, overbearing or nutrient deficiencies.

Visual Grading: What to Look For

As you sort through your shelled pecans, look for these signs of quality:

- **High-quality kernels** are full, plump and light golden in color.
- **Shriveled or wafer-like kernels** often result from drought stress or overbearing. These are still edible but have lower value and shorter shelf life.
- **Darkened or black kernels** may indicate serious defects and should be discarded.

Common Kernel Defects and What They Mean

Some kernel problems are easy to spot and can tell you a lot about what happened during the growing season:

- **Black kernel malady:** The entire kernel turns black or dark brown, often with no visible mold or external shell damage. This is a physiological disorder, possibly linked to boron deficiency, drought stress or genetic susceptibility. These kernels are **not edible** and should be discarded.
- **Stink bug damage:** Small dark spots or sunken areas on the kernel surface are signs of insect feeding. A few minor spots may not affect flavor, but heavily damaged kernels are often bitter and should be discarded.
- **Drought shriveling:** Kernels that are dry, lightweight and poorly filled often result from water stress during the nut-fill period. These are edible but have lower shell-out and may not store well.
- **Overbearing:** Trees that set too many nuts without adequate thinning or nutrition may produce thin, underdeveloped kernels. These are usually edible but indicate the tree was overtaxed.
- **Mold or rancidity:** Kernels with visible mold, off-odors or a greasy feel should be discarded. These issues are usually caused by delayed harvest, rewetting or poor storage conditions.

If you notice widespread defects, it may be worth reviewing your irrigation, fertility and pest management practices or submitting a leaf sample for nutrient analysis next season.

Use the following table as a guide to spot common defects and determine when to discard nuts.

When to sort out moldy, dark or damaged nuts.

Defect	Description	Cause	Edibility
Mold	White, gray or fuzzy growth on kernel	Moisture during or after harvest	Not edible
Black kernel malady	Entire kernel turns black, often with no external shell damage	Likely boron deficiency during rapid fruit growth	Not edible
Stink bug damage	Small dark spots or sunken areas on kernel	Feeding injury from stink bugs or other piercing insects	May be edible if minor, but often bitter
Drought stress	Shriveled, lightweight kernels	Lack of water during kernel fill	Edible but poor quality
Overbearing	Thin, poorly developed kernels	Excessive crop load without adequate thinning or nutrition	Edible but low shell-out
Rancidity	Off-flavor, greasy feel	Long-term storage at warm temps or high humidity	Not edible

For more information on pecan care and orchard management, see other titles in the From Soil to Shell: Louisiana Pecan Series and the Louisiana Home Orchard: Pecans publication available through the LSU AgCenter.

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