



Integrated Pest Management for Home Pecan Orchards

Overview

Growing pecans in a home orchard setting comes with unique challenges but also unique opportunities. Unlike commercial growers, homeowners can prioritize tree health, aesthetics and long-term sustainability over maximum yield. Integrated pest management (IPM) is a practical, flexible approach that helps you meet those goals by combining prevention, observation and selective intervention.

IPM isn't about spraying more or less. It's about making informed decisions. It starts with choosing the right cultivars and planting sites, continues with regular monitoring for pests and diseases, and ends with targeted action only when needed. By using cultural, biological and chemical tools together, IPM helps you protect your trees, reduce unnecessary inputs and support beneficial organisms in your landscape.

This publication will walk you through the core principles of IPM, show you how to scout effectively, and help you build a seasonal plan that fits your orchard's size, age and goals.

This publication will cover:

1. **Core Principles of IPM for Pecans:** IPM relies on prevention, careful monitoring, and a mix of control strategies. Cultivar selection, orchard layout and airflow reduce disease risk. Decisions are guided by thresholds, and tools include cultural, mechanical, biological and chemical options. Resistance management ensures long-term effectiveness.
2. **Planning for Success:** IPM Starts Before You Plant: Success begins with scab-resistant cultivars, wide spacing for airflow and avoiding pest-prone sites like patios or wooded edges. Consider equipment limitations early to avoid future challenges.
3. **Monitoring and Decision-Making in Home Orchards:** Visual scouting helps identify pests and diseases. Understanding seasonal cycles and phenology (e.g., budbreak, nut fill) informs when to act and when to tolerate minor issues. Traps and thresholds support informed decisions.
4. **Cultural and Mechanical Controls:** Sanitation (removing fallen debris), pruning for light and airflow, and managing groundcover to reduce pest habitat. Physical barriers like trunk bands help control specific pests such as weevils.
5. **Supporting Natural Enemies:** Encourage beneficial insects by avoiding broad-spectrum insecticides and planting diverse groundcovers like clover and wildflowers. These allies help maintain natural pest control.
6. **Chemical Controls in an IPM Context:** Use chemicals only when justified. Choose homeowner-accessible products, rotate modes of action (FRAC/IRAC) and consider limitations like sprayer reach and tree height. Soil-applied options may be useful when foliar coverage is difficult.
7. **IPM Tools by Tree Age:** Young trees benefit from trunk sprays, soil drenches and early scouting. Mature trees rely more on prevention and cultural practices. For large trees, professional applicators may be needed.

8. **Building a Year-Round IPM Calendar:** Create a seasonal checklist of pests, diseases and actions. Align IPM tasks with pruning, fertilization and other orchard maintenance to streamline care.
9. **Troubleshooting and Adjusting Your IPM Plan:** Persistent problems may require reassessing cultivar choice, airflow or nutrient stress. Be ready to revise your strategy based on changing conditions or new observations.

1. Core Principles of IPM for Pecans

Integrated pest management (IPM) is built on a foundation of prevention, observation and informed action. For home pecan growers, it offers a practical way to manage pests and diseases without relying on routine spraying. These core principles guide how and when to act.

Prevention

The most effective pest and disease control starts before problems appear. In pecans, prevention includes:

- **Choosing resistant cultivars** to reduce scab and insect pressure
- **Planting in well-drained, sunny locations** with good airflow
- **Using wide spacing and pruning** to reduce canopy humidity
- **Practicing sanitation**, such as removing fallen nuts, leaves and infested twigs

Monitoring

Regular observation helps you catch problems early, before they cause serious damage. This can include:

- **Inspect trees regularly** for signs of pests, diseases or stress.
- **Use simple tools** like limb shaking, visual inspections and traps.
- **Track seasonal patterns** to know when certain pests are most active.

Thresholds

Not every pest or disease requires action. IPM encourages you to:

- **Tolerate minor damage** when it won't affect long-term tree health or yield
- **Act only when pest pressure exceeds a practical threshold**, such as widespread defoliation or nut loss
- **Prioritize intervention** for young trees or high-value cultivars

Integrated Control

When action is needed, IPM combines multiple strategies including:

- **Cultural controls:** Pruning, sanitation, spacing and cultivar choice
- **Biological controls:** Encouraging beneficial insects like lady beetles and lacewings
- **Chemical controls:** Using homeowner-accessible products only when necessary, and rotating modes of action to prevent resistance

2. Planning for Success: IPM Starts Before You Plant

The most effective pest and disease management decisions often happen before a tree ever goes in the ground. In home orchards, where spraying is limited and equipment access is minimal, **prevention through smart planning** is the foundation of integrated pest management. Cultivar choice, site layout and spacing all influence how much pressure your trees will face and how much intervention they'll need later.

Choose Scab-Resistant Cultivars

Pecan scab is the most serious disease threat in Louisiana, and once trees are too tall to spray, resistance becomes your best defense. Cultivars like Elliott, Kanza, Amling, Lakota and Woodman have shown strong resistance under Louisiana conditions and are well-suited to low-input home orchards. Avoid highly susceptible cultivars unless you have the equipment and time to manage them intensively.

— **TIP:** Even resistant cultivars can show some symptoms in wet years, but they typically maintain foliage and produce usable nuts without spraying.

Space Trees for Airflow and Long-Term Health

Tight spacing increases humidity and reduces airflow, both of which favor scab and other fungal diseases. While commercial orchards often plant at 40-by-40 feet to maximize early yield, this leads to crowding and disease pressure within 15 to 20 years. In home settings, wider spacing is better.

- **Recommended spacing:** 50-by-50 feet or 60-by-60 feet
- **Benefits:** Better airflow, easier maintenance, reduced disease pressure and no need for future thinning

Avoid Pest-Prone Planting Sites

Some locations are more likely to attract pests or create conditions that favor disease. Avoid planting trees:

- Near patios, driveways or roofs where aphid honeydew and sooty mold can cause mess and damage
- In low-lying areas where moisture lingers and airflow is poor
- Along wooded edges or brushy fencerows where squirrels, raccoons and deer are more active

If you're planting near existing trees or structures, consider how shade, wind and wildlife access will change as the tree matures.

Plan for Equipment Limitations

Most homeowners don't have access to air-blast sprayers or tall ladders. That means:

- Spraying tall trees is rarely practical.
- Harvesting may rely on natural nut drop.
- Pruning and sanitation must be manageable from the ground.

Choose cultivars with strong natural resistance and manageable growth habits. Leave room for future access with mowers, carts or small sprayers, even if you don't plan to use them now.

3. Monitoring and Decision-Making in Home Orchards

Integrated pest management isn't just about what to spray or when to prune. It's about knowing what's happening in your orchard and making informed decisions based on what you see. In home settings, where time and tools are limited, **regular observation** is one of the most powerful tools you have.

You don't need to scout like a commercial grower. But walking your orchard every few weeks — and knowing what to look for — can help you catch problems early, avoid unnecessary treatments and protect your trees more effectively over time.

What to Look For and When

You don't need to identify every insect or disease to be an effective orchard observer. What matters most is learning to recognize when something looks off and knowing which signs are worth acting on. Here are some examples of what to watch for during a typical growing season:

Early spring (budbreak to leaf expansion):

- Look for distorted or blistered leaves that may signal phylloxera galls.
- Check for signs of shoot dieback or delayed budbreak, especially on older trees.

Late spring to early summer (nut set to early sizing):

- Inspect young nuts for signs of casebearer damage — frass or silk at the base of nutlets.
- Watch for early signs of scab on leaves or young shucks, especially in the lower canopy.
- Check for aphids or honeydew buildup on the undersides of leaves.

Mid- to late summer (kernel fill to shuck split):

- Monitor for yellow or black aphids, especially during dry spells.
- Look for signs of nut drop or stick-tights that may indicate weevil or shuckworm activity.
- Check for leaf scorch, bronzing or early defoliation that could signal mites, nutrient stress or disease.

Fall (harvest and leaf drop):

- Note how well shucks open and whether nuts are well-filled.
- Observe leaf retention and color. Early drop may suggest stress or disease carryover.
- Look for galls, dieback or other signs that may guide winter pruning decisions.

How to Interpret What You See

Not every blemish or bug means you need to act. In home orchards, the goal isn't to eliminate every pest. It's to keep your trees healthy and productive with the least amount of intervention. That means learning to distinguish between:

- **Normal variation** versus signs of stress
- **Cosmetic issues** versus yield-impacting problems
- **One-time events** versus patterns that repeat year after year

Here are some practical guidelines to help you decide when to take action:

- **Is the issue widespread or isolated?** A few curled leaves or a single webworm nest usually isn't cause for concern. But if you see the same problem across multiple trees or branches, it may be time to investigate further.
- **Is the tree otherwise healthy?** A vigorous tree with good leaf color and strong shoot growth can often tolerate minor pest or disease pressure. Weak or stressed trees are more vulnerable and may need more support.
- **Is the damage increasing over time?** Some issues, like early-season aphids or minor leaf spots, may come and go without intervention. Others, like weevils or black aphids, can escalate quickly and affect nut quality or defoliation if left unchecked.
- **Is the timing critical?** Certain pests and diseases only cause damage during specific windows. For example, pecan weevils must be controlled before they lay eggs in the nuts. If you miss that window, spraying later won't help.
- **Can you realistically treat it?** If the tree is too tall to spray or the infestation is minor, it may be better to focus on long-term strategies like pruning, cultivar choice or sanitation rather than trying to intervene midseason.

When to treat versus when to tolerate: A home orchard decision guide.

Situation	Recommended Action	Why?	Feasibility for Homeowners
Walnut caterpillars beginning to cluster or defoliate	Treat early if clusters appear	Populations can explode quickly and cause full defoliation	Feasible with Bt or spinosad on small trees; prune clusters if reachable
Pecan weevil emergence in a bearing tree	Treat if nuts are at risk	Can destroy the crop; timing is critical	Feasible with trunk bands or ground sprays on small trees
Heavy aphid infestation on a young tree	Treat if leaf drop begins	Young trees are more vulnerable to defoliation	Feasible on small trees with hose-end or pump sprayer
Yellow aphids flaring after insecticide use	Treat if leaf drop or mold worsens	May require follow-up with selective insecticide	Feasible on small trees; limited options for large trees
Shuckworm damage increasing year to year	Treat if damage exceeds 10%-15%	Can reduce yield and nut quality	Only feasible on small trees; timing is difficult
Fall webworms defoliating large portions of canopy	Treat if widespread	Repeated defoliation can reduce nut fill and return bloom	Feasible if webs are reachable; otherwise limited
Powdery mildew on leaves in late summer	Tolerate	Usually cosmetic; rarely affects yield	Treatment not needed
Leaf scorch or dieback on one limb	Monitor or prune affected area	May be bacterial or environmental; no chemical control available	Pruning feasible; no chemical options

Tools and Techniques for Monitoring

You don’t need a lab or a sprayer to monitor your pecan trees effectively. A few simple tools and a habit of walking your orchard regularly can go a long way. Here are some practical techniques that work well in home settings:

- **Visual scouting:** The most important tool is your own observation. Walk your orchard every two to three weeks during the growing season. Look for changes in leaf color, nut development, insect activity or signs of stress. A pocket notebook or phone camera can help you track what you see over time.
- **Limb shaking and sheet sampling:** To check for pests like stink bugs or weevils, place a light-colored sheet or tarp under a branch and give it a firm shake. Insects that are hard to spot visually will often fall onto the sheet, making them easier to identify.
- **Cone traps for pecan weevils:** Cone traps placed around the base of trees in late summer can help detect pecan weevil emergence. These traps are especially useful in areas with a history of weevil damage and can guide whether treatment is needed.
- **Sticky cards or tape:** Yellow sticky cards can help detect flying aphids or other small insects. While not essential, they can be useful for confirming pest presence in hard-to-reach canopies.
- **Phenology-based timing:** Many pests and diseases follow predictable patterns tied to tree development. For example:
 - **Phylloxera** damage appears shortly after budbreak.
 - **Casebearer** larvae target nuts just after pollination.
 - **Weevils** emerge around shuck sizing and kernel fill. Learning to link pest activity to tree stages helps you scout more efficiently and time any needed treatments more effectively.
- **Nut and leaf sampling:** Collecting a few nuts or leaves for closer inspection can help diagnose issues like scab, kernel fill problems or nutrient deficiencies. If you’re unsure, your local extension office can help with identification.

Seasonal monitoring guide for key pecan pests and diseases.

Pest or Disease	What to Watch For	When to Monitor	Notes
Pecan scab	Leaf and shuck lesions	Budbreak through August	Most severe in wet years; check lower canopy.
Pecan weevil	Adult emergence, nut drop	Late July through August	Use trunk bands or cone traps.
Aphids (yellow/black)	Sticky leaves, sooty mold	Midsummer through fall	Often flares after insecticide use.
Walnut caterpillar	Defoliation, molting clusters on trunks	June through August	Look for fuzzy gray skins on bark.
Fall webworm	Webs at branch tips	July through September	Prune out small infestations.
Hickory shuckworm	Shucks that fail to open	August through harvest	Damage is often mistaken for drought or scab.

Pest or Disease	What to Watch For	When to Monitor	Notes
Powdery mildew	White powder on leaves or shucks	Late spring through summer	Usually is cosmetic in home orchards.
Bacterial leaf scorch	Leaf margin browning, branch dieback	Mid- to late summer	No cure; prune out infected limbs.
Twig girdler/pruner	Clean-cut twigs on ground	Late summer through fall	Collect and destroy fallen twigs.

4. Cultural and Mechanical Controls

In home orchards, cultural and mechanical practices are often the most practical and effective tools for managing pests and diseases. These strategies don't rely on sprays or specialized equipment. Instead, they focus on shaping the orchard environment to reduce pressure and support tree health over time.

Choose Resistant Cultivars

The single most important cultural decision is what you plant. Cultivars like Elliott, Kanza, Amling and Lakota have strong resistance to pecan scab and other diseases, making them far easier to manage without spraying. Avoid highly susceptible varieties like Desirable unless you have the equipment and time to maintain a full spray program.

Space Trees for Airflow

Tight spacing increases humidity and reduces airflow, both of which favor scab and other fungal diseases. In home settings, wider spacing (50-by-50 feet or more) helps reduce disease pressure, improves light penetration and makes mowing and harvest easier.

Prune to Open the Canopy

As trees mature, dense canopies can trap moisture and shade lower limbs. Periodic thinning of interior branches improves airflow, reduces scab risk and helps sunlight reach developing nuts. Pruning also makes it easier to monitor for pests and apply treatments if needed.

Remove Fallen Debris

Many pests and diseases overwinter in fallen leaves, shucks or nuts. Raking and removing this material in winter can reduce the amount of inoculum or pest pressure the following spring. This is especially helpful for managing scab, shuckworm and weevil.

Use Physical Barriers When Practical

For young trees, simple barriers can help prevent pest damage:

- **Trunk bands** or **sticky wraps** can intercept crawling insects like pecan weevils.
- **Tree tubes** or **guards** protect against deer browsing and rodent damage.
- **White latex paint** on the lower trunk can reduce sunscald and discourage borers.

Manage Groundcover and Weeds

Tall grass and unmanaged groundcover can harbor pests and reduce airflow. Keep the orchard floor mowed and consider using low-growing legumes like clover to suppress weeds while improving soil health.

5. Supporting Natural Enemies

Not every insect in your orchard is a threat. Many are allies — feeding on aphids, caterpillars, mites and other pests that can damage your trees. These beneficial insects, often called **natural enemies**, are a cornerstone of integrated pest management. Supporting them can reduce the need for spraying and help keep pest populations in check naturally.

Why They Matter in Home Orchards

In commercial orchards, natural enemies are often disrupted by frequent spraying. But in home settings — where sprays are limited or avoided — these beneficials can thrive and provide meaningful control. Encouraging their presence is one of the most effective long-term strategies for reducing pest pressure without chemicals.

Key Beneficial Insects in Louisiana Pecan Orchards

Lady Beetles (*Coccinellidae*)

- **What they do:** Feed on aphids, scale insects and mites
- **When to look for them:** Spring through fall
- **Where to find them:** On leaves, especially near aphid colonies
- **How to support them:** Avoid broad-spectrum insecticides; maintain flowering groundcovers

Green Lacewings (*Chrysopidae*)

- **What they do:** Larvae feed on aphids, mites and small caterpillars
- **When to look for them:** Late spring through summer
- **Where to find them:** Larvae on leaves; adults near lights at night
- **How to support them:** Avoid insecticides during larval stages; provide flowering plants for adults

Parasitic Wasps

- **What they do:** Lay eggs inside aphids, caterpillars or scale insects
- **When to look for them:** Spring through fall
- **Where to find them:** Often unnoticed; look for mummified aphids or reduced pest populations
- **How to support them:** Avoid insecticides with high residual toxicity; maintain habitat diversity

Predatory Mites

- **What they do:** Feed on pest mites and small insects
- **When to look for them:** Summer, especially during dry spells
- **Where to find them:** On the undersides of leaves
- **How to support them:** Avoid miticides and pyrethroids; maintain groundcover and humidity

Ground Beetles (*Carabidae*)

- **What they do:** Feed on caterpillars, pecan weevil larvae, slugs and other soft-bodied pests
- **When to look for them:** Spring through fall
- **Where to find them:** Under mulch, leaf litter or stones; active at night
- **How to support them:** Avoid tilling; maintain mulch or leaf litter; minimize insecticide use

Hoverflies (*Syrphidae*)

- **What they do:** Larvae feed on aphids
- **When to look for them:** Spring through summer
- **Where to find them:** Adults hover near flowers; larvae on leaves near aphid colonies
- **How to support them:** Plant flowering herbs or clover; avoid insecticides during bloom

Spiders and Assassin Bugs

- **What they do:** Generalist predators of many orchard pests
- **When to look for them:** Year-round in mild climates
- **Where to find them:** On bark, leaves and in groundcover
- **How to support them:** Minimize disturbance; avoid unnecessary spraying

Practices That Support Beneficial Insects

Avoid Broad-Spectrum Insecticides

Products like carbaryl, malathion, and pyrethroids (e.g., bifenthrin) can kill both pests and beneficials. Use selective products like Bt or spinosad when needed, and spray only when necessary.

Provide Habitat

Homeowners can encourage beneficial insects by providing habitat for them. To do this, you can:

- Maintain clover or other low-growing legumes under trees.
- Avoid mowing flowering groundcovers during bloom.
- Leave some wildflowers or native plants in non-crop areas.
- Minimize tillage that disrupts ground-dwelling predators.

Let the Orchard Find Its Balance

Many pest outbreaks are short-lived and naturally decline as predators catch up. Tolerating low levels of pests can help preserve beneficial populations and reduce the need for intervention.

Encouraging beneficial insects in home orchards.

Beneficial Insect	Helps Control	When Active	Support Strategies
Lady beetles	Aphids, scale insects	Spring through fall	Avoid broad-spectrum insecticides; plant clover or wildflowers nearby.
Lacewing larvae	Aphids, mites, small caterpillars	Spring through summer	Maintain flowering groundcovers; reduce mowing during bloom.
Parasitic wasps	Caterpillars, aphids, scale insects	Spring through fall	Provide nectar sources (e.g., clover, yarrow); avoid insecticide drift.
Spiders	General pest suppression	Year-round	Maintain mulch and groundcover; avoid disturbing webs.
Predatory mites	Pest mites	Spring through fall	Avoid miticides; maintain diverse vegetation.
Ground beetles	Caterpillars, weevil larvae	Spring through fall	Leave leaf litter or mulch; avoid tilling under trees.
Hoverfly larvae	Aphids	Spring through summer	Plant flowering herbs or clover; avoid insecticides during bloom.

6. Chemical Controls in an IPM Context

In home orchards, chemical control is just one tool among many and often a last resort. Integrated pest management emphasizes using sprays only when needed and only when they can be applied effectively. For homeowners, that means choosing the right product, applying it at the right time and understanding its limitations.

When Chemical Control Makes Sense

Chemical treatments may be appropriate when:

- A pest or disease is likely to cause significant damage
- Cultural and biological controls aren't enough
- The tree is small enough to spray effectively
- The timing aligns with a vulnerable stage in the pest's life cycle

In many home orchards, spraying is most practical during the first 10 to 15 years, while trees are still small. After that, canopy height often limits what can be treated without specialized equipment.

Choosing the Right Product

Homeowners should look for:

- **Labeled products** for pecans or fruit/nut trees
- **Active ingredients**, not just brand names
- **Low-toxicity options** when available (e.g., Bt, spinosad, horticultural oils)
- **FRAC or IRAC group numbers** to rotate modes of action and reduce resistance risk

Avoid restricted-use pesticides and broad-spectrum insecticides unless absolutely necessary. These can harm beneficial insects and disrupt natural pest control.

Application Tips for Home Settings

Several tips include:

Spray early in the day or late in the evening to protect pollinators.

- **Use a backpack, pump, or hose-end sprayer** for trees under 15 to 20 feet tall.
- **Target the lower canopy** if the full tree can't be reached. Some protection is better than none
- **Follow label directions** exactly, including preharvest intervals and reentry times.
- **Rotate chemical classes** to avoid resistance (e.g., don't use the same FRAC or IRAC group repeatedly).

Limitations to Keep in Mind

When using chemical controls, always consider:

- **Coverage is critical:** Fungicides and insecticides must coat the target surface to work. Incomplete coverage = reduced effectiveness.
- **Timing matters:** Most products are preventive, not curative. Spraying after damage is visible may be too late.
- **Height is a barrier:** Once trees exceed 20 feet, most homeowners can't spray effectively without professional help.
- **Sprays are not a substitute for good planning:** Cultivar choice, spacing, pruning and monitoring all reduce the need for chemical control.

7. IPM Tools by Tree Age

Integrated pest management isn't one-size-fits-all. The tools and strategies that work for a young pecan tree may not be practical — or necessary — for a mature one. This section outlines how IPM approaches shift as trees grow, helping homeowners match their efforts to the tree's size, age and management needs.

Young Trees (Years 1 to 10)

Young trees are easier to monitor, prune, and spray. This is the best window for proactive IPM.

Key IPM tools:

- **Visual scouting:** Easy to inspect all parts of the canopy
- **Targeted sprays:** Hose-end or backpack sprayers can reach the full canopy
- **Trunk guards and wraps:** Protect against borers, rodents and sunscald
- **Soil-applied insecticides:** Useful for pests like phylloxera or aphids
- **Sanitation:** Easy to rake and remove fallen nuts or leaves
- **Pruning:** Can shape canopy for long-term airflow and pest resistance

Common IPM priorities:

- Preventing early defoliation from aphids or mites
- Managing phylloxera and casebearer in early years
- Training structure to reduce long-term scab risk

Maturing Trees (Years 10 to 20)

As trees grow taller, some tools become harder to use, but cultural practices and monitoring remain essential.

Key IPM Tools:

- **Pruning for airflow:** Focus on thinning interior branches
- **Ground-level scouting:** Monitor for nut drop, aphid honeydew or leaf scorch
- **Cone traps:** Useful for detecting pecan weevil emergence
- **Spot spraying:** Lower canopy can still be treated if needed
- **Sanitation:** Continue removing fallen nuts and shucks

Common IPM Priorities:

- Managing scab through spacing, airflow and cultivar resistance
- Monitoring for weevils, shuckworm and aphids
- Supporting beneficial insects to reduce flare-ups

Mature Trees (20+ Years)

Once trees exceed 30 to 40 feet, spraying becomes impractical for most homeowners. IPM shifts toward prevention and long-term resilience.

Key IPM tools:

- **Resistant cultivars:** The foundation of low-input management
- **Canopy management:** Occasional pruning to maintain airflow
- **Ground-level monitoring:** Watch for nut drop, stick-tights or defoliation
- **Beneficial insect support:** Avoid disrupting natural enemies
- **Sanitation and habitat management:** Reduce overwintering sites for pests

Common IPM priorities:

- Minimizing scab and aphid pressure through airflow and cultivar choice
- Supporting tree health to tolerate minor pest damage
- Recognizing when professional help may be needed (e.g., for weevil outbreaks)

Quick reference: IPM tools by tree age.

Tree Age	Practical IPM Tools	Notes
Years 1-10	Visual scouting, pruning, targeted sprays, trunk guards, sanitation	This is the best window for proactive management.
Years 10-20	Pruning, cone traps, ground-level scouting, spot spraying	Spraying becomes harder; focus shifts to monitoring and airflow.
20+ Years	Monitoring, sanitation, supporting beneficials, occasional pruning	Spraying is impractical; rely on cultivar resistance and cultural practices.

IPM strategy guide by tree age.

IPM Tool or Strategy	Establishment (Years 1-5)	Transition (Years 6-10)	Mature Trees (10+ Years)
Cultivar selection	Critical	Already chosen	Already chosen
Site layout and spacing	Critical	Fixed	Fixed
Sanitation (nuts, leaves, shucks)	Easy and effective	Still helpful	Harder with tree size
Pruning for airflow	Easy to do	Maintain structure	May require professional help
Visual monitoring	Start habit early	Continue regularly	Essential for decision-making
Traps and phenology cues	Optional	Useful for key pests	Important for timing sprays
Physical barriers (e.g., trunk bands)	Effective for weevils	Still useful	Less practical on large trees
Encouraging beneficial insects	Start with clover, habitat	Maintain diversity	Maintain diversity
Chemical control (if needed)	Feasible with small trees	May require equipment	Often impractical

8. Building a Year-Round IPM Calendar

Pecan pests and diseases don't appear all at once. They follow seasonal patterns tied to tree growth and weather. A good IPM calendar helps you anticipate problems, time your scouting, and apply treatments, if needed, when they'll be most effective. For home growers, this means combining **visual observation**, **phenology cues** and **simple seasonal tasks** into a practical rhythm.

Spring (March to May)

Tree stage: Budbreak → Leaf expansion → Nut set

Key IPM tasks:

- Begin visual scouting for phylloxera galls, aphids and early scab lesions.
- Prune to improve airflow and remove overwintered debris.
- Apply dormant oil or early-season sprays if needed (e.g., for phylloxera).
- Watch for casebearer damage at nutlet stage (late May).

Phenology cues:

- Budbreak signals the start of pest activity.
- Nutlet formation marks the window for casebearer scouting.

Early Summer (June to July)

Tree stage: Nut sizing → Kernel fill begins

Key IPM tasks:

- Monitor for aphids, mites and early nut drop.
- Watch for signs of scab on leaves and shucks.
- Support beneficial insects by avoiding unnecessary sprays.
- Begin cone trap monitoring for pecan weevils (late July).

Phenology cues:

- Nut sizing and shell hardening signal weevil emergence.
- Leaf scorch or bronzing may indicate mite or aphid pressure.

Late Summer (August to September)

Tree stage: Kernel fill → Shuck split

Key IPM tasks:

- Continue scouting for aphids, mites and weevils.

- Apply targeted sprays if needed (e.g., for weevils or shuckworm).
- Maintain irrigation and tree health to reduce stress-related defoliation.
- Collect leaf samples for foliar nutrient analysis (late July to early August).

Phenology cues:

- Shuck sizing and kernel fill are critical for nut quality.
- Nut drop or stick-tights may indicate pest or disease pressure.

Fall (October to November)

Tree stage: Harvest → Leaf drop

Key IPM tasks:

- Observe nut quality and shuck opening.
- Note any late-season defoliation or disease symptoms.
- Rake and remove fallen leaves, shucks and nuts to reduce overwintering pests.
- Plan winter pruning based on canopy density and pest history.

Phenology cues:

- Shuck split and nut drop mark the end of the growing season.
- Early leaf drop may signal stress or disease carryover.

Winter (December to February)

Tree stage: Dormant

Key IPM tasks:

- Prune to improve structure and airflow.
- Remove galls, dead wood and infested limbs.
- Apply dormant oil if needed for overwintering pests.
- Review notes and plan cultivar replacements or spacing adjustments.

Phenology cues:

- None — this is the time to prepare for next season.

Seasonal IPM calendar for home pecan orchards.

Season	Tree Stage	Key IPM Tasks	Phenology Cues
Spring (March to May)	Budbreak ↓ leaf expansion ↓ nut set	- Scout for phylloxera galls, aphids and early scab lesions. - Prune for airflow and remove overwintered debris. - Apply dormant oil or early-season sprays if needed. - Watch for casebearer damage at nutlet stage (late May).	- Budbreak signals start of pest activity. - Nutlet formation marks casebearer scouting window.
Early summer (June to July)	Nut sizing ↓ kernel fill begins	- Monitor for aphids, mites and early nut drop. - Scout for scab on leaves and shucks. - Avoid unnecessary sprays to protect beneficials. - Begin cone trap monitoring for pecan weevils (late July).	- Nut sizing and shell hardening signal weevil emergence. - Leaf scorch or bronzing may indicate mite or aphid pressure.
Late summer (August to September)	Kernel fill ↓ shuck split	- Continue scouting for aphids, mites and weevils. - Apply targeted sprays if needed (weevils, shuckworm). - Maintain irrigation to reduce stress-related defoliation. - Collect leaf samples for foliar nutrient analysis.	- Shuck sizing and kernel fill are critical for nut quality. - Nut drop or stick-tights may indicate pest or disease pressure.
Fall (October to November)	Harvest ↓ leaf drop	- Observe nut quality and shuck opening. - Note late-season defoliation or disease symptoms. - Rake and remove fallen leaves, shucks and nuts. - Plan winter pruning based on canopy and pest history.	- Shuck split and nut drop mark end of growing season. - Early leaf drop may signal stress or disease carryover.
Winter (December to February)	Dormant	- Prune to improve structure and airflow. - Remove galls, dead wood and infested limbs. - Apply dormant oil if needed for overwintering pests. - Review notes and plan cultivar or spacing adjustments.	None — this is the time to prepare for next season.

9. Troubleshooting and Adjusting Your IPM Plan

Even with the best planning, things don't always go as expected. Pest pressure may spike in a wet year, a new disease may show up or a tree may begin to decline despite your efforts. Integrated pest management is meant to be flexible and designed to help you adapt based on what your orchard is telling you.

Watch for Warning Signs

Some of the most common indicators that your IPM plan needs adjustment include:

- **Unexpected defoliation** in mid- to late summer
- **Stick-tights** or poor shuck opening at harvest
- **Shriveled or blackened kernels**
- **Recurring pest outbreaks** (e.g., aphids, mites, or weevils)
- **Leaf scorch or bronzing** despite good irrigation
- **Galls, dieback or poor shoot growth** on young trees

These symptoms may point to pest pressure, nutrient imbalance or environmental stress and often a combination of factors.

Use Foliar and Soil Testing to Confirm

Visual symptoms are helpful, but they don't always tell the full story. If you're seeing poor nut fill, early leaf drop or weak growth, a **midseason foliar test** or **winter soil test** can help identify hidden nutrient deficiencies or imbalances that may be contributing to the problem.

Revisit Your Cultivar and Spacing Choices

If you're consistently battling scab, aphids or other issues, it may be time to reconsider:

- Is the cultivar too susceptible for your region or spray capacity?
- Are trees too close together for good airflow?
- Would removing or replacing one tree improve the health of the others?

Sometimes, the best long-term fix is a structural one, especially in older or crowded plantings.

Adjust Based on Tree Age and Vigor

A tree that's struggling in its early years may need more support — extra watering, weed control or even temporary chemical protection. A mature tree, on the other hand, may be able to tolerate minor pest pressure without intervention. Let the tree's age and condition guide your response.

Keep Records and Look for Patterns

IPM works best when you track what you see. Keeping notes on pest sightings, spray dates, nut quality and leaf condition can help you spot trends over time. For example:

- Do aphids flare up after certain sprays?
- Does scab pressure increase after wet springs?
- Are certain cultivars consistently underperforming?

These patterns can guide smarter decisions in future seasons.

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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