

# FRUIT FREEDOM FORMULA

*A Practical Guide to Growing Abundant Fruit  
in Small Spaces*



Containers, balconies,  
4×4 plots, fence lines

Plants that produce for  
10 to 30+ years

No orchard needed —  
no acres required

Realistic yields, real food,  
zero hype



Strawberries



Blueberries



Grapes



Peaches



Apples



Citrus



Herbs

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"From your first strawberry to decades of abundance — a complete system for small-space food independence."

# TABLE OF CONTENTS

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Introduction: Why Fruit is the Missing Piece

Chapter 1: The Small-Space Fruit Growing Mindset

- 1.1 Forget Everything You Think You Know About Orchards
- 1.2 The Three Categories of Small-Space Fruit
- 1.3 Assessing Your Space for Fruit Production
- 1.4 The Long Game: Patience and Payoff

Chapter 2: Fastest Wins — Fruits That Produce in Year One

- 2.1 Strawberries: The Perfect Starter Fruit
- 2.2 Raspberries and Blackberries: The Bramble Bonanza
- 2.3 Blueberries: Nutrient Powerhouses
- 2.4 Grapes: The Overlooked Backyard Gem
- 2.5 Melons: Summer's Ultimate Reward

Chapter 3: Compact Fruit Trees — Your Backyard Orchard

- 3.1 Understanding Dwarf and Semi-Dwarf Trees
- 3.2 Apples: America's Favorite Fruit
- 3.3 Stone Fruits: Peaches, Plums, Cherries, and Apricots
- 3.4 Citrus: Not Just for Florida Anymore
- 3.5 Figs: The Easiest Fruit Tree You've Never Considered
- 3.6 Pears, Persimmons, and Other Options

Chapter 4: The Vertical Fruit Garden

- 4.1 Going Up: The Vertical Advantage
- 4.2 The Espalier Method: Flat-Trained Fruit Trees
- 4.3 Berry Towers and Vertical Planters
- 4.4 Arbors, Pergolas, and Overhead Growing

Chapter 5: Container Fruit Growing Mastery

- 5.1 The Container Fruit Revolution
- 5.2 Choosing the Right Containers
- 5.3 The Container Soil Recipe

- 5.4 Watering Container Fruit
- 5.5 Overwintering Container Fruit
- 5.6 Recommended Container Fruits (Ranked)

## Chapter 6: The Four-Season Fruit Calendar

- 6.1 Spring: The Season of Planting and Preparation
- 6.2 Summer: Growth, Maintenance, and Early Harvests
- 6.3 Fall: The Main Harvest and Winter Prep
- 6.4 Winter: Planning, Pruning, and Patience
- 6.5 The Master Calendar

## Chapter 7: Preservation — Storing Your Harvest

- 7.1 The Preservation Mindset
- 7.2 Freezing Fruit
- 7.3 Drying & Dehydrating
- 7.4 Canning Fruit
- 7.5 Fresh Storage

## Chapter 8: Troubleshooting Common Problems

- 8.1 "My Fruit Tree Isn't Producing"
- 8.2 Pest Management Without Chemicals
- 8.3 Disease Prevention and Treatment
- 8.4 Weather and Climate Challenges
- 8.5 Wildlife Problems

## Chapter 9: The Five-Year Fruit Freedom Plan

- 9.1 Year One: Quick Wins and Foundation
- 9.2 Year Two: Expansion and Learning
- 9.3 Year Three: Hitting Your Stride
- 9.4 Years Four and Five: Abundance
- 9.5 The Long-Term Vision: Fruit Independence for Life

## Chapter 10: Quick-Start Guide — Your First Fruit This Season

- 10.1 The 30-Day Fruit Freedom Kickstart
- 10.2 The Starter Shopping List
- 10.3 The "One of Each" Starter Garden
- 10.4 Your Next Steps

## Appendices: A–E Reference Charts & Templates

INTRODUCTION

# Why Fruit is the Missing Piece

## Balcony Fruit Garden: What's Actually Possible



Even a 60 sq ft balcony can yield 40–60 lbs of homegrown organic fruit by year 3.

You have already proven you can grow food. You have taken control of your vegetable production, turned limited space into productive ground, and experienced the satisfaction of eating what you have grown. That independence matters. But there is a gap in your system. Those strawberries at the grocery store traveled 1,500 miles and were picked four days ago while still white inside. The apples have been in cold storage since last fall — possibly for six to nine months. The peaches were harvested hard as rocks so they would survive shipping. Everything costs more every year, and most of it tastes like sweetened cardboard compared to what ripens on the plant.

## The "Set It and Forget It" Advantage of Perennial Fruit

Vegetables demand constant attention. You plant, weed, water, harvest, then start over. Every season is a new beginning. Fruit plants work differently. You plant a blueberry bush once, and it produces for twenty to thirty years. A dwarf apple tree keeps fruiting for fifteen to twenty-five years. Strawberry plants spread and multiply with no help from you. Raspberries produce reliably every summer for a decade or more.

This is the "set it and forget it" advantage — not marketing language but a real biological reality. Perennial fruit plants invest energy into root systems and permanent structure, then produce year after year from that same foundation.



## The Economics of Growing Your Own

Organic strawberries cost \$6 to \$8 per pound in most areas. A single strawberry plant costs \$3 to \$5 and produces 0.5 to 1 pound of berries per year for three to five years. Ten plants in a 4×4 raised bed will give you 10 to 20 pounds annually — that is \$60 to \$160 worth of organic berries from a \$30 to \$50 investment that keeps producing.

A dwarf apple tree costs \$30 to \$50. By year four, it produces 30 to 60 pounds of apples annually. When fruit prices jump 20% in a single year, your backyard does not care. Your plants keep producing.



Commercial fruit is bred for shipping durability and shelf life, not taste. Homegrown fruit ripens completely on the plant. Fruit develops its full sugar content, flavor complexity, and nutritional value in the final days on the vine. You pick it when it is ready — not when a harvest schedule demands.

CHAPTER 1

# The Small-Space Fruit Growing Mindset

## The Three Categories of Small-Space Fruit



The three categories of small-space fruit — every system should include at least one from each.

Growing fruit in limited space requires a different mental model than either traditional farming or intensive vegetable gardening. The outdated image of an orchard — rows of 25-foot trees on acres of land — has nothing to do with feeding a household today.

## Section 1.1 — Orchards Reimagined

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A standard apple tree on seedling rootstock can reach 25 to 30 feet tall and equally wide. It takes 6 to 8 years to produce significant fruit. It requires a ladder for pruning and harvest. It produces hundreds of pounds of apples in a short window — more than a family can eat, creating waste and attracting pests.



Fruit tree size is controlled by the rootstock — the root system onto which the fruiting variety is grafted. A dwarf rootstock limits the mature height of the tree. The same apple variety that grows 25 feet on standard rootstock stays 6 to 8 feet on dwarf rootstock. The fruit is identical. Only the tree size changes.

Columnar apple trees (varieties like Northpole and Scarlet Sentinel) grow straight up with minimal side branching, reaching 8 to 10 feet tall but only 2 feet wide. You can plant them 2 feet apart to create a narrow hedge of apples along a fence or property line.

## Section 1.2 — The Three Categories of Small-Space Fruit

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Mix all three categories for continuous harvests from May through October in most climates.

- Bush fruits (blueberries, currants, gooseberries): 3–6 ft shrubs, permanent woody structure, low maintenance. Space 3–5 feet apart in ground.
- Compact trees (apples, pears, peaches, figs, citrus on dwarf rootstock): Single trunk, 5–12 ft at maturity, 2–4 years to bearing. Space 6–10 feet apart.
- Climbing fruits (grapes, hardy kiwi, brambles): Grow on supports, most productive per square foot. One grape vine covers 80–100 sqft of overhead structure.



Sample 10×10 ft backyard fruit garden — six different fruit types, year-round production.

## Section 1.3 — Assessing Your Space

Before selecting any plant, audit your space for these factors:

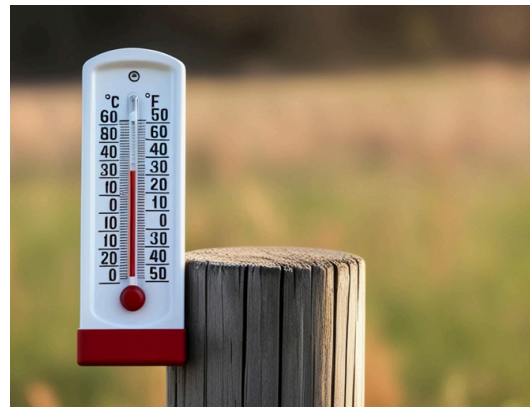
- Sun: Minimum 6 hours direct sunlight daily — non-negotiable. Less than 4 hours means fruit will not ripen properly.



- Drainage: Dig a 12-inch hole, fill with water, time drainage. Less than 4 hours is good. More than 12 hours means raised beds or containers.



- Chill hours: Hours below 45°F accumulated in winter. Match varieties to your local average. Search "chill hour calculator" plus your location.
- Microclimates: South-facing walls hold heat longer. Sheltered corners stay 5–10°F warmer. Use these for tender plants like figs and citrus.



A typical apartment balcony (6×10 feet) with good sun can support two blueberry containers, one dwarf citrus tree, one compact fig, and a small strawberry planter — producing 40 to 60 pounds of fruit per year at maturity

## Section 1.4 — The Long Game: Patience and Payoff

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The outdated advice says fruit trees take 7 to 10 years to produce. That applies to standard rootstock trees from a different era. Modern dwarf trees often produce small crops in year 2, meaningful harvests by year 3 to 4, and full production by year 5. Genetic dwarf peaches fruit in year 1 or 2. Figs produce in year 1 to 2.

### EXAMPLE: The Five-Year Perspective

Sarah plants a 12×12 corner (zone 6): 6 strawberries, 3 blueberry bushes, 1 dwarf apple, 4 raspberry canes. Total investment: \$138.

Year 1: ~8 lbs total. Year 2: ~15 lbs. Year 3: ~35 lbs. Year 4: ~55 lbs. Year 5: ~70 lbs.

That \$138 investment produces \$200–300 worth of organic fruit annually by year 5 — and continues at that level for another 10–20 years.

### COMMON MISTAKES — WATCH-OUTS

Assuming you need more space than you have. A 10×10 area supports a complete diverse fruit system.

Buying standard rootstock trees because they are cheaper. A \$25 standard tree that reaches 25 feet is useless in small spaces.

Planting everything at once. Start with 3–5 plants. Learn them. Expand next year.

Ignoring chill hours. Always verify variety requirements before purchasing.

## CHAPTER 2

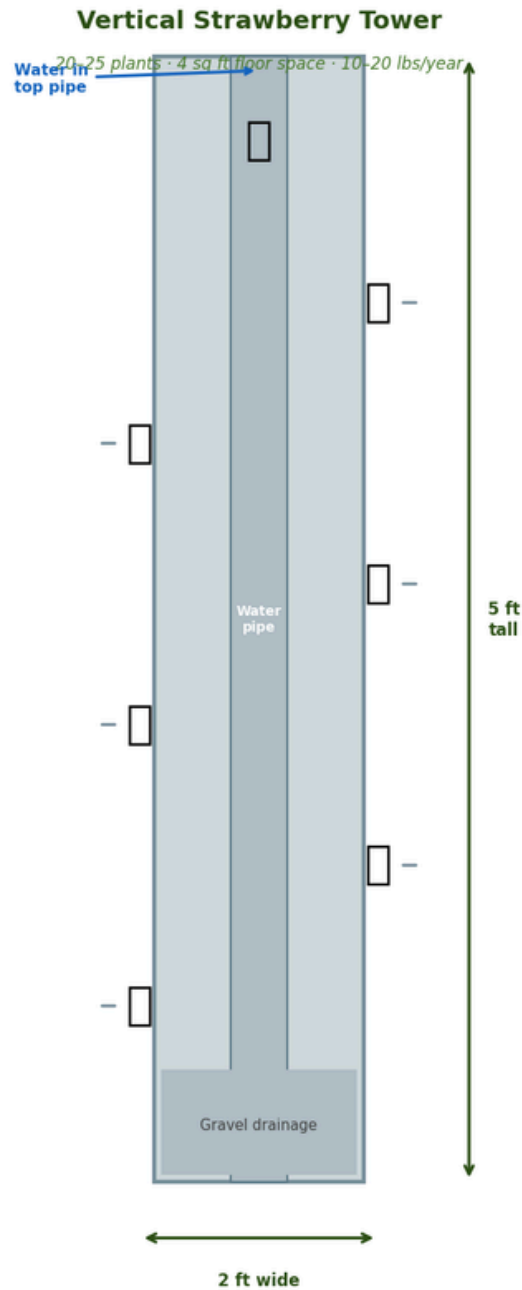
# Fastest Wins — Year One Fruits

Starting with fruits that produce quickly builds confidence and skills. This chapter covers plants that give you harvests within months of planting.



## Section 2.1 — Strawberries: The Perfect Starter Fruit

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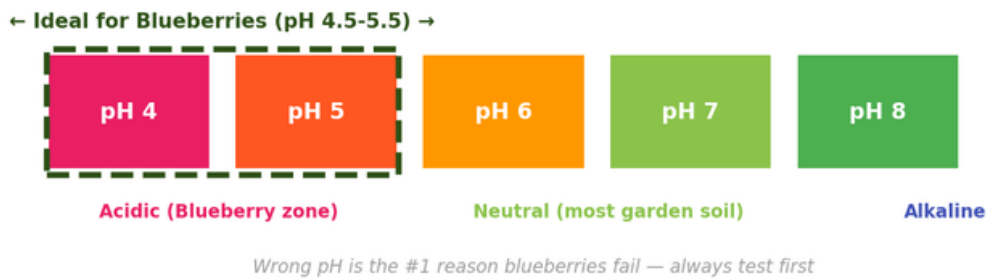


A vertical strawberry tower holds 20–25 plants in just 4 sq ft of floor space.

Strawberries combine quick production, high value, and simple care. A strawberry plant costs \$3 to \$5 and produces 0.5 to 1 pound per year for 3 to 5 years. Nothing teaches you what homegrown fruit tastes like faster than a sun-warmed strawberry picked thirty seconds ago.

Choose everbearing or day-neutral types for extended production all season. June-bearing gives one large crop — best for jam-making. Day-neutral gives fruit from late spring through fall frost — best for fresh eating. Plant with crown exactly at soil level. Too deep and they rot; too shallow and they dry out.

### Soil pH Guide for Blueberries — Test Before You Plant

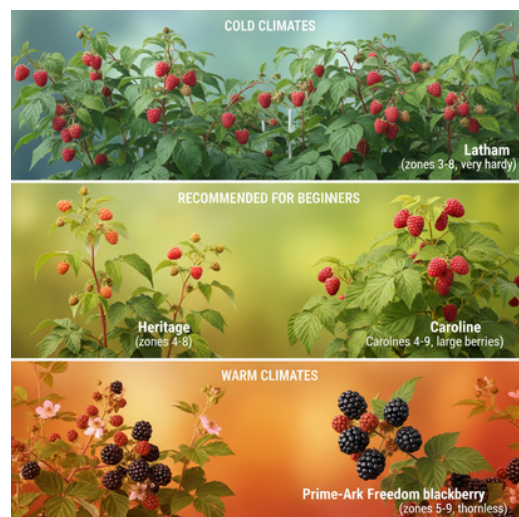


Blueberries need pH 4.5–5.5. Test before you plant — wrong pH is the #1 reason they fail.

## Section 2.2 — Raspberries and Blackberries

Raspberries and blackberries are among the most forgiving fruit plants. They tolerate poor soil, temporary drought, and wide temperature ranges. The main challenge is not getting them to grow — it is containing them. Choose primocane (fall-bearing) raspberries for beginners: cut everything to the ground each fall, let regrow in spring, harvest in fall. That is the entire annual routine.

- Recommended for beginners — 'Heritage' (zones 4–8), 'Caroline' (zones 4–9, large berries)
- Cold climates — 'Latham' (zones 3–8, very hardy)
- Warm climates — 'Prime-Ark Freedom' blackberry (zones 5–9, thornless)



## Section 2.3 — Blueberries: Nutrient Powerhouses

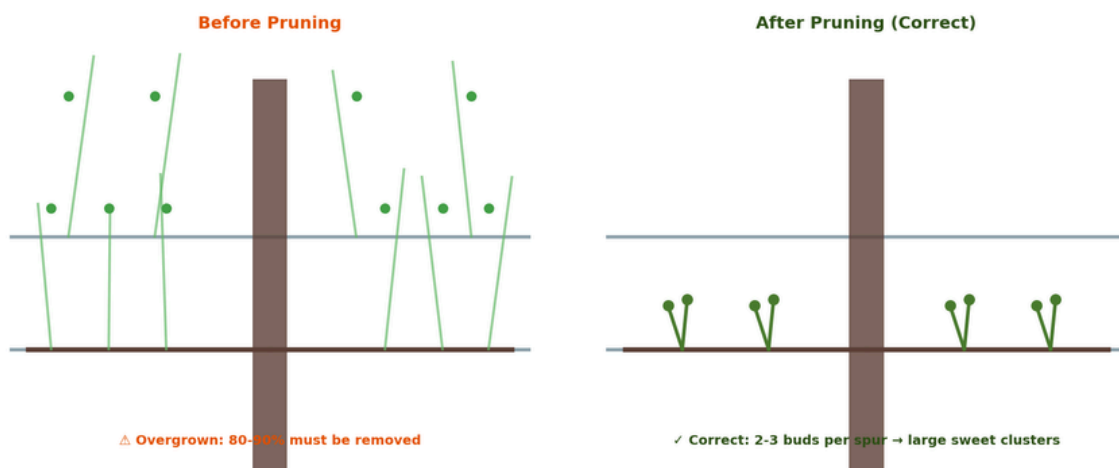


Blueberries need acidic soil (pH 4.5 to 5.5). Most garden soil is pH 6.0 to 7.5. Wrong pH is the single biggest reason blueberries fail. Test before planting. Containers solve the pH problem permanently — fill pots with 50% peat moss, 30% pine bark, 20% perlite and pH stays correct regardless of native soil.

Plant at least two different varieties within 50 feet for cross-pollination. This increases yield 50 to 100% and produces larger berries. Good pairs: Duke + Bluecrop (zones 4–7), O'Neal + Emerald (zones 7–10), Brightwell+Tifblue(zones 7–9,heat-tolerant Southeast).

## Section 2.4 — Grapes: The Overlooked Backyard Gem

### Grape Pruning: The One Technique That Guarantees Heavy Harvests



The single most important grape skill: cutting 80–90% of last year's canes back to 2–3 bud spurs each winter.

Most people wrongly assume grapes are too hard. Wild grapes grow vigorously in ditches without any care. Table grapes for fresh eating are among the most forgiving fruit plants. A grape vine lives 20 to 40+ years and produces 15 to 30 pounds annually on a simple fence trellis.

The one pruning technique that guarantees heavy harvests: in late winter, cut all last season's canes back to 2 to 3 buds (spurs) on the permanent horizontal branch. Remove 80 to 90% of last year's growth. This seems extreme but produces fewer, larger, sweeter clusters that ripen properly. Unpruned vines produce excessive foliage and poor fruit.



## Section 2.5 — Melons: Summer's Ultimate Reward

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Icebox watermelon varieties (Sugar Baby, Blacktail Mountain) produce 8 to 12 lb melons — perfect for vertical growing with slings made from mesh bags or pantyhose. The key: wait until soil reaches 70°F before planting. Melons planted in warm soil May 15 outperform melons planted in cool soil May 1. Use a soil thermometer (\$8 to \$12) to confirm.

### COMMON MISTAKES — WATCH-OUTS

Planting strawberries too deep. Crown must sit at soil surface — buried crowns rot.

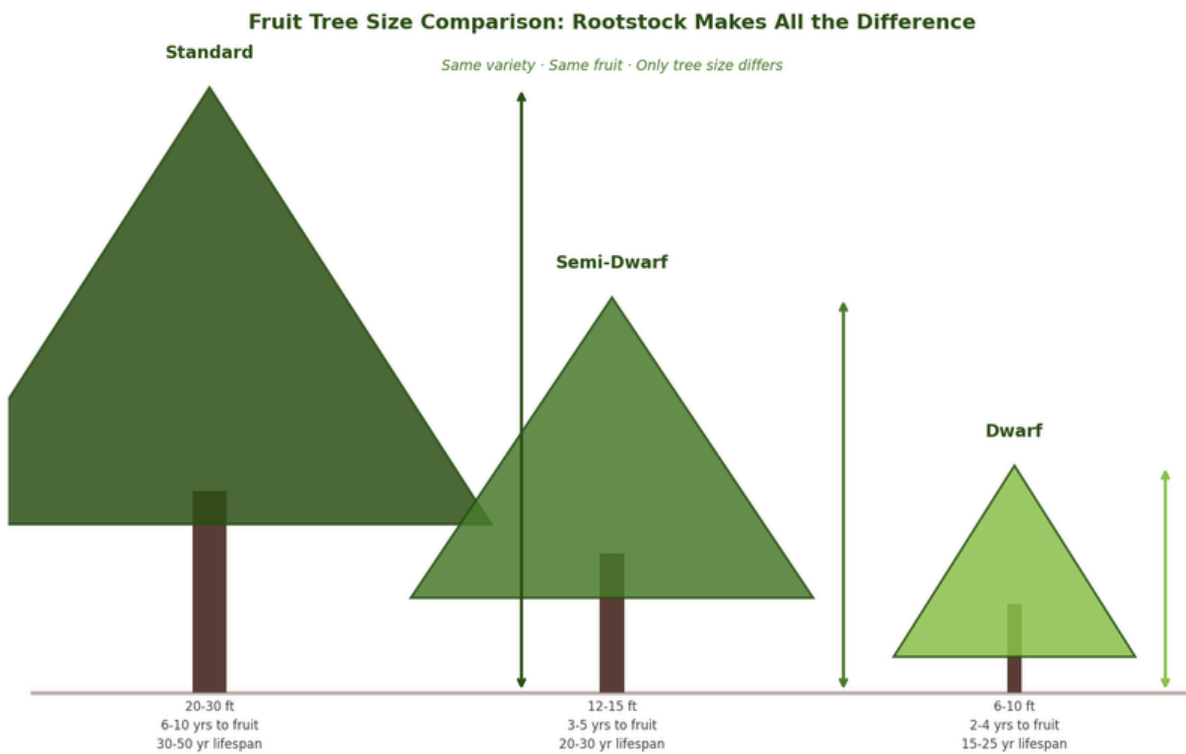
Planting only one blueberry variety. Two varieties give 50–100% more fruit.

Not pruning grapes. Unpruned vines produce foliage and poor fruit. Cut 80–90% of growth.

Planting melons too early in cool soil. Wait for 70°F soil temperature.

## CHAPTER 3

# Compact Fruit Trees



Same variety, same fruit — only tree size differs. Dwarf rootstock is the key to backyard orchards.

Tree fruits represent the long-term foundation of any food system. Modern rootstock technology makes growing apples, peaches, pears, and other tree fruits practical in spaces measured in feet, not acres.

## Section 3.1 — Understanding Rootstock

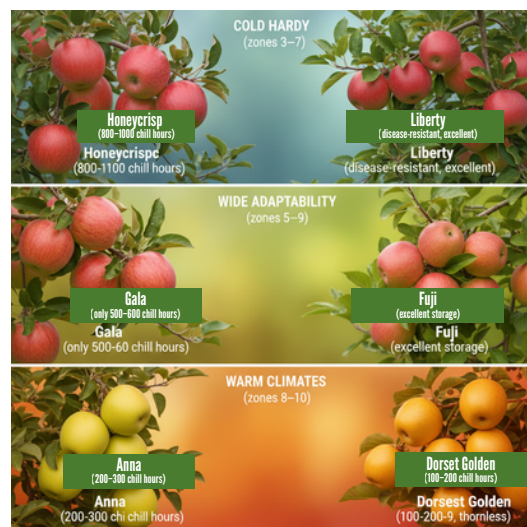
Rootstock	Mature Height	Years to Bearing	Annual Yield	Lifespan
Standard	20-30 ft	6-10 yrs	400-800 lbs	30-50 yrs
Semi-dwarf	12-15 ft	3-5 yrs	100-200 lbs	20-30 yrs
Dwarf	6-10 ft	2-4 yrs	30-60 lbs	15-25 yrs
Genetic dwarf	4-6 ft	1-2 yrs	20-35 lbs	10-15 yrs

For home food production, dwarf yields are more than sufficient. A family eating 50 pounds of apples annually does not benefit from a tree producing 600 pounds.

## Section 3.2 — Apples

Most apple varieties need pollen from a different variety that blooms at the same time. Plant two different varieties within 50 feet. Workarounds: multi-grafted trees (5-in-1 trees with multiple varieties), nearby crabapples, or choose self-fertile columnar varieties. Disease-resistant varieties (Liberty, Enterprise, Freedom) require almost no spraying — a major advantage for organic growers.

- Cold hardy (zones 3–7): 'Honeycrisp' (800–1000 chill hours), 'Liberty' (disease-resistant, excellent)
- Wide adaptability (zones 5–9): 'Gala' (only 500–600 chill hours), 'Fuji' (excellent storage)
- Warm climates (zones 8–10): 'Anna' (200–300 chill hours), 'Dorsett Golden' (100–200 chill hours)



### Section 3.3 — Stone Fruits: Peaches, Plums, Cherries, Apricots

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Genetic dwarf peaches (Bonanza, Honey Babe) mature at 4 to 6 feet tall, produce full-sized fruit, and are ideal for containers. Most peaches and nectarines are self-fertile — no second tree needed. Match chill hours to your climate carefully: low-chill varieties (Florida Prince at 150 hours) are essential in zones 8 to 10. Standard peaches (Redhaven at 950 hours) are for cold-winter climates.

Brown rot is the main stone fruit disease. Prevention beats treatment: prune for open canopy air circulation, remove all fallen and mummified fruit, water the soil not the foliage, and harvest promptly when ripe.

### Section 3.4 — Citrus: Not Just for Warm Climates

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The "winter inside, summer outside" method extends citrus to zones 5 to 6. Move containers outdoors after last frost (May). Move indoors before first frost (October). Place in brightest indoor location with a grow light if needed. Maintain 55 to 65°F. No light needed for dormant deciduous plants, but citrus is evergreen and needs light year-round.



Meyer lemon is the best beginner citrus: self-fertile, fruits year 1 to 2, compact (4 to 6 feet in containers), productive (20 to 40 lemons annually at maturity), sweeter than standard lemons, and tolerates cold to 20 to 25°F.

## Section 3.5 — Figs: The Easiest Fruit Tree You Have Never Considered

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Figs tolerate poor soil, drought, heat, container growing, and heavy pruning. They have few pest or disease problems. Self-fertile. Two crops per year in warm climates. They fruit heavily at young age. An unheated garage staying 25 to 45°F overwinters dormant figs perfectly — no light needed, just monthly watering. This technique works reliably in zones 5 to 6 and has been practiced for generations.



- Chicago Hardy: to 0°F, best cold-climate variety
- Brown Turkey: reliable, productive, zones 6–9
- Petite Negra: naturally dwarf (4–5 ft), excellent container variety

### COMMON MISTAKES — WATCH-OUTS

Buying standard rootstock to save \$10. A 25-foot tree in a small space is a wasted investment

Not staking dwarf trees. Dwarf rootstocks have weaker root systems — always stake permanently.

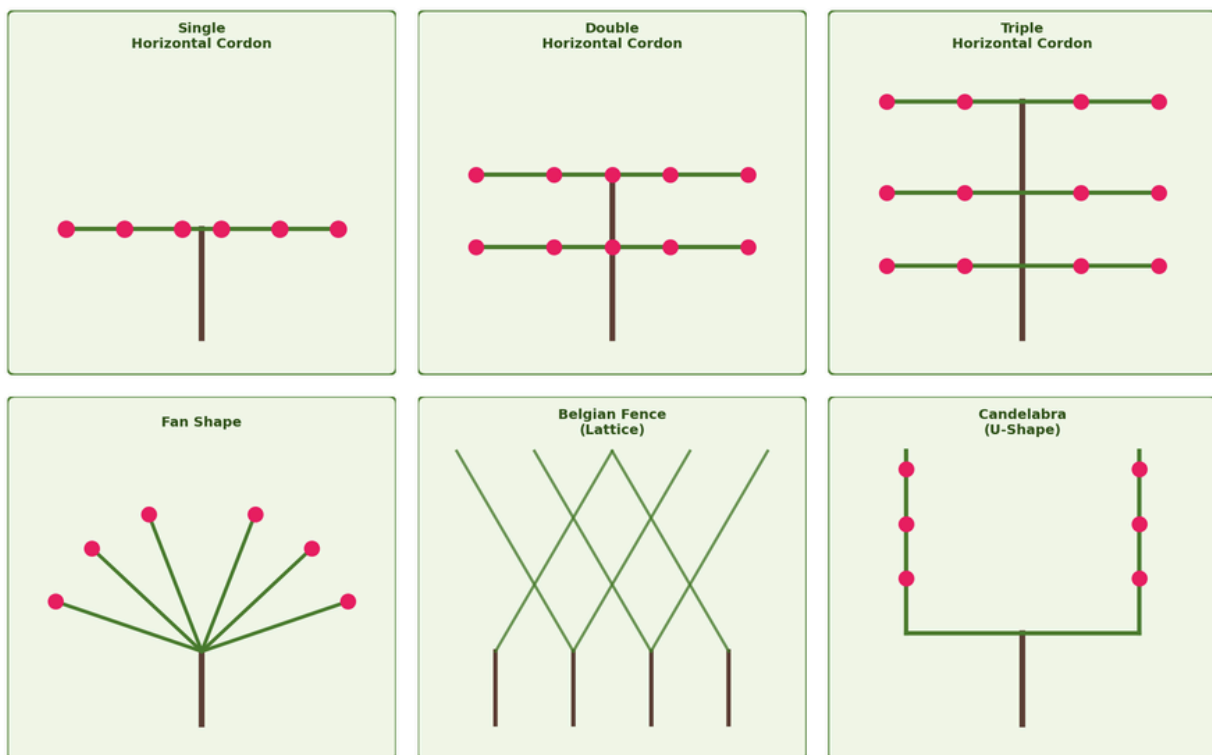
Ignoring pollination. Two Gala apples do not pollinate each other — you need different varieties.

Planting high-chill varieties in warm climates. Always check chill hour requirements first.

## CHAPTER 4

# The Vertical Fruit Garden

## The Six Classic Espalier Training Patterns



Six classic espalier patterns — from the simple single cordon (beginner) to the Belgian fence (advanced).

Vertical growing multiplies productive space without expanding your footprint. A south-facing wall that currently grows nothing can support an espalier apple tree producing 40 pounds annually. A fence you already own becomes a grape trellis. The work you put into vertical infrastructure pays dividends for 20+ years.

## Section 4.1 — The Vertical Advantage

Most fruit plants naturally climb or spread. Grapes evolved climbing trees. Even fruit trees produce more fruit on horizontal branches than vertical ones. Vertical systems work with these natural growth patterns.

- Basic grape trellis: Under \$30 — two T-posts plus 25 feet of 12-gauge wire
- Wall-mounted espalier framework: \$35 to \$40 — eye bolts, wire, turnbuckles
- Cattle panel arch arbor: \$60 to \$100 — creates an 8-foot-long productive tunnel



## Section 4.2 — The Espalier Method

Espalier trains fruit trees

To grow in two dimensions— height and width, minimal depth. A freestanding dwarf apple tree occupies 64 square feet. The same variety trained as espalier occupies 8 feet wide by 1 foot deep — an 87% space reduction with similar fruit production. The biological reason this works: fruit trees produce most flowers and fruit on horizontal or near-horizontal branches. Espalier maximizes horizontal branching.

Start with a one-year-old unbranched whip (single stem).

Install wires at 18 to 24 inch intervals on your wall or fence.

Year 1: establish first horizontal tier.

Year 2: add second tier.

Year 3: production begins.

Maintenance is 15 to 30 minutes monthly during growing season.



**EXAMPLE: The Garage Wall Espalier**

James has a south-facing garage wall (8 feet wide, full sun). He installs three horizontal wires (\$35) and plants a Liberty apple whip (\$40) 8 inches from the wall

Over three years he trains it into a triple horizontal cordon. Year 4: 25 lbs apples. Year 5+: 35–40 lbs annually.

The tree occupies 8 ft × 8 inches of ground space — producing as much fruit as a freestanding dwarf tree using 60+ sq ft.

**Section 4.3 — Berry Towers and Vertical Planters**

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A PVC strawberry tower (5 feet tall, 6-inch diameter pipe) holds 20 to 25 plants in 4 square feet of floor space with a central watering pipe. Realistic production: 10 to 20 pounds annually. For raspberries, a single large container with a central support pole and wire cylinder produces 6 to 10 pounds from 3 to 4 canes in 3 to 4 square feet.

## Section 4.4 — Arbors, Pergolas, and Overhead Growing

One mature grape vine covers 80 to 100 square feet of overhead space and produces 25 to 40 pounds of grapes annually while shading a patio underneath. The structure must be strong enough to support vine weight (100+ pounds when mature). Sink posts 2 to 3 feet deep in concrete. Hardy kiwi (zones 4 to 8) is even more productive — 50 to 100 pounds per female vine — but requires both male and female plants and very aggressive annual pruning.



### COMMON MISTAKES — WATCH-OUTS

Weak support structures. Grape vines and kiwis are heavy. Build stronger than you think necessary

Starting espalier with large branched trees. Use one-year whips for maximum training control.

Inconsistent espalier pruning. Check and manage monthly during growing season.

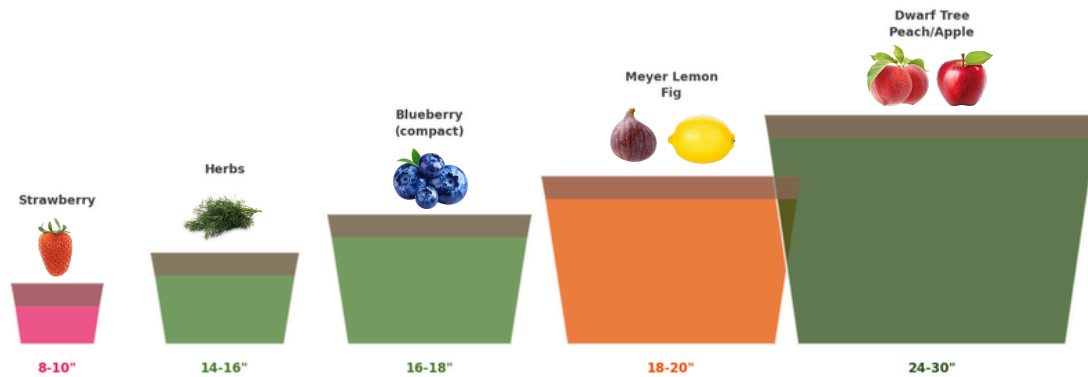
Insufficient watering of towers and wall planters. These dry quickly — often need daily water in summer.

## CHAPTER 5

# Container Fruit Growing Mastery

## Container Size Guide for Fruit Plants

*Bigger is always better — these are minimums*



Container size guide — these are minimums. Larger containers always produce better results.

Containers liberate fruit growing from ground space limitations. Root restriction in containers signals the plant to shift from vegetative growth (leaves, branches) to reproductive growth (flowers, fruit) — which is why container fruit often produces earlier than ground-planted fruit.

## Section 5.1 — Why Containers Work

Additional advantages beyond root restriction: complete mobility (follow the sun, bring indoors for winter), complete soil control (fix pH, drainage, nutrition), easier pest inspection, accessibility (less bending), and portability when you move. Container gardens are not a compromise — they are a system with specific advantages.



## Section 5.2 — Choosing the Right Containers

Fruit	Minimum Size	Preferred Size	Best Material
Strawberries	10 in / 8 in deep	12–14 in	Plastic or fabric bag
Blueberries	16 in / 16 in deep	20–24 in	Plastic or ceramic
Dwarf fruit trees	18 in / 18 in deep	24–30 in	Large plastic or wood
Genetic dwarf peach	16 in / 16 in deep	20–24 in	Plastic or fabric
Figs	15 in / 18 in deep	20–24 in	Large plastic
Citrus	16 in / 18 in deep	20–24 in	Ceramic or plastic

Every container must have drainage holes. Without drainage, soil becomes waterlogged, roots suffocate, and plants die. Elevate containers on pot feet. The "more gravel in the bottom for drainage" advice is wrong — it actually creates a perched water table. Just ensure adequate holes and well-draining soil mix.

## Section 5.3 — Soil Recipes That Work

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Garden soil compacts in containers, eliminating air spaces roots need.

Always use purpose-made container mix.



- Standard all-purpose:  
50% peat moss or coir +  
30% perlite + 20% compost

- Blueberry-specific (acidic):  
50% peat moss + 30% pine  
bark + 20% perlite

- Budget mix:  
60% quality bagged potting mix +  
30% compost + 10% perlite

Feed container plants with both slow-release granular fertilizer (at planting, 3 to 6 month release) and liquid fertilizer every 2 to 3 weeks during active growth. Containers deplete nutrients faster than ground planting because frequent watering leaches them.

## Section 5.4 — Watering and Overwintering

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A moisture meter (\$8 to \$15) removes guesswork entirely. Insert probe 2 to 4 inches into soil; water when "dry." Always water until runoff from drainage holes — deep soaking is essential for healthy container plants. Shallow watering wets only the top few inches and allows salt buildup.

Container roots are less hardy than the same plant in the ground — treat containers as two hardiness zones less cold-tolerant. Deciduous fruit (apples, pears, figs, blueberries) does not need light during winter dormancy. An unheated garage staying 20 to 45°F is perfect. Citrus and other evergreens need light year-round — move to a bright indoor location with grow lights if needed.



### COMMON MISTAKES — WATCH-OUTS

Too-small containers. A dwarf apple in a 12-inch pot will never thrive. Use correct sizes from the start.

Using garden soil in containers. It compacts and suffocates roots. Always use potting mix.

No drainage holes. This is fatal. Every container must drain freely.

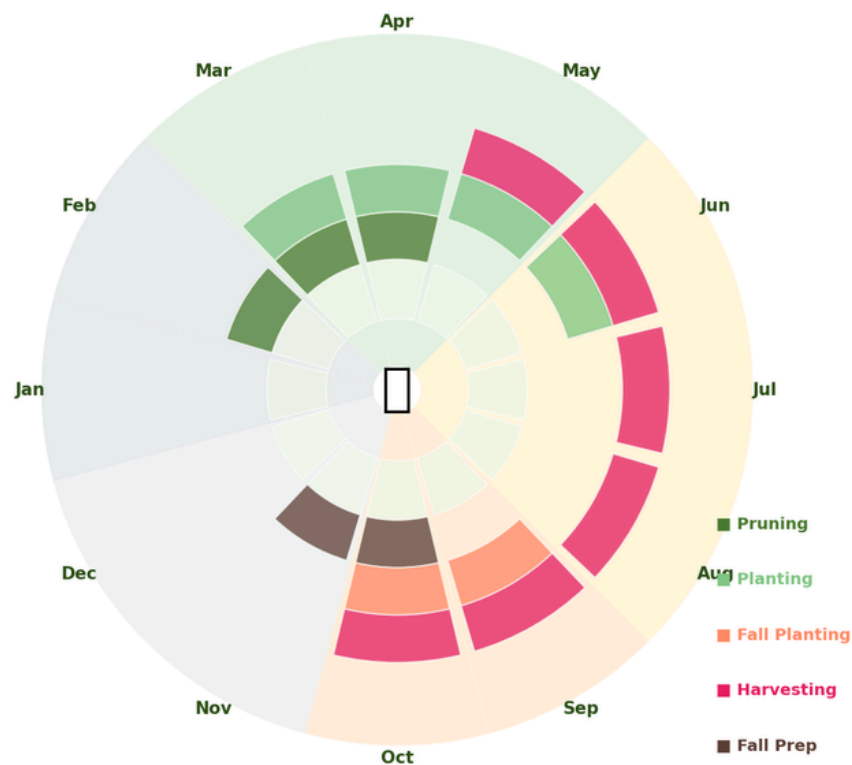
Not feeding enough. Container nutrients deplete quickly — feed regularly through the growing season.

Leaving tender plants outdoors all winter. Citrus and figs need protection in cold climates.

## CHAPTER 6

# The Four-Season Fruit Calendar

The Four-Season Fruit Calendar



The fruit grower's year — every season has a role. None can be skipped entirely.

Fruit growing follows natural cycles. Understanding those cycles lets you work with plant biology instead of against it. This chapter provides a practical guide so you always know what to do and when.

## Section 6.1 — Spring: Planting and Preparation

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Spring is the primary planting season in most climates. Bare-root plants must be planted before buds break — dormant roots are most resilient during transplanting. Container plants have more flexibility but still establish better in cool spring weather before summer heat arrives.

Dormant pruning (late February to early April, before bud break) is the most important annual maintenance for tree fruits. Structure is visible without leaves. Cuts heal as growth resumes. Remove dead, damaged, or diseased wood; crossing branches; water sprouts; and crowded branches. Remove no more than 25 to 30% of total growth in one session.



## Section 6.2 — Summer: Growth and Early Harvests

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Fruit development requires consistent moisture. Water ground plants deeply 1 to 2 times weekly; containers daily during peak heat (sometimes twice daily for small pots). Mulch 2 to 4 inches around plants to keep soil cool, retain moisture, and suppress weeds. Never pile mulch against trunks.



Harvest berries every 2 to 3 days at peak season. Fruit left too long on the plant drops, attracts pests, and spreads disease. Morning harvesting after dew dries keeps fruit firmest longest. Refrigerate immediately — strawberries lose half their vitamin C in 24 hours at room temperature.

## Section 6.3 — Fall: The Main Harvest

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Fall is apple, pear, fig, and late grape season. Each fruit has a distinct ripeness indicator:

- Apples: Gentle upward twist — ripe fruit separates cleanly. Background color changes from green to cream or yellow.
- Pears (European): Pick slightly underripe, firm. Ripen at room temperature off the tree. Ripening on the tree creates mealy texture.
- Figs: Soft, drooping on stem, skin beginning to crack. Ripe figs show a drop of sweet liquid at the base.
- Grapes: Taste is the only reliable indicator. Clip whole clusters with pruners.



Fall planting (September to November in zones 6 to 9) has significant advantages: warm soil encourages root establishment, cool air reduces transplant stress, fall rain provides natural irrigation, and roots establish through fall and winter for an early spring start.

## Section 6.4 — Winter: Planning and Pruning

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Late winter (January to March) is optimal for most fruit tree pruning. Structure is visible, plants are dormant, and cuts heal as growth resumes in spring. Grapes are pruned in late winter — the most critical annual task for grape production. Without winter pruning, vines become unproductive masses of foliage.

Month	Priority Tasks
Jan	Order catalogs; plan additions; maintain tools; check stored fruit
Feb	Dormant pruning; dormant oil spray; last bare-root orders
Mar	Plant bare-root trees; prune grapes and brambles; fertilize at bud swell
Apr	Finish planting; plant strawberries; monitor for late frost
May	Plant container trees; plant melons after soil warms; thin fruit; first harvests
Jun	Harvest strawberries and cherries; begin summer maintenance pruning
Jul	Harvest blueberries, raspberries, early apples; stop fertilizing late in month
Aug	Harvest peaches, plums, pears, grapes; stop all fertilizing; begin fall cleanup
Sep	Harvest apples, figs, late grapes; fall planting in mild climates; preserve harvest
Oct	Finish main harvest; prepare tender containers for winter protection
Nov	Move containers to storage; apply winter mulch after ground freezes
Dec	Minimal activity; monitor protected plants; plan next year; order catalogs

### COMMON MISTAKES — WATCH-OUTS

Pruning in fall. This stimulates frost-tender growth. Prune in late winter for most fruits

Fertilizing too late in season. Stop feeding by late summer — late nitrogen causes winterkill.

Inconsistent summer watering. Irregular water causes fruit drop, cracking, and poor flavor.

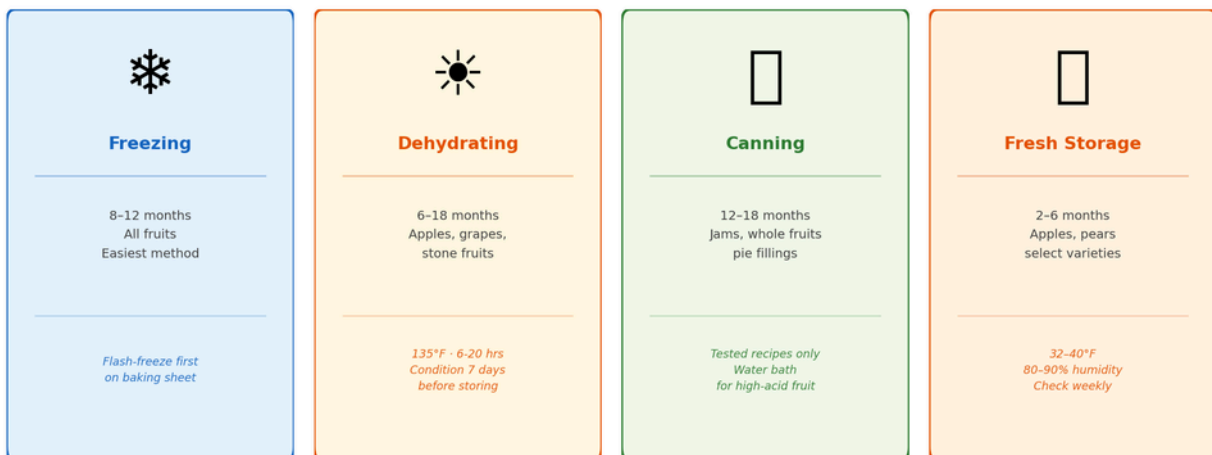
Leaving diseased material over winter. Remove all fallen fruit and diseased leaves each fall.

## CHAPTER 7

# Preservation — Storing

## Your Harvest

### Four Methods to Preserve Your Harvest Year-Round



The four preservation methods — each suited to different fruits, timelines, and equipment levels.

Fresh fruit is wonderful, but harvests come in concentrated waves. A mature apple tree produces 50 to 100 pounds in September and October. You cannot eat 100 pounds fresh in one month. Preservation extends your fruit season year-round and prevents waste.

## Section 7.1 — The Preservation Mindset



Plan before harvest. Estimate fresh eating for 2 to 3 weeks, then decide how to preserve the rest. Know in advance what you will do with each portion. Running short on freezer space during peak apple harvest is not a problem to solve at harvest time — it is one to plan for in August.

## Section 7.2 — Freezing Fruit

Freezing is the easiest preservation method and retains the most nutritional value. Flash-freeze berries first: arrange in a single layer on rimmed baking sheets, freeze solid (2 to 4 hours), then transfer to bags. This prevents clumping. Tree fruits (apples, pears, peaches) slice and toss with lemon juice before freezing to prevent browning. Texture becomes soft when thawed — best for cooking, baking, and smoothies rather than fresh eating.



Storage: 8 to 12 months at 0°F. Vacuum sealing extends life 50 to 100% and prevents freezer burn. Label everything with fruit type and date — you will not remember that mystery bag in February.

## Section 7.3 — Drying and Dehydrating

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A basic electric dehydrator (\$40 to \$80) is the most reliable drying method. Set at 135°F for most fruits. Apples take 6 to 12 hours, grapes 12 to 20 hours, peaches 8 to 16 hours. Test doneness by squeezing — no moisture should be released. Condition dried fruit by packing loosely in jars for 7 to 10 days, shaking daily to equalize moisture, before sealing for long-term storage. Properly dried fruit keeps 6 to 18 months.



## Section 7.4 — Canning Fruit

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Fruits are high-acid foods (pH below 4.6), making them safe for water bath canning at boiling temperature. Always use tested recipes from the USDA, Ball Blue Book, or university extension services. Never use untested internet recipes for canning — the acid balance and processing times have not been verified for safety.

Basic safety: process for the full time, check all seals (lids should be concave and not flex when pressed), store in cool dark place for up to 12 months, and discard without tasting any jar showing bulging lid, leaks, off odor, or visible mold. Altitude adjustments are required above 1,000 feet.

## Section 7.5 — Fresh Storage for Apples and Pears

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Late-season apple varieties (Fuji, Granny Smith, Enterprise) store 3 to 6 months at 32 to 40°F with 80 to 90% humidity in good air circulation. Handle carefully — bruises create rot that spreads to neighboring fruit. Check stored fruit weekly and remove any showing decay immediately. Store apples away from other produce: they emit ethylene gas that accelerates ripening and spoilage of everything nearby.



### COMMON MISTAKES — WATCH-OUTS

Washing berries before freezing. Freeze unwashed, rinse just before use.

Not labeling frozen or canned items. You will not remember what is in that bag in February.









Using untested canning recipes. Use only USDA-tested recipes for water bath canning.

Not adjusting processing time for altitude. Above 1,000 feet, add time per USDA guidelines.

CHAPTER 8

# Troubleshooting Common Problems

### Common Fruit Pests & Diseases: Quick Identification Guide

 <p><b>Codling Moth</b></p> <p>Worms in apples. Entry hole + sawdust.</p> <p><b>Fix:</b> Bag fruit; pheromone traps</p>	 <p><b>Apple Maggot</b></p> <p>Brown tunnels. Dimpled skin.</p> <p><b>Fix:</b> Red sphere traps; bag fruit</p>	 <p><b>Aphids</b></p> <p>Clusters on tips. Sticky residue.</p> <p><b>Fix:</b> Water spray; ladybugs</p>	 <p><b>Japanese Beetle</b></p> <p>Skeletonized leaves. Beetles visible.</p> <p><b>Fix:</b> Hand-pick; milky spore</p>
 <p><b>Spider Mites</b></p> <p>Yellow stippling. Fine webbing.</p> <p><b>Fix:</b> Forceful water; predatory mites</p>	 <p><b>Powdery Mildew</b></p> <p>White powder on leaves.</p> <p><b>Fix:</b> Good airflow; sulfur spray</p>	 <p><b>Brown Rot</b></p> <p>Soft brown spots. Gray fuzzy mold.</p> <p><b>Fix:</b> Sanitation; copper spray</p>	 <p><b>Fire Blight</b></p> <p>Blackened shoots. Shepherd's crook.</p> <p><b>Fix:</b> Prune 12" below; disinfect tools</p>

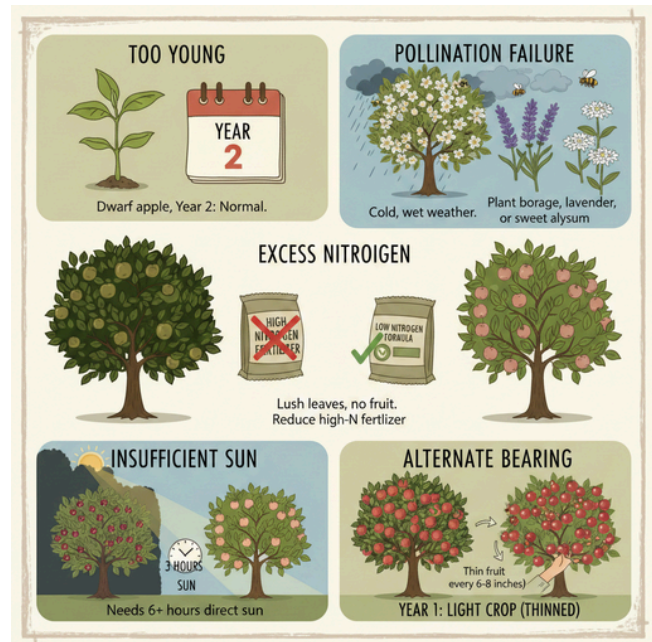
Quick identification guide for the eight most common fruit pests and diseases.

Problems arise even with good care. This chapter helps diagnose and solve the most common fruit growing issues without panic or expensive interventions.

## Section 8.1 — My Fruit Tree Is Not Producing

The most common causes of non-production, in order of frequency:

- Too young: Check expected bearing age for the variety and rootstock. A dwarf apple producing nothing at year 2 is normal. See the timeline table in Chapter 1.
- Pollination failure: No compatible pollinator variety, or bloom times do not overlap, or pollinators were not active during flowering (cold, wet weather). Plant borage, lavender, or sweet alyssum nearby to attract bees.
- Excess nitrogen: Promotes lush leaf growth at the expense of fruit. Reduce fertilizer and switch to a lower-nitrogen formula.
- Insufficient sun: 6 hours minimum. Measure actual hours during summer, not just assess by eye.
- Alternate bearing: Apples may produce heavily one year and lightly the next. Break the cycle by thinning heavily in "on" years — one fruit every 6 to 8 inches.



## Section 8.2 — Pest Management Without Chemicals

The practical approach: monitor weekly, identify correctly before treating, accept minor damage (5 to 10% leaf damage is normal and acceptable), start with the least toxic method, and escalate only if populations exceed threshold. Every pest has an action threshold. A few aphids on one branch means monitoring, not spraying. Aphids coating all new growth and curling leaves means insecticidal soap.

Physical barriers are often more effective than any spray. Bird netting before fruit ripens prevents virtually all bird damage. Kaolin clay spray (white film on fruit) deters most insects. Fruit bagging (paper bags slipped over developing fruit) is 100% effective against codling moth and apple maggot but is labor-intensive.

## Section 8.3 — Disease Prevention and Treatment

Most fruit diseases spread through spores. Reducing spore sources reduces disease. Sanitation first, always: remove fallen fruit immediately (one rotting apple releases spores affecting dozens of healthy ones), rake and destroy diseased leaves in fall, prune out diseased wood (disinfect pruners between cuts with 10% bleach or rubbing alcohol), and water the soil not the foliage. Fire blight (blackened shoots with shepherd's crook tip) is the most serious apple and pear disease. Prune 12 inches below visible infection during dry weather. Disinfect tools religiously between every cut. Choose resistant varieties (Liberty, Enterprise) to minimize risk.



## Section 8.4 — Weather and Climate Challenges



Late spring frosts kill blossoms and eliminate the crop. Effective protection: drape frost blankets over trees on forecast nights (remove in morning), water the soil thoroughly the afternoon before (moist soil releases heat overnight), or move container trees to shelter. One frost night can eliminate the entire year's crop on early-blooming peaches and apricots — monitor forecasts closely during bloom. Drought prioritization: water newly planted trees and those with fruit developing first. Deep infrequent watering (once per week, deeply) encourages deep roots that survive drought better than shallow daily watering. Heavy mulch dramatically reduces soil moisture loss.

## Section 8.5 — Wildlife

Birds strip blueberries, cherries, and grapes overnight. Apply netting before fruit ripens — birds develop feeding patterns that are hard to break once established. Deterrents (fake owls, reflective tape) have limited effectiveness. Birds adapt quickly. Netting is the only method with consistent results.



Deer: 8-foot fencing is the only fully reliable method. Squirrels: trunk guards of smooth metal flashing prevent climbing on young trees; harvest promptly. Rodents (voles, rabbits): hardware cloth tree guards wrapped around trunks and buried 2 to 3 inches deep prevent bark damage that can girdle and kill young trees.

### COMMON MISTAKES — WATCH-OUTS

Giving up on young trees too early. Wait for normal bearing age before declaring a tree unproductive.

Using broad-spectrum pesticides. These kill beneficial insects along with pests, creating worse problems.

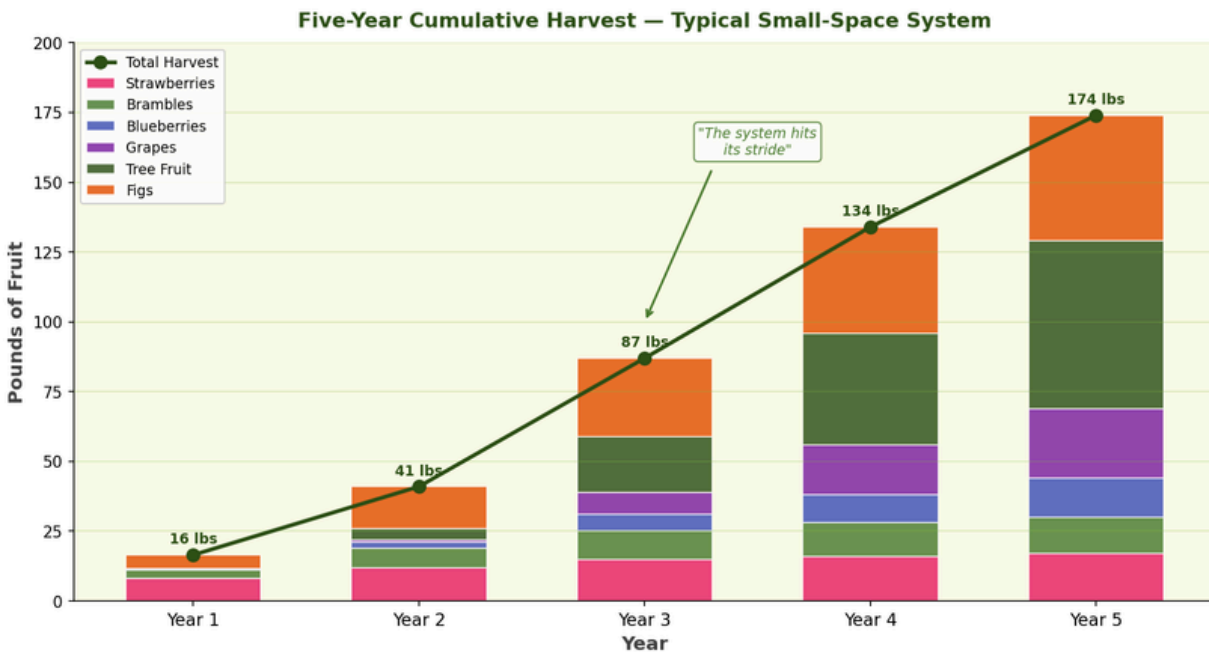
Ignoring disease early. Small infections are manageable. Waiting until widespread makes control very difficult.

Not removing diseased material. Leaving diseased fruit and leaves spreads infection all season long.

Overhead watering in the evening. Wet foliage overnight promotes disease. Water in the morning.

CHAPTER 9

# The Five-Year Fruit Freedom Plan



Typical cumulative harvest by year — the system builds steadily and then sustains itself for decades.

This chapter provides a realistic roadmap for building your fruit system over time, with honest expectations at each stage.

## Section 9.1 — Year One: Quick Wins and Foundation

Year one's primary purpose is establishing plants, building confidence, and learning your specific site. Expect modest harvests. Expect some failures. Expect surprises. Every site is different — year one teaches you things no book can: which corner stays wettest, where late frosts hit hardest, which pest pressures are heaviest in your area.



Recommended year one plantings: 6 to 12 strawberry plants (\$15 to \$30), 4 to 6 bramble canes (\$15 to \$25), one dwarf fruit tree (\$30 to \$60), and one vertical growing system (\$30 to \$100 in materials). Expected harvest: 10 to 25 pounds total. Year one is about establishment, not production.

## Section 9.2 — Year Two: Expansion and Learning

Year two decisions are informed by year one experience. You know your site better. Review before expanding: what produced well? Expand that. What died or struggled? Find out why before replanting.

What is missing from your harvest calendar? Fill gaps.



Add blueberries and grapes if not already planted. If your year one tree requires a pollinator, add the second tree now. Expand container growing if you have patio or deck space. Expected harvest: 25 to 50 pounds typical.

### Section 9.3 — Year Three: Hitting Your Stride

Year three marks a turning point. You are spending more time harvesting and preserving than planting and establishing. That is the shift from setup to operation. Expected harvest: 70 to 120 pounds typical.

#### EXAMPLE: Ruth's Year Three: Full System Running

Strawberries (two beds): 18 lbs. Raspberries: 12 lbs. Blueberries: 6 pints. Apple: 22 lbs. Dwarf peach: 15 lbs. Fig: 18 lbs. Grapes: 8 lbs.

Total: ~98 lbs. She preserved 40+ lbs via freezing, jam, canning, and drying.

Estimated retail value at organic prices: \$400–500. Total investment to date: ~\$275.

### Section 9.4 — Years Four and Five: Abundance

Abundance means producing more than you need fresh, enough to preserve meaningfully, and steady production across the growing season. It means fresh fruit from May through October, preserved fruit extending through winter, and enough surplus to share with neighbors.

Plant (mature)	Annual Yield	Productive Life
Strawberries (established bed)	12–20 lbs	3–5 yrs (renew)
Raspberries (full patch)	10–18 lbs	8–12 years
Blueberries (4–6 mature bushes)	8–16 pints	20–30+ years
Dwarf apple (year 4–5)	30–60 lbs	15–25 years
Genetic dwarf peach	25–40 lbs	10–15 years
Fig (container, year 4)	30–50 lbs	20–30 years
Grape (per vine, year 4–5)	15–30 lbs	20–40+ years

## Section 9.5 — The Long-Term Vision

A mature fruit garden at year 5 and beyond requires less work than building it. Expect 2 to 4 hours monthly average. A comparable vegetable garden requires significantly more time due to annual replanting, succession planting, and starting over every spring.



Five-year economics: typical total investment \$475 to \$775. Five-year cumulative harvest: 380 to 645 pounds. At a conservative \$3 per pound average retail, harvest value: \$1,140 to \$1,935 over five years. By year 6 and beyond, annual production cost drops to maintenance only (\$50 to \$100 per year) while yields remain high for decades. This calculation does not account for superior quality, food security, or the satisfaction of knowing exactly what is in your food.

### COMMON MISTAKES — WATCH-OUTS

Planting too much in year one. Overwhelm leads to neglect. Start with 5–10 plants.

Expecting year-four yields in year two. The system takes time. Impatience creates disappointment.

Not replacing strawberries on schedule. After 4–5 years, beds decline — plan renewal plantings.

Neglecting dormant pruning as the system matures. Pruning maintains productivity year after year.

Not keeping records. Write down what you planted, from where, what variety — you will need this.

CHAPTER 10

# Quick-Start Guide

### The 30-Day Fruit Freedom Kickstart



The 30-day kickstart — four weeks from planning to plants in the ground.

This chapter cuts through the planning and gets you to your first harvest. If you are ready to act now, this is where to start.

## Section 10.1 — The 30-Day Fruit Freedom Kickstart

Week 1 (Days 1 to 7): Audit your space. Record sun exposure, drainage, existing structures, and any south or west-facing walls. Look up three numbers that guide every variety decision: your hardiness zone, average frost dates, and local chill hours.



Week 2 (Days 8 to 14): Acquire plants and materials. Visit local nurseries with your hardiness zone, chill hour number, and variety list. Buy hand pruners (\$25 to \$35, buy quality — you will use them for years), a soil pH test kit (\$12), and compost and mulch.

Week 3 (Days 15 to 23): Plant. Strawberries first — highest priority for quick harvest. Then brambles. Then tree fruit. For every plant: correct planting depth is critical. Strawberry crowns at soil level. Tree graft union 2 inches above soil. Water thoroughly immediately after planting.



Week 4 (Days 24 to 30): Check all plants daily. Water if soil is dry 1 inch deep. Label every plant with variety name, source, and date. Take photos. Create a simple notebook with planting records. You will reference this in year three.

## Section 10.2 — Starter Shopping List by Climate

Zone	Strawberry	Berry/Bramble	Tree Fruit
3–5	Honeoye or Quinault	Latham raspberry + Northblue blueberry	Reliance peach or Honeycrisp apple
6–7	Chandler or Seascape	Heritage raspberry + Bluecrop blueberry	Gala apple + Brown Turkey fig
8–10	Chandler or Albion	Misty + O'Neal blueberry pair	Meyer lemon + Florida Prince peach

## Section 10.3 — The One-of-Each Starter Garden

The simplest possible complete system uses three plants — one from each category. One blueberry pair (two varieties for pollination). One genetic dwarf peach or compact fig (early-producing, container-friendly). One table grape on a fence or trellis (long-lived, productive, shade-providing).



Year three harvest from a 10×10 space: 8 to 15 lbs strawberries, 4 to 6 pints blueberries, 20 to 35 lbs peach or fig, 10 to 20 lbs grapes. Total: 45 to 75 lbs. That is the system working.

## Section 10.4 — Your Next Steps

The most important next step is the simplest: start with what you have, where you are, this season. Three plants with good care outperform ten plants with poor care. One established blueberry pair producing 6 pints per year is worth more than a complex system that overwhelms you into abandoning it.



Find your local Master Gardener program (free advice, specific to your region). Visit local nurseries and ask about what grows best in your specific area. Connect with other gardeners — someone nearby has been growing fruit in your exact microclimate for years and will gladly share what they have learned.

### COMMON MISTAKES — WATCH-OUTS

Over-planning and under-doing. A few plants in the ground beats an elaborate plan on paper.

Buying plants without verifying zone and chill hour suitability.

Not testing soil pH before planting blueberries. Test first, amend, then plant.

Planting too deep. Fruit plants are especially sensitive to crown and graft union depth.

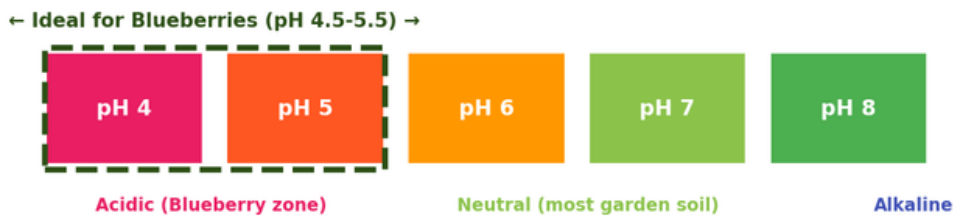
Not keeping records. Write down what you planted, from where, what variety.

APPENDICES

# Reference Charts, Tables & Tracking Sheets

## APPENDIX A — Fruit Variety Recommendations by Zone

**Soil pH Guide for Blueberries — Test Before You Plant**



*Wrong pH is the #1 reason blueberries fail — always test first*

Soil pH reference — test your soil before planting blueberries, currants, or gooseberries.

All varieties listed have been proven in home garden settings. Always verify chill hours match your local average before purchasing.

Fruit	Variety	Zones	Chill Hrs	Notes
Apple	Honeycrisp	3–7	800–1000	Best fresh eating quality
Apple	Liberty	4–8	800	Disease resistant, best low-spray

Fruit	Variety	Zones	Chill Hrs	Notes
Apple	Gala	5–8	500–600	Wide adaptability, sweet
Apple	Anna	6–10	200–300	Low chill, warm climates
Peach	Reliance	4–8	1000	Very cold hardy, reliable
Peach	Bonanza (dwarf)	5–9	500	Genetic dwarf, container-perfect
Peach	Florida Prince	8–10	150	Very low chill requirement
Blueberry	Duke + Bluecrop	4–7	800	Best pollination pair, reliable
	O'Neal + Emerald	7–9	300–400	Low chill pair, excellent flavor
Blueberry	Seascape	4–9	N/A	Day-neutral, continuous season
Strawberry	Chandler	5–10	N/A	Excellent fresh flavor
Strawberry	Canadice	5–8	N/A	Seedless, cold hardy, sweet
Grape	Flame Seedless	7–10	N/A	Warm climate classic
Grape Fig	Chicago Hardy	5–9	N/A	Hardest, survives to 0°F

## APPENDIX B — Companion Planting

Strategic companion planting improves pollination, reduces pest pressure, and makes efficient use of space around fruit plants.

Companion	Benefit	Plant Near
Borage	Attracts pollinators, traditional strawberry companion	All fruit during bloom
Chives	Deters aphids and fungal diseases	Apple trees, berry bushes
Nasturtiums	Trap crop for aphids (draws them away)	Any aphid-susceptible fruit
White clover (ground cover)	Fixes nitrogen, attracts pollinators	Under fruit trees
Lavender	Attracts bees, deters some pests	Near all fruit at bloom time
French marigolds	General pest deterrent	Strawberries, brambles

Companion	Benefit	Plant Near
Sweet alyssum	Attracts hoverflies and parasitic wasps	Throughout garden

Avoid near fruit: black walnut trees (juglone toxin damages apples and blueberries within 50 feet); fennel (allelopathic, inhibits most plants); aggressive grass around young trees (competes for water and nutrients).

## APPENDIX C — Organic Pest & Disease Reference

Problem	Symptoms	First Response	Escalation
Aphids	Clusters on tips, sticky residue	Strong water spray	Insecticidal soap every 4–7 days
Codling moth	Worms in apples/pears	Pheromone traps, bag fruit	Kaolin clay spray from petal fall
Japanese beetle	Skeletonized leaves	Hand-pick into soapy water	Milky spore (long-term soil treatment)
Spider mites	Yellow stippled leaves, webbing	Forceful water spray	Insecticidal soap, predatory mites
Powdery mildew	White powder on leaves	Improve air circulation	Sulfur spray every 7–14 days
Brown rot	Soft brown spots on fruit	Remove and destroy infected fruit	Copper fungicide at petal fall
Fire blight	Blackened shoots, shepherd crook	Prune 12 in below infection	Disinfect tools every cut; no cure
Apple scab	Dark spots on leaves and fruit	Fall leaf cleanup	Lime-sulfur dormant spray; resistant varieties

## APPENDIX D — Yield Expectations

Plant	Yrs to Full Prod	Yield / Plant (mature)	Life Span
Strawberry (everbearing)	2	0.8–1.2 lbs/plant	3–5 yrs
Raspberry (primocane)	2	1–2 lbs/cane	8–12 yrs
Blueberry (highbush)	3–5	4–8 pints/bush	20–30+ yrs
Grape (table, trellis)	3–4	15–30 lbs/vine	20–40+ yrs
Hardy kiwi (female)	5–7	50–100 lbs/vine	30+ yrs
Dwarf apple	2–4	30–60 lbs	15–25 yrs
Genetic dwarf peach	1–2	20–35 lbs	10–15 yrs
Tart cherry (dwarf)	3–4	15–25 lbs	15–25 yrs
Fig (container)	1–2	20–40 lbs	20–30 yrs
Meyer lemon (container)	1–2	15–30 fruits	20–30 yrs

## APPENDIX E — Tracking Sheets & Resources

Copy these templates into your garden notebook. Good records are the difference between guessing in year three and knowing exactly what to plant, expand, or replace.

### Planting Record Template

PLANT RECORD	
Plant type:	_____
Variety name:	_____
Source (nursery):	_____

<b>Purchase date:</b>	_____ Cost: \$ _____
<b>Planting date:</b>	_____ Location: _____
<b>Rootstock (if tree):</b>	_____
<b>Hardiness zone:</b>	_____ Chill hours required: _____
<b>Pollination notes:</b>	_____
<b>Expected first production year:</b>	_____

## Annual Harvest & Budget Tracker

Year	Total Harvest (lbs)	Preservation Used	Total Spent	Retail Value	Net Return
Year 1			\$	\$	\$
Year 2			\$	\$	\$
Year 3			\$	\$	\$
Year 4			\$	\$	\$
Year 5			\$	\$	\$

*"A blueberry bush planted today still produces in 2045.*

*The knowledge you build this season compounds the same way.*

*Start where you are, with what you have."*

*End of Fruit Freedom Formula*