

THE BACKYARD CHÂTEAU

The Complete Beginner's Guide to Growing French Hybrid Grapes
& Making Wine at Home

Daniel Storming

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This book provides general educational guidance for adults growing grapes and making wine at home. It cannot assess your site, health, equipment or wine. It is not a substitute for local horticultural, engineering, laboratory, legal or medical advice. Examples are learning tools, not guaranteed recipes or universal targets; results depend on materials, conditions and care.

Check current laws governing alcohol production, possession, transport and sale, together with planting restrictions, quarantines and propagation rights. Home-production allowances do not authorize commercial wine sales. Nursery availability, product formulations and regulations may change after publication. Current official requirements and product labels take precedence over general guidance here.

Use equipment and food-contact materials suitable for the task. Follow manufacturers' instructions, chemical labels and safety data, including protective equipment, dilution and disposal requirements. Provide adequate ventilation during fermentation; carbon dioxide can accumulate dangerously. Never enter a tank or fermenting vessel. Keep active fermentation vented, and never use ordinary still-wine bottles for pressure fermentation. Plan safe handling of heavy containers, glass, blades and powered tools before starting.

Do not taste a suspect chemical mixture or wine contaminated by unsafe materials to decide whether it is safe. Seek qualified advice when the cause or remedy is uncertain. Illustrations support the written instructions; they are not diagnostic evidence or engineered construction drawings.

Make and serve alcohol only as legally permitted. Drink responsibly, and do not operate machinery or drive while impaired. No health benefit is promised. The author and publisher cannot guarantee outcomes or the suitability of any method for a particular reader's circumstances.

A note before the first vine

A backyard vineyard begins with a hopeful question: could that sunny patch behind the house become wine? The answer is often yes, provided the question is followed by several less glamorous ones about drainage, winter temperatures, pruning, clean equipment and where a full fermenter will stand. This book takes those questions seriously without requiring you to take yourself too seriously.

The goal is a useful, enjoyable vineyard and sound wine made at a scale that fits your life. You may eventually manage several rows and a substantial home cellar. You may prefer a few vines and a handful of bottles. Both are complete versions of the project. The grapes do not inspect the size of the winery before deciding whether to ferment.

French hybrids are central here because they offer important possibilities beyond the familiar European wine grapes. The book also distinguishes later American cold-climate hybrids, modern resistant European selections and a few regional alternatives. These categories overlap in ancestry and purpose, but they are not interchangeable. A grape that survives a northern winter may be unsuitable for a warm region with Pierce's disease, and a grape praised for disease resistance may still require a demanding protection program in a humid yard.

I prefer a beginner's guide that explains the reason for a step as well as the step itself. Grapes vary too much for one recipe to remain correct everywhere. The measurements and worked examples are intended to make those differences manageable. When the fruit arrives with more acid, less sugar or a different crop than expected, you should be able to understand the next decision instead of searching for a new superstition.

Read Part One before planting. Its chapters move from site and plant biology through establishment, management, harvest and propagation, with substantial white- and red-hybrid guides. Read the opening cellar chapters before the first harvest, even while the

vines are young. Part Two explains equipment, sanitation, analysis, fermentation, maturation, stability and bottling, then applies the methods at several home scales.

The cultivar chapters emphasize named grapes that a home grower is likely to encounter in nurseries, regional vineyards or historical references. No single practical book can describe every numbered seedling and every new breeding release. The source guide and nursery appendix show how to investigate additional selections and verify current availability. Where local evidence is limited, a small trial is more honest than a promise.

Measurements use liters and grams for most cellar calculations, with US customary equivalents where useful. A gallon means a US gallon unless explicitly stated otherwise. Example values illustrate decisions; they are not mandatory targets for every cultivar or vintage. Product formulations, plant rights, pesticide registrations and laws can change, so current labels and official local requirements govern their use.

The technical drawings and photorealistic renderings explain structures, procedures and stages of growth. They are instructional illustrations, not evidence for identifying an unknown cultivar or diagnosing a diseased plant. Trellis drawings show concepts rather than engineered construction plans. Compare them with the actual vine and the accompanying instructions.

Keep a notebook from the beginning. It will remember the vine's name, the harvest chemistry and the addition you were certain you would never forget. Over time it becomes the most personal part of the project: a record of the place, the seasons and the wines you learned to make there.

Daniel Storming

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PART ONE

Creating a backyard vineyard

Site, vines, seasons and harvest

CHAPTER 01

The vineyard begins at home

The first useful piece of vineyard equipment is a chair. Put it where you think the grapes should go, sit down, and watch the light. Notice the shade sliding across the lawn, the low place where water collects, the gate through which everything will have to travel. A vineyard begins with observation. Buying vines is the enjoyable part that comes after it.

You do not need an estate. You need a patch of suitable ground, a grape that belongs in your climate, and a willingness to do small jobs before they become large ones. A dozen well-managed vines can teach you more than a hundred neglected ones. The ambition is not to imitate a photograph of Burgundy. It is to grow sound fruit on the property you actually own and turn that fruit into wine you are pleased to pour.

This book joins two activities that are often taught separately. Viticulture is the growing of grapes; enology is the making of wine. In a backyard they meet at the kitchen door. Decisions about variety, crop load, shade, disease and harvest become decisions about acidity, alcohol, aroma and stability. A cellar technique cannot reliably repair a year's worth of poor fruit. Equally, excellent grapes can be spoiled by an unwashed hose.

Decide what success means

Write a plain description of the wine you would like to make. Perhaps it is a fragrant white for summer dinners, a bright red for pizza, or a dry rosé that has no need to apologize for being pink. Then decide what you are willing to do to make it. Someone who enjoys pruning but travels through harvest needs a different plan from someone who likes cellar work and has little outdoor space.

Separate a drinking goal from a production goal. Thirty bottles of good wine are a more sensible first objective than a barrel. A barrel is not simply a romantic wooden container. It is a commitment to enough wine to fill it, enough matching wine to top it, and enough attention to keep it sound. The accessories begin arriving before the romance has taken its coat off.

The household also matters. Vines occupy space for years. The harvest arrives when the weather decides, sometimes on a weekday. Equipment needs storage; fermentation needs ventilation; bottles need somewhere cool and secure. Discuss those realities before a trellis becomes a permanent feature of the view. Keep children's play areas, pets, footpaths and neighboring property in the design from the beginning.

Start with a learning vineyard

For many beginners, eight to twenty vines is a reasonable scale to investigate, not a universal recommendation. Your usable space, local yield, desired wine and ability to manage the crop determine the number. Planting two suitable varieties in useful groups usually teaches more than collecting one vine each of twelve varieties. A single vine may produce too little fruit for a convenient separate fermentation, and its performance tells you little about variation within a planting.

Buy grapes or juice while the vines establish. This is not cheating. It separates two learning curves. You can learn to clean, measure, ferment, rack and bottle while the young plants build roots and trunks. When your own harvest arrives, it should not also be your first encounter with a hydrometer.

A small project can later become a larger one. Reserve an expansion area if the site permits it, but make the first block manageable. Keep room to turn with a wheelbarrow, stretch bird netting and reach the back side of every canopy. A vineyard with no working space is a hedge with administrative problems.

The route from grass to glass

The establishment phase begins before planting. Observe the site across seasons, investigate restrictions, test soil, choose varieties and design the trellis. Remove serious perennial weeds and correct drainage problems that can genuinely be corrected. Order healthy, correctly identified plants early enough to obtain the desired material rather than whatever remains in a clearance sale.

The first growing season is principally about roots and structure. Do not demand a meaningful crop from a struggling young vine. The second season may permit a modest harvest from a strong plant, but vine development governs the decision. A vine does not read the calendar on its nursery invoice. A fuller crop often comes in later seasons after a sound framework has developed.

Thereafter the vineyard follows a recurring rhythm: assess winter injury; prune; manage shoots; protect the crop through vulnerable growth stages; adjust canopy and crop; sample ripening fruit; harvest; and preserve healthy leaves long enough to replenish the vine. The cellar has its own rhythm: prepare; process; ferment; assess; stabilize; age; bottle; and keep records that allow the next wine to be better.

A little arithmetic before a large purchase

Wine yield varies with grape variety, condition, pressing, sediment losses and style. For planning only, assume that approximately 15 to 18 pounds of sound grapes might be required per finished US gallon. Treat that as a deliberately conservative working range to replace with your own records, not a promise of extraction. One US gallon is 3.785 liters and holds roughly five 750-milliliter bottles before bottling losses.

Suppose your goal is 30 bottles. That is 22.5 liters, or about 5.94 US gallons, in bottles. At the planning range above, roughly 90 to 107 pounds of usable fruit would be involved. A mature planting that actually averages 10 pounds of usable fruit per vine would need about nine to eleven productive vines for that target. But

losses, weak plants and uneven years make a reserve sensible. You should not infer that every variety on every site will yield 10 pounds.

Three assumptions must remain separate: fruit per vine, finished wine per pound, and losses after fermentation. Record them separately. Otherwise a disappointing yield becomes an argument with the calculator when the real issue was rot, a timid press cycle, or three unusually thirsty tasting sessions.

Read in order, then use as a reference

Part One follows the life of a planting. Read its site, climate and selection chapters before you buy. The white and red hybrid chapters are substantial references: use them to form a shortlist, then verify that shortlist locally. The propagation chapters explain how to multiply suitable material without confusing a rooted cutting with a clean, legal, correctly identified plant.

Part Two follows the wine. The measurement chapters are worth reading before any recipe. A recipe tells you what someone intended to make; measurements tell you what is actually in your vessel. The same workflow can serve a one-gallon trial and a much larger home batch, but heat removal, lifting, oxygen exposure and precision change with scale.

The illustrations are teaching aids. Vineyard diagrams show relationships rather than engineered construction specifications. Chemistry examples are worked calculations rather than instructions to add a substance blindly. Supplier information belongs to a changing market; verify current stock, shipping permissions and plant status before ordering.

A good beginner is not someone who never makes mistakes. It is someone who notices a mistake while it is still inexpensive, writes down what happened, and resists improving the evidence afterward.

What a grapevine is doing all year

A grapevine is a perennial plant that renews much of its productive canopy each season. Understanding the age of its wood makes pruning far less mysterious. The permanent trunk carries one or more arms, often called cordons. The brown stems that grew during the previous season are one-year-old canes. In spring, buds on suitable one-year-old wood produce green shoots, and those shoots bear the current season's leaves and clusters.

That distinction deserves to settle in. The grape clusters you harvest generally form on current-season shoots arising from buds on last season's wood. Old trunks and cordons provide a framework; they are not themselves a permanent rack of fruiting buds. Pruning renews productive positions while keeping the plant within the space you have assigned it.

Roots, trunk and transport

Roots anchor the plant and obtain water and nutrients. Fine roots are particularly important for absorption, while larger roots provide structure and storage. Healthy roots need oxygen as well as moisture. Saturated soil can therefore injure a vine even when the leaves appear to be demanding water. A plant in a puddle does not automatically have a useful water supply.

The trunk and cordons contain conducting tissues that move water, minerals and products of photosynthesis. Damage to those tissues can explain why a vine suddenly wilts, develops a weak arm or performs poorly after winter. A healthy-looking patch of bark does not prove that the entire trunk is functional. When one side consistently fails, investigate the structure rather than simply adding fertilizer.

The graft union, when present, joins the chosen fruiting variety to a rootstock. Shoots below that union belong to the rootstock. They are not spare copies of the named variety. On an own-rooted plant, shoots arising from the crown are usually the same cultivar,

assuming the original plant was correctly identified and has not acquired a separate seedling at its base.

Buds contain next season's possibilities

A grape bud is more complicated than a single miniature leaf. The compound bud commonly contains a primary growing point and secondary and tertiary growing points. Their survival and fruitfulness vary with cultivar and conditions. Winter cold may kill a primary bud while leaving a secondary bud alive. A vine can therefore leaf out and still produce a much smaller crop than expected.

Bud fruitfulness is influenced during the preceding growing season. Shade, vine imbalance, poor leaf health and other stresses can affect the following year's crop. This is one reason a neglected canopy can have consequences long after the current grapes have been picked. The plant is working on more than one season at once.

Not every visible bud deserves to be retained. On an established plant, sound, well-positioned, appropriately mature wood is more useful than a tangle of thin shaded canes. Very thick, unusually vigorous canes may also be poor choices for particular purposes. Size alone does not indicate quality. In vineyards, as elsewhere, a great deal of confidence can be attached to the wrong structure.

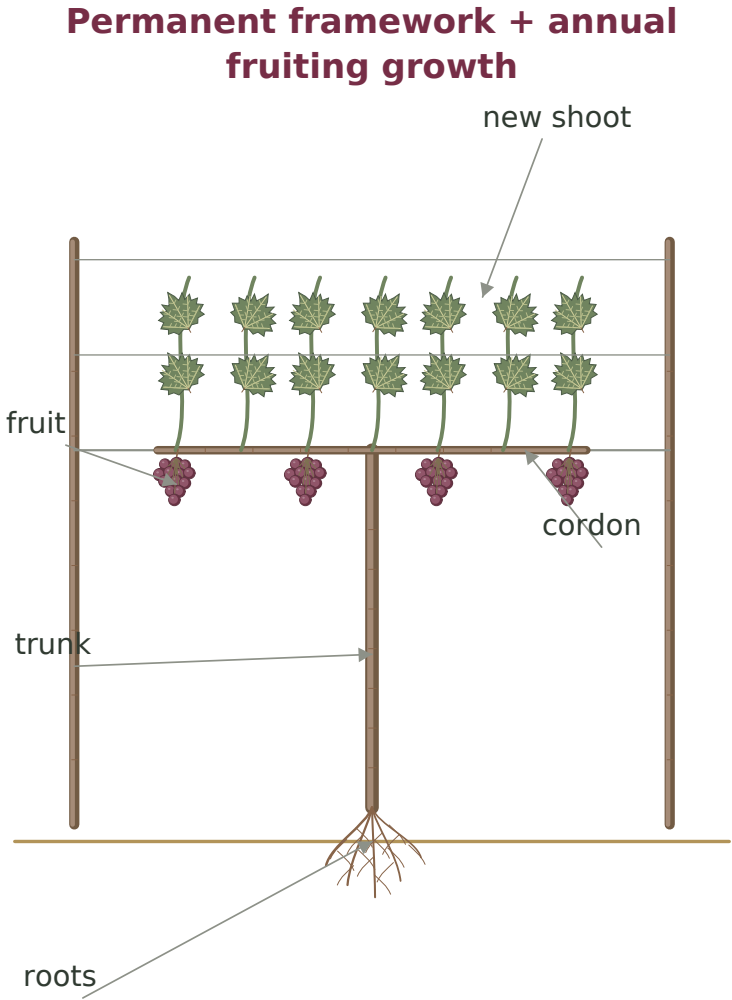
From budbreak to bloom

As temperatures rise and dormancy ends, buds swell and green growth emerges. This is budbreak. New shoots can be injured by frost even on varieties whose dormant wood survives severe winters. Winter hardiness and spring frost resistance are different properties. A cold-hardy variety that starts early may be a poor choice for a frost pocket.

Shoots extend rapidly under favorable conditions. Leaves expand, tendrils reach for support and flower clusters become visible. Before bloom, the canopy should be sufficiently organized that air and any necessary protective treatment can reach the

ILLUSTRATION 01

The parts of a productive vine



Fruit grows on the current season's shoots arising from buds on one-year wood. Permanent wood supports that annually renewed growth.

developing clusters. Trying to create order after the shoots have interlocked is possible, but it is not a particularly enjoyable way to spend a Saturday.

Most commonly grown wine grapes are self-fertile, but there are exceptions. St. Pepin, discussed in the white-grape chapter, requires a suitable pollinizer. A nearby vine is not automatically sufficient; flowering overlap and placement matter. Check a cultivar's reproductive requirements rather than applying a general rule to every grape sold for wine.

Fruit set and berry growth

After successful pollination and fertilization, some flowers become berries. The proportion that sets is affected by weather, cultivar and vine condition. Poor fruit set can leave loose clusters; some cultivars naturally produce loose clusters that are quite useful in humid places. A compact, photogenic bunch is not automatically the best bunch to grow.

Early berries are green, firm and acidic. During this period, disease prevention remains important. A fruit infection may begin before its effect becomes obvious. Waiting for mature grapes to show symptoms is a poor substitute for protecting susceptible growth at the appropriate time.

As berries grow, the vine divides resources among shoots, roots, developing fruit and reserves. Excess crop can delay ripening and weaken preparation for winter. Too little crop on an excessively vigorous vine can also leave an unruly canopy. Balance is not a mystical state. It is a practical relationship among the amount of leaf area, the strength of the vine, its available water and nutrients, and the fruit it is carrying.

Veraison and ripening

Veraison is the transition into ripening. Red varieties develop color; white varieties soften and change translucency and tone. Sugar rises, acidity changes and flavor develops. Color alone does not establish harvest readiness. A dark berry can still be unripe in the ways that matter to wine.

Ripening is not perfectly uniform. Exposed and shaded clusters differ; early and late shoots differ; berries within a single bunch differ. Representative sampling is therefore essential. Picking the sweetest berries you can find produces an excellent report and a misleading harvest decision.

After harvest, remaining healthy leaves continue to matter. They support reserve replenishment and maturation of tissues before winter. Abandoning disease management immediately after picking may compromise next year's performance. The fruit has left, but the vine has not gone on holiday.

Dormancy is active preparation

As the season closes, growth slows, tissues mature and cold acclimation develops. Abrupt cold, fluctuating temperatures, poor leaf health or excessive late growth can interfere with the result. Hardiness is dynamic. A temperature survived in midwinter may injure the same vine during autumn acclimation or spring deacclimation.

Keep records of budbreak, bloom, veraison, harvest and leaf fall. These stages provide more useful management anchors than dates borrowed from another state. A calendar tells you when you expected something. Phenology, the timing of biological events, tells you when the vine actually did it.

At the end of your first full season, you should be able to point to roots, trunk, cordon, cane, spur, node, internode, bud, shoot, tendril and cluster. That vocabulary is not an entrance examination. It simply allows the next instructions to mean one clear thing instead of several plausible ones.

Turn the wish into a production brief

Before buying anything, write a one-page description of the vineyard you intend to run. Give it a size, purpose and limit: 'Eighteen vines in three short rows, making two small lots of still wine for household use. I can tend them on weekday evenings, but cannot be away every autumn weekend.' Include what would justify expansion and which services you will buy, such as soil testing or occasional wine analysis.

Walk the proposed rows with a wheelbarrow before driving permanent posts. Leaves, netting, anchors and the person doing the work all need room. A wheelbarrow is a wonderfully inexpensive design tool and requires no software subscription.

Work backward from bottles

A bottle goal becomes useful when it is translated into liquid volume, processing loss and fruit. Forty-eight standard 750 mL bottles hold 36 liters. That is about 9.51 US gallons in the bottles. If you choose an illustrative planning allowance of 15 percent loss between the volume of processed juice you begin tracking and bottling, the starting liquid volume would be 36 divided by 0.85, or about 42.4 liters. This allowance is an assumption to investigate, not a property of grapes. A heavily settled white juice, a red lot with a large press loss and a wine receiving repeated bench trials will not have identical recovery.

The familiar planning estimate of roughly 15 to 18 pounds of grapes per finished US gallon gives a different route to a first fruit budget. For 9.51 finished gallons, it suggests about 143 to 171 pounds of grapes. Do not add the liquid-loss allowance a second time if the fruit rule already refers to finished wine. That common mistake makes the same loss appear twice in the calculation. Record the basis beside every yield figure: grapes to pressed juice, juice to finished wine, or grapes to finished wine.

Suppose an established eighteen-vine planting eventually supplies 160 pounds of sound fruit. At sixteen pounds per finished

gallon, the planning estimate is ten gallons, about 37.9 liters or fifty 750 mL bottles before the unavoidable fraction at the end of filling. That is a scale illustration, not a promise of yield per vine. Some young vines will produce nothing; winter injury, thinning, wildlife and sorting can reduce an apparently generous crop. A vine-count calculation should therefore use a range rather than a single flattering number.

Now reverse the calculation. A harvest of only sixty pounds at the same assumed conversion gives about 3.75 gallons, or 14.2 liters. A single five-gallon carboy will be too large for storing that finished lot. The solution is a set of suitable smaller vessels, a different batch plan, or purchased fruit of known quality. It is not to leave the wine under a large air space because the glass was already paid for.

Separate vineyard capacity from cellar capacity

A vineyard has an annual rhythm; a cellar contains overlapping vintages. Last year's wine may still occupy the vessels you expected to use at harvest. Draw a simple vessel calendar with months across the top and one line for each container. Mark fermentation, settling, aging and the date the vessel is expected to become available. Put a question mark beside an uncertain bottling date. A question mark is more useful than a confident date that depends on unfinished fermentation or an unresolved haze.

Capacity is also a sequence, not just a total. A red fermenter must accommodate skins, seeds, carbon dioxide and cap work, whereas the later storage vessel holds pressed wine. Adding the nominal capacities of a bucket and a carboy does not prove that the two form a workable pair. Sketch the transfer between them, estimate the volume at that stage, and identify where press fractions and top-up wine will go.

Learn the vine with a seasonal observation exercise

Choose one healthy vine, or examine a nursery plant or a well-identified local example, and follow the connection from the root crown to the tip of a shoot. Find the permanent trunk, the older branch or cordon, the one-year cane and the soft current growth. The names are not a vocabulary test. They tell you which tissue can perform which job when pruning time arrives.

In summer, mark a few current shoots with loose, durable identifiers that will not constrict them. Note where their clusters occur, which parts remain shaded and how their growth changes through the season. After leaf fall, look for the same shoots. They are now canes. Next spring, the buds on those canes can produce new shoots. Following a few marked pieces of wood through this cycle makes the pruning chapters much easier to understand than memorizing a diagram once in winter.

Watch the difference between shoot length and useful maturity. A very long green shoot is not automatically the best future trunk or fruiting cane. Its thickness, internodes, position, health and degree of wood maturation matter. Likewise, a short shoot is not necessarily defective if it occupies an appropriate position and has developed sound wood. Plant training is a selection process, not a contest to keep the largest object.

A bud also deserves close attention. Observe an intact bud externally with a hand lens before attempting any destructive examination. Winter bud dissection is a separate diagnostic procedure, covered later. Do not cut open every bud on a young vine merely to confirm that the book is correct. The vine needs some of them for its own research program.

Give every vine an address

An eighteen-vine planting can be mapped in minutes. Label rows A, B and C, and number positions from the same end of each row. A1 should always mean the same physical position, regardless of the direction from which you enter the yard. Draw the compass direction and a permanent landmark on the map. An instruction such as 'third vine from the left' expires the moment someone stands on the other side.

For each position record cultivar, nursery, purchase lot, planting date, whether it is own-rooted or grafted, and the rootstock if supplied. Keep the invoice and plant tag. Add later observations without overwriting the original identity. If a vine is replaced, record the replacement as a new plant at an existing address rather than pretending the row has always contained the same material.

A small trial becomes far more informative when its records distinguish vines. If four plants of one cultivar perform poorly, did all four arrive in the same shipment? Are they in the wet corner? Were two damaged during installation? The map helps separate a cultivar problem from a location or handling problem. Without it, every explanation begins with memory, which has a habit of improving its own performance after the event.

Carry this identity into the cellar. A lot name might contain the harvest year, cultivar and row group. The label can be short, but the notebook should explain it. If two cultivars are combined at the crusher, record their weights and condition before mixing. Once they have become one must, you cannot recover the original trial simply by giving the resulting wine two names.