First Season in the Dragoons

A Narrative Companion to the Library

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From standing start to first jar in twelve months

Contents

RELATED GUIDES

This narrative companions the following reference guides — read this for the story, flip to them when you want the depth: - **Guide 1 — Hydroponic Primer & Library Map** · the front door + master multi-crop calendar - **Guide 2 — Peppers in the Dragoons** · the cornerstone fruiting-crop guide, with the full Rocoto protocol - **Guide 3 — Bato Bucket Hydroponic Systems** · system build, water-treatment protocol, operations - **Guide 4 — Hydroponic Nutrients** · Masterblend, DIY nutrients, pH adjustment, indoor/LED - **Guide 5 — Grapes in the Dragoons** · Cochise County viticulture, VSP trellising, late-pruning frost strategy - **Guide 6 — Cool-Season Crops** · brassicas, alliums, greens, roots — the October-through-May complement - **Guide 7 — Warm-Season Companions** · tomatoes, cucurbits, beans, corn, sweet potatoes - **Guide 8 — Herbs in the Dragoons** · annual + perennial · soil & hydroponic - **Guide 9 — Backyard Orchard in the Dragoons** · figs, pomegranates, jujubes, stone fruits, pome fruits - **Guide 10 — Pest, Disease & Wildlife** · IPM + the pest/disease catalog + javelina/gopher/deer/bird exclusion - **Guide 11 — Foundations: Soil & Seed** · soil-building, composting, seed-starting under LED, propagation, transplanting - **Guide 12 — Harvest, Preservation & Storage** · canning, fermenting, drying, ristras, root cellaring - **Guide 13 — Water in Cochise County** · well sourcing, water testing, treatment, rainwater, drip-irrigation, conservation - **Guide 14 — Season Extension Structures** · cold frames, low tunnels, row cover, hoop houses, high tunnels

About this book. The fourteen guides on the shelf next to this one are reference material. They are organized by topic, dense with tables, and built to be looked up. This one is different. It is a story — a month-by-month walk through a first year in the Dragoons, in the voice of someone who has done it and is showing you around. We will tell you what we do, what we have lost, and what we wish we had known. When you want the why behind a number or the recipe behind a protocol, we will point you at the guide that holds it. Read this once, top to bottom, before you read any of the other guides. Then keep it on the kitchen counter, not the shelf.

October — the month you arrived

The October morning sun on the east side of the Dragoons comes up later than you expect. At 4,700 feet the air is thin enough that the night cold lingers in the grass until the sun is well over the ridgeline, and the cottonwoods along the wash are just starting to turn — leaves still on, but yellowing at the edges, the kind of yellow you only notice when the light hits them at a slant. The first morning you go out in a sweater you have not worn since you left wherever you came from. By eleven you have taken the sweater off. By two it is in the seventy-fives. By five-thirty it is back on. This is the diurnal swing, the thirty to forty degrees between dawn and noon that the climate table in Guide 1 lists as a single number and which, lived in, is the first thing the Dragoons teach you.

You arrived between summer and winter, which is the easiest time to arrive. The brutal pre-monsoon heat is months gone; the deep January cold is months away; the monsoon storms have wound down to a few last gentle afternoons of cloud. The garden you inherited or have not yet built is in a quiet, generous mood. So is the soil. Walk it.

We walk it together. We are not yet planting anything — we are looking. We notice that the previous owners left a lemon tree in a half-barrel by the patio that has not been watered in maybe three weeks; the leaves are still on but the soil is bone dry and the surface has pulled away from the rim of the pot. We notice that the south-facing fence line gets sun from about nine until four — that's the south bed, eventually. We notice that the wash drains east, that the area behind the shed is in afternoon shade, that there is a flat patch with what looks like decent topsoil between the propane tank and the apricot tree, and that yes, that is an apricot tree, and yes, those are deer tracks under it. We notice the caliche. You will notice the caliche the first time you put a shovel in. Half an inch down and the shovel rings. That's not roots, that's calcium carbonate cemented into a layer that the rain over geologic time has not been able to wash through. Guide 1 §3 talks about it. Guide 11 talks more about it. For now, just notice where it is.

The first move we make in October is small and it is the right move: we plant garlic. We do this for three reasons. First, garlic is forgiving — you can plant it badly and it will mostly do its thing anyway, which is the right kind of beginner's crop. Second, the act of planting a bulb that you will not pull from the ground for nine months is the right kind of orientation. It commits you to the place. And third, and most practically, October 15 to November 15 is the canonical window for hard-neck and soft-neck garlic in the Dragoons, and if we miss it we miss the whole year.

We get a pound of *Music* (a hard-neck porcelain, the most reliable Dragoon variety in our experience) and half a pound of *Inchelium Red* (a soft-neck that braids nicely and stores until next August). We break the heads into cloves the morning we plant — not

the night before, not days before, because separated cloves dry out fast. We pick the biggest cloves. The little ones go in the soup pot. We dig a trench three inches deep along the edge of the south bed, drop a clove in every four inches with the pointy end up, cover them with two inches of soil, and water once. Then we mulch — four inches of straw, over the whole row, to keep the soil temperature from swinging too hard through the next few weeks while the cloves root. That's it. We will not see them again until late February, when little green shoots come up through the straw.

While we are at it, we tuck in a row of overwintering onion sets — we got *Walla Walla* and *Top Keeper* from the feed store in Sierra Vista — and a few shallot sets. The onion-set window in the Dragoons actually closes a little earlier (August 25 to September 15 is the canonical range), so if it is mid-October already, the onions are pushing the late edge; do not be precious about it, plant them anyway and they will mostly catch up.

Then we go to the lemon tree. The lemon tree is going to make it. We water it slowly — a slow soak, a five-gallon bucket emptied at the base over fifteen minutes, so it sinks in instead of running off — and we add an inch of compost on the surface. If it has fruit, that fruit is fine. If it does not, that is fine too; lemons in a half-barrel in the Dragoons are a long game. We will move it indoors in November.

What we do not do in October is build everything. We do not lay out the warm-season beds; we do not order seeds; we do not assemble a hydroponic bench. There is no hurry. The good Dragoons gardeners we know all walk the property for a season before they build. We are noticing things — where the sun goes, where the wind comes from, where the water moves when it rains — and the things we notice in October become the choices we make in March. A garden that has been walked for a year before it is built is twice the garden of one that gets built the first week.

By the end of October the cottonwoods are fully yellow and starting to drop. The grass has turned the color of wheat. Some morning soon — late October or early November, it varies year to year — the first hard frost will come, and the tomato vines that were producing two weeks ago at someone else's house will be black. We have not planted tomatoes, so we have nothing to lose. We have planted garlic. The garlic does not care about frost.

RELATED GUIDES

Reference for this month: Guide 6 §3 (alliums and the garlic planting window) · **Guide 13 §15** (the water calendar — how irrigation tapers through fall) · **Guide 11 Part 1** (soil-building in year 1, why compost matters more than fertilizer) · **Guide 1 §9** (master multi-crop calendar; circle October) · **Guide 9 §5** (in-ground citrus, which mostly does not work here — containers only)

November — winter prep and the first hard frost

November in the Dragoons is the month the year actually turns. October is a soft handoff; November is decisive. The hard frost comes — somewhere between October 25 and November 10, almost every year, though it has been as late as Thanksgiving and as early as October 18 in our records. You will know it because the morning after, the basil you forgot about is black, and the squash leaves on the volunteer pumpkin look like wet paper, and the bermudagrass that was still trying to green up gives up and goes tan. Killing frost is its own kind of weather: not just cold but cold enough to rupture the cell walls of anything that did not harden off in time, and you do not get to argue with it.

What we want done before the killing frost arrives is a short list:

We want the last tomatoes pulled green. Anything bigger than a golf ball will ripen on a windowsill in a paper bag. Smaller than that, slice and dry, or fry. (If you have an inheritor garden with tomato vines on it, this is your job week one.) Guide 12 has a whole section on green-tomato preservation — chow-chow, fried green tomatoes, the lacto-fermented green-tomato pickle that is one of the great underrated foods of the high desert.

We want a cold frame built. Not a hoop house, not a tunnel — a small cold frame, four feet by eight feet, set against the south side of the shed or the house. We build it out of three pieces of two-by-twelve cedar, a salvaged storm window, and a hinge. We bank straw around the outside. We seed it with spinach and *mâche* (corn salad — the most cold-hardy salad green there is, a French winter staple, eats like butter lettuce, asks for nothing) and a couple of rows of arugula. The cold frame will get us salad through February. The full cold-frame protocol with sash angles and venting is in Guide 14 §2. For now, our cold frame is rough and it works.

And we want a compost pile started. This is one of the unsung first moves in a Dragoons garden. The native soil here is one to two percent organic matter — enough for grasses, not even close to enough for vegetables. Every bed we build over the next twelve months is going to want two to four inches of finished compost worked in, and the only way to get that volume affordably is to make it. So in November we start. We pile the cottonwood leaves we rake. We pile the kitchen scraps. We pile the spent tomato vines (chopped). We pile any straw the rabbits did not eat. Guide 11 Part 1 lays out the alkaline-Dragoons compost program in detail — the short version is that our brown-heavy carbon material is fine, our green-heavy nitrogen sources are everything that did not die from frost, and we want the pile to be roughly the size of a refrigerator before it will heat up properly.

The first hard frost is also when we learn how the property sits in a frost map. Cold air sinks. The low spots — the wash, the corner of the yard down by the gate, the long shadow of the propane tank — frost first and frost hardest. The bed against the

south side of the house, where the masonry holds heat overnight, frosts last and least. Walk out the morning after the first hard frost and look at where the ice is and where it is not. That map matters. It will tell you where the apricot bloom is going to be killed in February, where the spring brassicas can go out two weeks early, and where you absolutely do not want to put a tomato in May.

There is one more November move worth naming. We take stock of the trees. If the property has a fig, a pomegranate, a jujube, an apricot, an apple, a pear, a persimmon — any backyard fruit, in any condition — we walk each one with a clipboard. We note species, approximate age, last year's vigor, any obvious damage, whether it set fruit this year. We do not prune yet (pruning is January's job in the Dragoons; bareroot stock is also January). We just note. Guide 9 — the orchard guide — is going to be the single most useful book in the library if there are mature trees on the property, and the inventory we make in November is what we open it to first.

A note about the wildlife. The first year you will lose something to javelina. Everyone does. They smell the compost; they smell the lemon tree; they smell the fact that you exist, and they come investigate at three in the morning. The damage is usually proportional to how easy you made it: a covered compost is fine; a tarp half over a pile is an invitation; an open pile is a buffet. If you start seeing rooting damage in the yard, read Guide 10 §12 on javelina exclusion sooner rather than later, and accept that the answer involves real fencing, not aspirational fencing. We have learned this both ways.

By the end of November the killing frost has come, the cold frame is seeded, the compost pile is hip-high and starting to settle, and the property is quiet. The cottonwoods are bare. The grass is tan. The morning low is in the twenties more nights than not. The garden, properly, sleeps.

RELATED GUIDES

Reference for this month: Guide 14 §2 (cold-frame construction, sash angles, venting) · **Guide 11 Part 1** (composting in dry climates, the alkaline-Dragoons amendment program) · **Guide 12** (green-tomato preservation, lacto-fermentation basics) · **Guide 10 §12–§17** (wildlife exclusion: javelina, gopher, deer, bird) · **Guide 9 §1–§2** (orchard inventory and what to look for in inherited trees)

December — dormancy and planning

December is the slowest month. The garden is mostly asleep. The cold frame is producing — a couple of cuts of arugula a week, the spinach steady, the *mâche* coming on — but outside of that, the days are short, the morning lows are routinely in the twenties, and the work has moved indoors. This is the right pace. The Dragoons reward people who plan in December the way they punish people who improvise in May.

We sit at the kitchen table with a stack of seed catalogs and Guide 1 open to the master multi-crop calendar at section 9, and we plan. The catalogs that matter most for the Dragoons: **Native Seeds/SEARCH** out of Tucson is the canonical source for heritage Sonoran varieties — *Hopi* corn, *tepary* beans, *Chiltepin* peppers, the dryland staples that have been grown in this region for centuries and that grow here, still, with very little fuss. We also pull from **Johnny's Selected Seeds** for the standard improved varieties (the *Jet Star* tomato, *King Richard* leek, *Music* garlic if we want a fresh source), and from **Baker Creek** for the oddballs we want to try. There is a list in Guide 11 of every source we trust; do not over-order from the catalogs you do not know yet. The first year, the temptation is to order everything that sounds interesting. The discipline is to order maybe twenty things and grow them well.

The other December move is the soil test. The University of Arizona Cochise County Cooperative Extension office at 1140 N Colombo in Sierra Vista will hand you a bag and a form; you fill the bag from each bed (or each planned bed) you intend to work, six inches deep, and send it off. The results come back in a few weeks and tell you the pH, the macronutrients (N, P, K), the organic matter percentage, and the cation exchange capacity. We expect the pH to read between 7.5 and 8.5; we expect organic matter to read between one and two percent; we expect phosphorus to read low; and we expect calcium to read high (the caliche is generous that way). The test confirms what is in the table in Guide 1 §3, but it confirms it for *your* dirt, which is the version that matters. The amendment plan that comes out of the test is in Guide 11.

December is also when we sketch the warm-season beds on paper. Not on the ground yet — on paper. A sheet of graph paper, the property roughed in, the south fence line marked, the sun's noon path marked, the water spigots marked. Where do the four big beds go? Where does the Bato bench go (if we are going to build one)? Where does the herb spiral go? Where are the trellis runs for tomatoes, for cucumbers, for melons? The point of this sketch is not to be right; the point is to make the decisions in December that we would otherwise make in May, badly, in a panic. We make them now, with no time pressure. We change them in February when we know more. By March we have a real plan.

And we prune the fruit trees. This is the one outdoor task that belongs to December and January — dormant pruning. Stone fruits (peach, apricot, plum, almond) get

pruned in late December or early January here, while they are deeply dormant but before the first warm spell tries to push bud break. We do not prune to a hard shape the first year on an inherited tree; we mostly remove dead wood, crossing branches, and water sprouts. Guide 9 §10 has the full annual orchard calendar and Guide 9 §4 covers pruning principles by species. If the apricot has scale or aphid eggs visible on the bark — the bark looks dusty, you see little brown bumps — we mix up a dormant oil spray and do a thorough application on a calm afternoon when the temperature will stay above forty for the rest of the day. The dormant spray is the highest-leverage pesticide event of the year for an orchard; we do it once, in winter, and it saves us most of the summer's trouble.

By the end of December we have a seed order placed, a soil test in the mail, a paper plan for the warm-season beds, the orchard pruned, and the cold frame still producing salad. The compost pile is the size of a hot tub now and slumping in on itself in the middle, which is what we want. The mornings are cold enough that the dog stays inside on her bed until nine. The sun sets at five-twenty, and we do not garden in the evenings; we read.

RELATED GUIDES

Reference for this month: **Guide 11 §5** (seed sourcing — Native Seeds/SEARCH, Johnny's, Baker Creek, the local options) · **Guide 9 §4 and §10** (dormant pruning by species, the annual orchard calendar) · **Guide 1 §2** (the by-goal decision tree, for choosing what to grow first) · **Guide 11 Part 1** (soil-test interpretation, amendment programs by result) · **Guide 13 §3** (irrigation planning for the bed layout you are sketching)

January — bareroot and the first cold-frame greens

The cold-frame greens turn the corner in early January. Something about the day length crossing the solstice and starting back the other way — even though the days are still short, even though the mornings are bitter, the spinach in the cold frame puts on growth. We cut our first real bowl of salad on a January Sunday and eat it in the kitchen with the light slanting in low through the south window and remember why we moved here. Cold-frame salad in the high desert in deep winter is one of the great quiet pleasures.

January is also bareroot month, and if there are fruit trees we mean to add to the property — a second fig, a pomegranate, the *Asian pear* we have been meaning to try — they go in this month while they are still dormant. Bareroot stock arrives in a cardboard box with the roots wrapped in damp sawdust, looking like a stick. The instinct is to disbelieve. The trees look dead. They are not. Bareroot plantings establish faster than container-grown trees and they cost less, but the window is short: late December through mid-February, before the buds break. We dig the hole the day before so the soil is workable and ready (and we hit caliche, and we break through, because we read Guide 9 §3 and we know we have to). We soak the roots in a bucket of water for an hour. We plant level — the graft union (the knobby bend where the rootstock meets the scion) goes above the soil line, not below, this is the thing people get wrong — we water in, we stake against the spring wind, we mulch. The fig and the pomegranate will leaf out in late March. The pear will bloom in April.

The second January move is the long-season indoor seed start. Rocoto peppers (*Capsicum pubescens*, the Andean species with the purple flowers and the surprising hardiness) and habaneros (*C. chinense*, the longest-season common pepper) want to germinate now. They are slow — two to four weeks to break ground for Rocoto, ten to fourteen weeks under lights before they are ready to transplant — and if we wait until February to start them they will not be ready to set fruit before the heat shuts them down. So in mid-January we set up the seed-starting station: a heat mat under a seedling tray, eighty degrees of root-zone warmth, an LED grow light four inches above the tray, sixteen hours of light a day. The whole setup is in Guide 11 Part 2; the per-species germination temperature targets are in Guide 2 §5.2. We sow two cells of *Manzano Rojo* Rocoto, two cells of *Orange Manzano*, two of *Chocolate Habanero*, two of *Aji Lemon Drop*. We do not sow tomatoes yet — those are February. We do not sow *C. annuum* peppers (jalapeño, serrano, poblano, the standard supermarket-style varieties) yet either — those are also February.

The Rocoto seeds germinate at about day eighteen. You will check the tray every morning starting on day seven and see nothing, and you will start to doubt the whole project, and then on day fifteen one will be up, and on day seventeen three more, and by day twenty-one all six are up and you will start to believe again. Pepper ger-

mination is a faith exercise. Guide 2 §5.2 says fourteen to twenty-eight days for *C. pubescens*. It is right.

Outside, January is the coldest month. The morning lows are in the low twenties, sometimes the high teens. We see one or two nights of fifteen degrees in a typical January at this elevation. The cold frame handles it; we throw an old blanket over the sash on the worst nights. The garlic and the onions are deeply dormant under their straw mulch and they are completely fine. The orchard is dormant. The grape vines, if we have them, are dormant and we have not yet pruned them — late January or early February is the canonical Dragoons grape-pruning window, deliberately late to dodge the worst of the frost risk, and the protocol is in Guide 5 §4.

We are also, by mid-January, paying attention to the weather forecast for the first time in a way that matters. The frost-watch begins now, and it will continue, on and off, through April. The forecast is not the news for us; the forecast is the schedule.

RELATED GUIDES

Reference for this month: Guide 9 §3 (bareroot tree planting, hole prep, graft union depth, wind staking) · **Guide 2 §5.2 and §10** (indoor pepper seed starting, the long-season varieties, germination temperatures) · **Guide 11 Part 2** (the LED seed-starting station — lights, heat mat, watering, damping-off prevention) · **Guide 6 §4** (winter cold-frame greens — spinach, *mâche*, arugula, the cold-tolerant lettuces) · **Guide 5 §4** (late-pruning grape strategy, why we wait)

February — the frost-watch month and the first stone-fruit bloom

February is the month the Dragoons surprise people. The light comes back hard — the sun by mid-February is noticeably stronger, the noon shadows shorter, the snowmelt on the high north flanks of the ridge sliding off — and the deciduous trees that have been brown sticks since November start to notice. Almonds bloom first, usually mid-February. Apricots follow within a week, sometimes the same week. The blossoms are tiny and white and unreasonably pretty against the bare branches, and they are also, every year, in mortal danger.

Because February nights are still cold. Twenty-five degrees is normal. Twenty is not unusual. And once an apricot or an almond has broken bud and the flowers are open, those flowers cannot survive twenty-eight degrees for any meaningful duration. A single bad night in the third week of February can take the entire stone-fruit crop. We have lost the apricots three times in seven years. We have also saved them, several times, with the right preparation.

The right preparation is not technology — it is habit. The forecast is checked every evening, religiously. The frost cloth is folded and stacked at the base of each tree, ready to throw. On the nights the low is forecast under twenty-eight, we go out at dusk and drape — cloth over the canopy, weighted at the ground with rocks so the wind does not lift it. Frost cloth alone buys us four to six degrees, which is sometimes enough. On the really bad nights we also fill five-gallon buckets with warm water and set them in the canopy at dusk; the water releases heat as it cools through the night and keeps the immediate microclimate above freezing for several hours. Guide 9 §6 lays out the full apricot-protection ritual including the wind-machine and orchard-heater options that scale up if you are serious; Guide 14 §10 covers the thermal-mass principle for the cold frame and tunnel structures more broadly. The basic point: you cannot stop a hard freeze, but you can buy four or six degrees through the worst of the night, and four or six degrees is the difference between a crop and no crop.

While we are out at dusk on the cold nights, we are also looking at the cold frame. The cold-frame greens are at peak — spinach, *mâche*, arugula, a small head of *Tom Thumb* lettuce — and the cold frame itself is a thermal-mass exercise. We close it tight by four in the afternoon when the sun goes off it, we throw a blanket over the sash if the night looks brutal, and we vent it by ten the next morning even when it is twenty-eight outside, because in full sun a closed cold frame will hit ninety inside in February and cook the lettuce. The venting habit is the single biggest source of dead winter greens; do not skip it. Guide 14 §2 explains why.

Indoors, the pepper seedlings under LED are now an inch or two tall and growing slowly. We pot them up from the original cells into three-inch pots, gently, around mid-February. The Rocotos lead, then the habaneros, then anything else we started

in January. We do not feed them aggressively yet; a half-strength fish emulsion drench once a week is plenty. They are establishing roots, not pushing tops. Guide 2 §5.2 covers the pot-up and the early nutrition.

Mid-February is also when we start the *C. annuum* peppers (jalapeños, serranos, cayennes, poblanos, the bell peppers, the Hatch types) and the tomatoes and the eggplant. These are the eight-to-ten-week-from-transplant crowd. They go on the same heat mat, under the same lights, with the same protocol. By late February the seed-starting station is full: trays of Rocotos, habaneros, *C. annuum* peppers, three or four tomato varieties, a tray of eggplant, a tray of brassicas (cabbage, broccoli, cauliflower for spring transplant out in March), and a tray of leeks. The whole indoor station is humming under the LED. The smell of damp soil and bottom-heated peat is the smell of February in the Dragoons.

We also, this month, sow spring brassicas indoors — broccoli, cabbage, cauliflower — for transplant out in March. These will race against May heat, but with a head start they can be harvested before the bolt. The full spring brassica calendar is in Guide 6 §2.

By the end of February, if the apricot survived, the canopy is in full bloom and the first solitary native bees are working it. If it did not, the canopy is brown and we mourn briefly and move on; the tree will be fine, there will be another year. The garlic shoots are an inch above the straw. The cold frame is overflowing. Days are warm enough by two in the afternoon to take the sweater off; nights are still cold enough that the dog wants to come inside by five.

RELATED GUIDES

Reference for this month: Guide 9 §6 (frost protection for stone-fruit bloom — frost cloth, water buckets, the dusk ritual) · **Guide 14 §10** (thermal-mass principles for cold frames and tunnels) · **Guide 14 §2** (cold-frame venting — when to open, when to close, why ninety inside is a disaster) · **Guide 6 §2** (spring brassicas — timing, varieties, transplant calendar) · **Guide 2 §5.2** (pepper seedling pot-up, the early-feeding regime)

March — the bed-prep month

March in the Dragoons is when the soil wakes up. You smell it before you see it — there is a particular scent that comes out of warming dirt the first day the soil temperature crosses fifty, a kind of mineral-and-mushroom smell that the gardeners we know all recognize without being told what it is. The grass starts to green. The cottonwoods are still bare but their buds are swollen. The wash is dry. The mornings are still cold (the low forties, sometimes a frost) but the afternoons are reliably in the sixties and seventies, and the work shifts back outside.

This is bed-prep month. Whatever soil work the warm-season beds need, it needs to happen now, because by April we are transplanting peppers and by May we are direct-sowing squash and there is no time to rebuild a bed properly once the season starts.

We start with the compost pile. The pile we built in November has had four months to break down, which in the Dragoons cold is not a lot — but the bottom and the middle are dark, friable, sweet-smelling, finished compost. We turn the pile, fork the unfinished outer layer to the middle, and screen the finished compost into a wheelbarrow. We get maybe two cubic yards of usable compost out of a hot-tub-size pile, which is not nothing but is also not enough; this is why we will be making compost all year and importing some from the feed store on the side. Guide 11 Part 1 has the complete compost program, including the alkaline-Dragoons amendment program (gypsum for the sodium, elemental sulfur for the pH, blood meal for the nitrogen) that we work into every bed before we plant.

For each bed we plan to grow warm-season annuals in, the protocol is the same: fork it (we are loosening, not turning, so we do not invert the soil profile), spread two to four inches of compost across the surface, broadcast the amendments from the soil-test recommendation, and work them into the top four inches with a digging fork. Then we water it well and let it sit a week. Sulfur in particular takes weeks of bacterial action to lower the pH; it needs to be in place well before we plant. Guide 11 explains the chemistry; the short version is, do not skip the sulfur if your bed reads above pH 7.5, and do not expect it to work in three days. It works over months.

While the beds are settling, we set up the irrigation. This is the year-one move that pays for itself for the next decade: a proper drip system, not a sprinkler. The water situation in Cochise County does not forgive sprinklers. Our well water is hard and high-TDS, we are watering a small number of high-value plants, and a sprinkler wastes water and salt-burns the leaves. So we run half-inch poly mainline along each bed, with quarter-inch drip line stubbed off it, with emitters at the plant positions. A *RAINPOINT* battery timer at the spigot handles the schedule. The whole drip-design discussion is in Guide 13 §11, with emitter sizing tables and a worked example for a four-bed garden. Set it up now, in March, when the beds are empty and we can lay

out the lines without working around plants.

The Bato bench, if we are building one, also goes up in March. The bucket-by-bucket build, the elevation, the drainback geometry, the manifold plumbing — Guide 3 is the canonical reference. The single non-obvious choice is where to put the reservoir, because in the Dragoons the reservoir temperature is the number-one variable that decides whether the system works. A reservoir in full sun in June is going to hit ninety degrees and root-rot the plants; a reservoir in afternoon shade behind the shed, with insulation around the tank, will stay in the seventies through the worst of pre-monsoon heat. Plan the shade now, in March, when you do not yet know what June will feel like, but trust us — afternoon shade for the reservoir is non-negotiable.

The grape vines, if we have any, were pruned in late January or early February (the canonical Dragoons window — deliberately late to dodge frost, see Guide 5 §4). In March they are still mostly dormant, but bud break is coming, often the third or fourth week of March. The day the buds break, frost risk becomes catastrophic — once a grape shoot has emerged, even a light freeze ends that year's crop. So the frost cloth that we have been throwing over the apricot in February gets repurposed for the vines in late March. Guide 5 §11 has the full early-season grape protocol.

Indoors, the seed-starting station is getting crowded. Tomatoes are six inches tall and starting to look leggy if we are not careful. The peppers are three to six inches, looking like little bushes. The brassicas we started in mid-February are ready to transplant out — the first warm-season-adjacent move of the year — and we harden them off over the last week of March (an hour outside on day one, two hours on day two, building up over a week before they go into the ground). They go out in mid-March under row cover and grow slowly through April toward a May harvest. Guide 6 §2 has the timing; Guide 11 §18 covers the hardening-off process.

By the end of March, the beds are amended and resting, the drip is laid, the Bato bench is assembled and ready for water testing, the spring brassicas are in the ground, the grape buds are visibly swelling, the peppers and tomatoes indoors are getting big, and the apricot — if she made it — is past bloom and into leaf-out. There is a smell of warming earth in the morning that there was not in February. The garden has woken up. The work is just about to start in earnest.

RELATED GUIDES

Reference for this month: Guide 11 Part 1 (soil-building, the alkaline-Dragoons amendment program — sulfur, gypsum, compost, blood meal — and why sulfur is a March job) · **Guide 13 §11** (drip-irrigation design, emitter sizing, the worked Dragoons example) · **Guide 3 §3** (Bato bench construction, reservoir placement, the temperature-management problem) · **Guide 5 §4 and §11**

(grape pruning window and bud-break frost protection) · **Guide 11 §18** (hardening off — the one-week ramp-up that prevents transplant shock)

April — last frost and transplant season

April is the biggest week of the calendar, and what makes it hard is that the biggest week is not the same week every year. Last frost in the Dragoons is somewhere between mid-March and early April at the lowest elevations, and somewhere between early April and mid-April at our elevation around 4,700 feet, and sometimes — once in maybe seven years — there is a freak frost in the last week of April or even the first week of May. So April is a watching month. We watch the soil temperature with a meat thermometer pushed four inches into the bed. We watch the ten-day forecast. We watch the moon, half-superstitiously. And when the soil reads sixty and the forecast shows ten clear nights ahead, we transplant.

Peppers go out first, usually around April 20 to April 30 at our elevation. The Rocotos that we started in mid-January are now twelve to sixteen inches tall, hardened off over the previous ten days, with thick stems and dark leaves and the first flower buds visible at the upper nodes. We transplant on a cloudy afternoon or in the last hour before sunset — never in midday sun, never in midday wind. The UV here is twenty percent stronger than at sea level and it will scorch a freshly transplanted seedling in an hour if you let it. We dig a hole twice as wide as the rootball and just as deep; we pinch the lowest pair of true leaves off the seedling and bury the stem up to that node (peppers root from the stem, like tomatoes, and a deeper plant is a tougher plant); we water in with a dilute fish-emulsion drench (one tablespoon per gallon) and we walk away. No nitrogen fertilizer for two weeks. The plant needs to root, not grow.

Tomatoes follow within a few days of the peppers. Same protocol, same caution about the sun and the wind, same fish-emulsion water-in. The full tomato chapter is in Guide 7 §3 — variety selections (we lean on *Jet Star*, *Cherokee Purple*, *Sungold* in cherry, and one *Brandywine* every year that may or may not produce), trellising (the *Florida weave* is faster than caging and works better at our wind speeds), and the per-stage nutrient program.

Around each newly-transplanted seedling we build a little windbreak. April and May in the Dragoons are the windy months — sustained five-to-fifteen-mile-per-hour southwesterlies, with gusts above thirty-five not unusual — and a foot-tall pepper seedling unprotected for two days in April wind is a foot-tall pepper seedling with shredded leaves and a snapped stem. The windbreak does not need to be elaborate: three tomato cages with shade cloth wrapped around them, or a couple of wooden stakes with a section of burlap stapled across, will do it. The wind protection comes off in two weeks once the plant is established and toughened. Guide 2 §5.3 has the version we wrote down after we lost three plants the first year to a single afternoon of wind.

And in April we see, for the first time, the volunteers. The Chiltepin (*Capsicum annuum* var. *glabriusculum* — the wild ancestor of all *C. annuum* peppers, native to the Sky Island region, the only pepper that grows wild in the United States) seeds we did

not plant come up of their own accord in beds we did not intend. Wherever a bird sat on the fence post and dropped a Chiltepin berry the previous fall, in April a little Chiltepin seedling appears. We do not move them; transplanting Chiltepin almost never works because the taproot is fragile. We mark them with a flag and we let them grow. By August they are knee-high; by October they have set their tiny round red berries; by November we have a Chiltepin to harvest, which is one of the great free gifts of growing in this region. Guide 2 §3 has the whole Chiltepin chapter.

The cool-season garden is in transition. The spring brassicas are growing fast in the lengthening afternoons. The garlic shoots are eight inches tall and starting to look like garlic. The overwintering onions have bulked up to thumb-thick. The cold-frame lettuces are starting to think about bolting and we are harvesting as fast as we can. The cool-season window — September through May — is in its last six weeks, and we are aware of it in a way we were not in January.

Indoors, the seed-starting station is winding down. The tomatoes and peppers are out. The melons and cucumbers and squash that we will direct-sow on May 15 are not started yet — those are direct-sow crops here, not transplant — so the trays are mostly empty. We clean them, put them away, and turn the LED lights off for the first time since January. They will come back on in October, when we start fall brassicas indoors.

By the end of April we have peppers in the ground, tomatoes in the ground, the Bato bench filled with water and running on the canonical Dragoons hydroponic nutrient recipe (Guide 4 Part 1, which has all the ppm targets and the per-stage adjustments). The grape vines have broken bud and are growing visibly day to day. The orchard has set fruit, the apricot already with marble-sized green fruits hanging in clusters, the peaches looking better than the apricot. The garden, at last, looks like a garden.

RELATED GUIDES

Reference for this month: Guide 2 §5.3 (pepper transplant protocol, the wind protection, the no-nitrogen rule, the stem-bury depth) · **Guide 7 §3** (tomato chapter — variety selections, *Florida weave* trellising, per-stage nutrition) · **Guide 11 §18** (hardening off and transplant shock prevention) · **Guide 2 §3** (Chiltepin chapter — the volunteer wild pepper, why you cannot transplant them, how to recognize the seedling) · **Guide 4 Part 1** (the canonical hydroponic nutrient recipe and ppm targets)

May — the wind, the heat, the squash going in

May is the month that teaches the newcomer what the Dragoons actually feel like in the warm season. The wind comes back hard the first two weeks — the southwest blows steady at fifteen miles an hour all afternoon, with gusts that rattle the loose shade-cloth ties, and the air is dry enough that an unwatered transplant will wilt by lunchtime. By the third week of May the wind eases. The heat ramps. The pre-monsoon temperature climb that runs through June starts in earnest. Highs in the upper eighties become highs in the low nineties; lows in the fifties become lows in the sixties. The grass turns from green to bronze. The wash stays dry.

We mulch heavily this month. Every bed, every Bato bucket, every grape vine, every fruit tree gets a deep layer of straw or arborist chips around the base — three to four inches, kept a hand's width back from the actual stem to prevent rot. The mulch in the Dragoons is doing three jobs: it holds the soil moisture against the dry afternoons, it shades the soil so the surface temperature does not spike past a hundred and ten and bake the surface roots, and it suppresses the weeds that would otherwise compete for water. The single highest-leverage move in May, in our experience, is the mulch. A well-mulched pepper at the start of June goes through the pre-monsoon stretch fine; a bare-soil pepper goes through it stressed.

And on May 15 — the canonical Dragoons date — we direct-sow the cucurbits and the warm-season legumes. Summer squash (*Costata Romanesco*, *Yellow Crookneck*, and a *Zucchini Black Beauty* we have grown for years), winter squash (*Waltham Butternut*, a *Hubbard*, a *Delicata*), cucumbers (*Marketmore 76* for slicing, *Suyo Long* for trellised pickling), melons (a *Charentais* from Native Seeds, a *Hales Best* cantaloupe), beans (*Tepary* for drought tolerance, *Hopi Black* for the same), sweet corn (*Painted Mountain* for the long short-season window, in two-week succession blocks so we do not get all the corn at once). The full warm-season-companion chapter is Guide 7; the direct-sow protocol is in §3 of each crop's subsection. We sow directly into the bed, into pre-moistened soil, three seeds per hole, thinned to the strongest after the seedlings are up. The sweet potato slips, propagated indoors over the previous six weeks, go in around May 25 once the soil is reliably above seventy.

The pests start arriving in May. The first cucumber beetle (a small yellow-and-black-striped beetle, the western striped variety here, which transmits bacterial wilt to cucurbits) we see is usually on the second or third week the squash is up. We scout daily, hand-pick what we can, and put up yellow sticky traps. Heavy infestations get treated with a kaolin clay spray (a powder suspended in water that coats the leaves white and physically repels the beetle); Guide 10 §5 has the cucumber beetle protocol in full, including the pyrethrin option for serious pressure. We do not spray pyrethrin during squash bloom; it kills the squash bees we need for fruit set.

The cabbage moths arrive on the first warm afternoon of May and start laying tiny

yellow eggs on the undersides of every brassica leaf. The spring brassicas we transplanted in mid-March are racing the May heat now, and the cabbage worms are the same race in reverse — they want to eat the heads before we can harvest them. We use *Bacillus thuringiensis* (*Bt kurstaki*, a soil bacterium whose endotoxin specifically targets caterpillars and is harmless to everything else), sprayed weekly on the leaf undersides; one tablespoon per gallon of water, applied in the evening. Guide 6 §2 and Guide 10 §4 cover the cabbage-moth complex in detail.

And the heat is enough by the third week of May that the spring lettuces bolt. They send up a thick stalk, the leaves turn bitter, and the heads we did not harvest in time are done. We pull them, compost them, and let the bed turn over to the warm-season succession. The cool-season window has now formally closed at our elevation; from late May through late August, lettuce in the Dragoons is mostly impossible without shade cloth and a heroic effort. We do not fight this. We accept it and move on.

By the end of May the warm-season garden is in full swing. The peppers are eighteen inches tall and setting their first flowers. The tomatoes are climbing into the second tier of the Florida weave. The squash and cucumbers are up and growing visibly daily. The grape vines have their first inflorescences (flower clusters, the precursor to grape bunches) showing, which is the high-stakes moment of the grape year — flowering happens in late May or early June, and the weather during flowering decides the size of the eventual crop. The orchard has thinned its own fruit through natural drop and we have hand-thinned the peaches to one fruit per six inches of branch, which feels brutal but produces twice the harvest at half the branch breakage. The garlic scapes — the curling green flower stalks the hard-neck garlic sends up in late May — come off this week and become pesto. The garden is loud with bees.

RELATED GUIDES

Reference for this month: Guide 7 §5–§10 (the warm-season companions — direct-sow squash, cucumbers, melons, beans, sweet corn, sweet potatoes — and the May 15 canonical plant date) · **Guide 10 §5** (cucumber beetle: scouting, hand-pick threshold, kaolin clay, pyrethrin and why not during bloom) · **Guide 6 §2 and §6** (spring brassicas wrap-up and cabbage-moth control with *Bt*) · **Guide 5 §6** (grape flowering and the weather-dependence of fruit set) · **Guide 11 Part 1** (mulch types, depth, the keep-it-off-the-stem rule)

June — the pre-monsoon stretch

June is the hardest month in the Dragoon garden. The monsoon has not arrived. The pre-monsoon high-pressure ridge sits over the Southwest, the humidity drops into the single digits, the highs run ninety-five to one-oh-five, and the soil that has not been mulched is dust by ten in the morning. The plants are not in trouble yet — peppers and tomatoes evolved in tropical highlands and they tolerate this — but they are not happy, and we are spending real time at the spigot.

The water bill is the highest of the year in June. Hydroponic reservoirs need topping twice a week and the temperature of the reservoir is the daily worry; ours runs in the high seventies even in afternoon shade with insulation around the tank, and if we let it get to eighty-five the dissolved oxygen drops, the plants stress, and root rot becomes a real risk. The full reservoir-temperature management protocol is in Guide 2 §6.2; the short version is, ice bottles in the reservoir on the worst afternoons, a small fan blowing over the tank to evaporate, and absolutely no direct sun on any part of the system.

The drip schedule on the in-ground beds doubles. We move from a twenty-minute run every other day in May to a thirty-minute run every day in June, with the time shifted to first light so the water sinks in before the sun pulls it back out. Guide 13 §13 covers the conservation strategies — mulch (already done), drip not sprinkler (already done), drip timing at dawn (the June adjustment), and the rule that you water the soil moisture profile not the leaf, which is to say you water deeply less often, not shallowly more often. The plants whose roots are six inches deep are the plants that survive a hundred-and-five-degree afternoon. The plants whose roots are two inches deep are the plants whose leaves go limp.

The first jalapeño comes off in mid-June. It is small, dark green, hot enough to surprise — the heat in pepper flavor concentrates in the pre-monsoon stress, which is one of the consolations of June, capsaicin loves the heat-and-thirst combination — and it is the first real harvest of the warm-season garden. We slice it on a quesadilla and acknowledge that the year has turned a corner. The cherry tomatoes follow within a week; the *Sungold* sets fruit reliably even at our June temperatures and produces a steady handful a day through the rest of the summer. The slicer tomatoes (*Jet Star*, *Cherokee Purple*, *Brandywine*) are still mostly in flower and not yet fruiting in volume — they will set hard once the night temperatures drop in late August, but in June the flowers are often dropping unfertilized because the daytime heat shuts down pollen viability. This is the famous *blossom drop*. It is fine. Guide 7 §3 explains it and walks through the fall-tomato planting strategy that gets around it.

We also see, by late June, the first blossom-end rot on a pepper or a tomato — a black sunken patch at the bottom of an otherwise-good fruit, usually on a plant we let dry out two days in a row, usually a *Brandywine* or a poblano. BER is a calcium-transport

problem driven by inconsistent watering; the calcium is in the soil (the caliche is generous, see Guide 1 §3), but the plant cannot move it from root to fruit if the water supply is irregular. The fix is more consistent watering, not more calcium. Guide 2 §8 covers BER in full.

The garlic comes out of the ground around June 20, the hard-necks first, the soft-necks the first week of July. The signal is the lower leaves browning while the top three or four leaves are still green — pull too early and the bulbs are small and the wrappers loose, pull too late and the wrappers split and the bulbs do not store. We lift with a digging fork (never pull by the stem, the stem breaks and the bulb stays in the ground); we shake the soil off but do not wash; we lay the whole plants on a screen in the shed for the three-week cure. The curing protocol is in Guide 12 — soft-necks braid better than hard-necks, hard-necks store about four months, soft-necks store eight to ten. By late July we have a hundred and twenty heads of garlic hanging in the shed and the whole shed smells like garlic, which is one of the great smells of the year.

The cool-season beds, post-garlic, get turned over. We pull the spent garlic plants, fork in another inch of compost, and we sow the first round of summer cover crops — *cowpea*, *sun hemp*, a *buckwheat* if we want something fast — to build organic matter and fix nitrogen through the heat. Guide 11 Part 1 covers the cover-crop selection. The cover crops will be tilled back in late August before the fall direct-sow.

And we plan, by the last week of June, for the monsoon arrival. The rainwater catchment off the patio roof has been dry for nine months; we clean the gutters, check the connections, and position the tanks. A monsoon storm produces more rainwater in twenty minutes than the well produces in two days — three hundred gallons off a covered patio in a serious storm — and the rainwater is soft, low-TDS, slightly acidic, basically perfect for hydroponic top-up. Guide 13 §8 has the catchment math and the storage protocol. The monsoon usually arrives the first week of July. We are ready by June 30.

RELATED GUIDES

Reference for this month: **Guide 13 §13** (water conservation in pre-monsoon heat — drip timing, mulch, the deep-watering rule) · **Guide 2 §8** (blossom-end rot — what it is, why calcium is the wrong solution, what to do instead) · **Guide 7 §3** (tomato blossom drop in pre-monsoon heat, fall-tomato timing as the workaround) · **Guide 12** (garlic curing — the three-week shed protocol, hard-neck vs soft-neck storage life) · **Guide 13 §8** (rainwater harvesting math, catchment-area calculations, storage-tank sizing)

July — the monsoon arrives

The first monsoon storm of the year is one of the events of the Dragoons calendar. It is also unpredictable — some years it comes the last week of June, some years it does not come until the second week of July, and the first storm is usually small (a cloud builds over the ridge in the late afternoon, dark on the bottom, the wind comes up, the temperature drops fifteen degrees in an hour, and a half-inch of rain falls in twenty minutes), but it changes everything that follows. After the first storm, the humidity stays above thirty percent. After the first storm, the afternoon temperatures top out in the low nineties instead of the high nineties. After the first storm, the soil that was bone dry has a half-inch of cool dark moisture in it, and the smell of wet creosote that is unique to the Sonoran Desert region rises off the rangeland for an hour. The plants notice. Within forty-eight hours every tomato in the garden has set new fruit. Within a week the cucumbers triple their growth rate.

The hydroponic system loves the monsoon. We open the catchment tanks and pump the captured rainwater straight into the reservoirs — a five-hundred-gallon tank fills off the patio roof in a single afternoon storm, which is more than the entire summer top-up demand of our twenty-bucket system. The well water with its bicarbonate-treatment protocol still has a role for the deep-summer weeks when storms skip us, but the monsoon weeks themselves run almost entirely on rainwater. The TDS in the reservoir drops; the EC stabilizes; the plants visibly relax. Guide 13 §8 has the catchment system; Guide 3 §6 has the operations playbook for switching the reservoir between sources.

The downside of the monsoon is the disease pressure. Humid afternoons with leaf wetness lasting overnight are the conditions for fungal disease, and the first signs of *powdery mildew* show up on the squash leaves in the second week of July — small circular gray-white powdery patches on the upper leaf surface, spreading from older leaves toward newer ones. Once it has hold of a cucurbit plant it is hard to reverse; the right move is preventive. We start a weekly milk-and-water spray (one part milk to nine parts water, sprayed in the morning) on every cucurbit the first week of July, before we see the first patch. Guide 10 §8 covers the full powdery-mildew protocol; the milk spray works for early pressure, the potassium-bicarbonate spray (one tablespoon per gallon) works for moderate pressure, the *Bordeaux mix* copper spray is the last resort for serious infestation and we try not to need it.

The tomato hornworms (*Manduca quinquemaculata*, the *five-spotted hawk moth* in its larval form, four inches long, bright green with white side stripes, a single horn at the tail) appear in mid-July. They are camouflaged so perfectly against a tomato stem that the first one we see most years is the one we find by the bare patch where eight leaves used to be. The protocol is hand-pick — they do not bite — and either feed them to the chickens (if you have chickens) or simply drown them in a bucket of

soapy water. *Bt kurstaki*, the same caterpillar-targeted bacterium we use on cabbage worms, works on hornworms too if pressure is heavy. Guide 10 §3 has the hornworm chapter.

The orchard hits its first peak in July. The *fig* — usually a *Black Mission* in the Dragoons, sometimes a *Brown Turkey* or a *Celeste* — produces its first crop, the so-called *breba* crop, in early July on last year's wood. The figs come off ripe — soft to the touch, slightly drooping on the stem, the eye starting to open — and they will not ripen any further off the tree. We pick daily, in the morning before the heat. The first peaches and apricots come off the same week — *Babcock* peach if we have it, *Blenheim* apricot, the *Methley* plum — and the harvest is the heaviest of the orchard year. We eat fresh, refrigerate, share, and start preserving. Guide 12 has the canning section: peach jam in pint jars, apricot in half-pint, the pressure-canner protocol for low-acid items, and — critically — the altitude adjustments for canning at 4,700 feet. Standard canning recipes are calibrated for sea level; at our elevation we add five minutes of processing time for water-bath canning above 3,000 feet, ten minutes above 6,000. The first time you can without adjusting for altitude you do not get sick, but the jar seals are unreliable and you find out the next month when one has gone soft. Do it right the first time. Guide 12 §4 has the altitude tables.

The Bato bench, by mid-July, is humming. The plants are five feet tall, the trellises are full, the harvest is daily — a colander a day of peppers and small tomatoes off twenty buckets. We monitor pH and EC every morning (pH 5.8 to 6.2, EC 2.0 to 2.6 for fruiting peppers, the canonical recipe is in Guide 4 Part 1) and top up the reservoir to volume with rainwater every two or three days. The hydroponic system in the Dragoons in July, run well, is a high point of the year. Run badly — reservoir too warm, pH out of range, top-up neglected for a week — it crashes hard. The full operations playbook is in Guide 3 §6.

By the end of July the rainwater tanks have filled and drained twice; the garden has gotten three to four inches of rain in the cumulative; the powdery mildew is held at bay; the tomato hornworms are under control; the figs are coming off daily; the kitchen is starting to fill with jars; the bermudagrass is green again, which we feel mixed about; and the temperature has settled into the eighty-five to ninety-five range that the Dragoons consider summer. It feels lush in a way the place has not felt since October.

RELATED GUIDES

Reference for this month: Guide 13 §8 (rainwater catchment in the monsoon — tank fill rates, switching the reservoir from well to rainwater) · **Guide 10 §8** (powdery mildew on cucurbits — the prevention spray, the moderate-pressure protocol, the copper last resort) · **Guide 10 §3** (tomato hornworm —

identification, hand-pick, *Bt* when pressure is heavy) · **Guide 12 §4** (water-bath and pressure canning at 4,700 ft altitude — the canonical adjustment tables) · **Guide 3 §6** (Bato system operations — daily pH/EC monitoring, top-up cadence, reservoir source switching)

August — harvest begins in earnest

August is when the kitchen takes over the house. We are picking a colander a day from the Bato bench, half a colander from the in-ground peppers, two or three pounds of tomatoes from the row, a basket of summer squash that we keep giving away because there is no possible way to eat it all, a couple of cucumbers, and — by the second week — the first true ripe slicer tomatoes that we have been waiting for since April. The August tomato sandwich, with white bread and mayonnaise and salt and a thick slab of *Cherokee Purple* still warm from the vine, is the meal that justifies the entire warm-season garden. We eat one for lunch most days in August.

And we start canning. Tomato sauce in the pressure canner (low-acid, needs the pressure-canner protocol, never water-bath — Guide 12 §4 is the canonical reference and the altitude adjustments matter), salsa in water-bath jars (high-acid because of the vinegar, water-bath at our adjusted time), pepper rings in vinegar, pickled cucumbers, peach jam from the late peaches, dilly beans from the early bean harvest. The kitchen is messy for two weeks straight. The jars accumulate on the counter and migrate to the basement shelves. By the end of August we have maybe forty jars done — not enough yet, August is the warm-up month for the September canning blitz, but enough that the shelves are starting to look serious. The pressure canner is on the stove and stays there. We learn — sometimes the hard way — that a pressure canner is a machine that requires attention; do not try to do anything else in the kitchen while a batch is processing. Guide 12 §3 has the safety protocols. Read them.

The peppers come into their own this month. The jalapeños are at peak — we are picking the dark-green ones daily and letting some go red on the plant for *chipotle* drying later. The serranos are heavy with fruit. The poblanos are big enough for *chiles rellenos*. The first habaneros and the first ghost peppers are starting to color. And the Rocotos — the plants we started in January, the ones that have taken three months longer than anything else and seemed for a while like they might not produce in time — set their first fruit in early August. The Rocoto fruit is small and round and shiny, like a little red apple, and it is hotter than anything else we grow, and it has a fruit-forward flavor that no other pepper has. The Rocoto is the long-game crop of the Dragoons. It is worth the wait. Guide 2 §3 is the whole Rocoto special section.

Pepper preservation has its own chapter in Guide 12. The protocol we use most is the *ristra* — a string of red peppers tied by their stems and hung outside in full sun for two to three weeks, drying in the desert air to a crisp shelf-stable state. New Mexico is famous for them; the Dragoons have basically identical conditions and ristras work beautifully here. The first ristras of the year are usually red jalapeño in mid-August; the big string of red *Hatch* or *Sandia* if we grew them comes in late August and September. Guide 12 §11 has the ristra protocol — what to dry, what not to dry, how to string them, how long to hang them, when to bring them in.

The second cool-season succession goes in this month. The fall brassicas — broccoli, cabbage, cauliflower, kale, brussels sprouts — that we sowed indoors in early July are now five-inch transplants, and they go out into the bed under shade cloth in the last week of August. The full fall brassica calendar is Guide 6 §1.4, the master cool-season calendar that walks through every crop family by sowing date. The shade cloth is essential — the soil under the cloth runs ten to fifteen degrees cooler than the soil in full sun, and the brassicas, which are cool-season plants, will not establish in ninety-degree afternoons without it. The shade cloth stays on through September; by October the plants are big enough and the days are cool enough that we pull it off.

The overwintering onion sets that the catalog said to plant August 25 to September 15 — we plant them August 25. Right at the start of the window. The big bulbs come from the longest possible establishment period, and in the Dragoons the August nights are already cool enough at our elevation that the sets root well even in late summer. Guide 6 §3 has the allium chapter, and the keynote is unambiguous: fall-planted onions size up; spring-planted onions stay small. The Dragoons grower who is used to planting onions in March elsewhere has to make this mental shift in year one or stay in tennis-ball-size onion territory forever.

By the end of August the in-ground tomato harvest is at its first peak (there will be a second in late September after the heat breaks), the pepper harvest is daily and serious, the Rocotos are red, the fall brassicas are in the ground under shade cloth, the onion sets are in, the cumulative monsoon rain has hit five or six inches, and the basement is filling with jars. The garden looks lush — squash vines covering the bed edges, tomato cages crooked and overgrown, pepper plants four feet tall and bushy with fruit. The bees are everywhere. The mornings are still cool. The afternoons still get hot, but the air is humid enough now that the heat feels different. The diurnal swing is narrower than it was in June. Summer in the Dragoons, properly, is the monsoon — which is to say, two months of damp warm productive weather, the kind of weather that grows enough food for the year.

RELATED GUIDES

Reference for this month: Guide 12 (canning the August harvest — water-bath vs pressure, altitude adjustments, safety protocols, what gets which method) · **Guide 12 §11** (pepper specialties: ristra-making, *chipotle* drying, lacto-fermented hot sauce) · **Guide 6 §1.4** (the master cool-season calendar — fall brassica transplant dates, the shade-cloth requirement) · **Guide 6 §3** (allium chapter, the August 25 onion-set planting window, the fall-vs-spring fundamental mental shift) · **Guide 2 §3** (Rocoto special section — why the long wait pays off)

September — the changing light and the second pepper push

September in the Dragoons is the month everything we have been building toward arrives at once. The grapes are ready. The tomatoes set a second wave of fruit as the night temperatures drop into the low sixties and pollen viability comes back. The peppers — all of them now, the jalapeños still going, the habaneros at peak, the Rocotos red and heavy, the *Aji Lemon Drop* dripping bright yellow — are in their best month. The fall brassicas are establishing fast under their shade cloth and starting to push real top growth. The light has changed, too — the angle of the sun by mid-September is twenty degrees lower than at the solstice, and the late afternoon light comes in golden and oblique against the ridgeline, and the temperature drops twenty degrees between four and seven and the evening on the patio is the best evening of the year.

The diurnal swing is back to its full forty degrees, day to night. The plants love this. Pepper flavor and capsaicin concentrate under wide diurnal swings — it is one of the reasons Cochise County peppers are good — and the September peppers are noticeably better than the August peppers, even off the same plant. Same with tomatoes. The *Cherokee Purple* that was good in August is great in September.

The grape harvest, if we have vines, is the event of the month. The *Sangiovese* or the *Tempranillo* or the *Mission* we planted three years ago, which spent late July through August in *veraison* (the color change from green to red to purple), is now ready to pick. The signal is *Brix* — sugar content measured with a refractometer, target around 23 to 25 for a red wine, slightly lower for white — and we pick by sugar, not by date. The whole grape-harvest chapter is in Guide 5 §11. We pick in the morning, before the fruit warms; we destem and crush the same day; we begin fermentation by evening. The cellar smells like grape must for the next two weeks. The wine, if we are careful, will be drinkable by Thanksgiving and good by next March.

The second canning push is bigger than August's. The slicer tomatoes are coming in by the bushel; we are running the pressure canner four nights a week. The salsa we make in September — *salsa roja* with September tomatoes, September peppers, September onions, garlic from June, cumin and cilantro from the late summer sowing — is better than anything we can buy and accounts for a full shelf of pints in the basement. The kitchen smells like onion and pepper steam for most of the month. We have canning gloves now, which we did not in August, because we learned. Guide 12 §6 is the salsa chapter.

We transplant the next round of fall brassicas — the second wave, sown indoors in late July — out into the beds, this time without shade cloth in many cases because by mid-September the afternoon temperatures rarely exceed eighty-five and the cool-season plants establish without protection. The brassicas going out now (broccoli for November harvest, cabbage for December, brussels sprouts for the January feast) are

the harvest we will be eating fresh through the deep winter. Cool-season planting in September in the Dragoons is one of the great gifts of the climate; we have a four-month frost-free window after we transplant, which is plenty for any brassica to head up before the hard cold sets in. Guide 6 §1.4 has the calendar.

And the direct-sow window for the cool-season greens opens in earnest. Spinach, *mâche*, arugula, the cold-tolerant lettuces, cilantro (now that the heat is off), radishes — all of it goes into the bed in September. The soil is still warm from August so germination is fast; the days are getting shorter so growth is steady but not bolt-rushed; by mid-October we have a salad-cutting bed twenty feet long. Guide 6 §4 covers the cool-season greens — the canonical timing, the succession-sowing strategy (every two weeks for the lettuces), and the varieties that work at our elevation.

The cellar by the end of September has the first preserved jars of the year sitting on the shelf in real volume. Probably ninety jars total — tomato sauce, salsa, peach jam, dilly beans, pickled peppers, pickled cucumbers, the first batch of lacto-fermented *Hatch* hot sauce that has been bubbling on the counter for three weeks and is now ready to bottle. We label each jar with the contents and the date. The cellar is cool — sixty-five degrees, dark, dry — and the jars stack two-deep on wire racks. This is what a year of work in the Dragoons looks like in physical form.

The orchard delivers its late round. The pomegranates color up through September — the *Wonderful* variety we grow turns a deep ruby in the third week — and we pick when the skin is taut and the fruit is heavy in the hand. Guide 12 §10 covers pomegranate curing (a week in a cool dry place toughens the skin and extends storage). The jujubes (*Lang* and *Li*, the two reliable Dragoons cultivars) are ready in mid-September for the drying varieties and early October for the fresh-eating types. The late apples and pears come in. The Asian pear is the surprise of the orchard — heavy crops, good flavor, stores for six months in the cellar, deserves a place in every Dragoons orchard.

By the end of September the warm-season garden is starting to think about wrapping up. The tomato vines, after their second wave, are starting to look tired. The pepper plants are heavy with red fruit and a few of them have started to drop their lower leaves. The summer squash has powdery mildew and is producing one or two fruits a day instead of five. The cucumber has gone. But the cool-season garden is up — brassicas going strong, garlic shoots one inch through the new mulch where we planted last year (no, that is October's job, but the mental shift is happening). The first dry-season forecast for the next monsoon is months away. We close September aware that we have made it through the first full year.

RELATED GUIDES

Reference for this month: Guide 6 §2 and §1.4 (fall brassica transplant timing without shade cloth, the master cool-season calendar) · **Guide 6 §4** (cool-season greens — direct-sow window, succession-sowing strategy, varieties for the Dragoons elevation) · **Guide 12 §10** (pomegranate curing and storage; jujube drying and fresh-eating varieties) · **Guide 5 §11** (grape harvest by Brix not date; destem-crush-ferment same-day workflow) · **Guide 12 §6** (the salsa chapter — *salsa roja*, *salsa verde*, the canonical Dragoons recipes that use what is in the garden in September)

Closing — one year in, and what we'd do differently

A year ago in October we walked the property in a sweater for the first time and noticed where the sun went and where the wash drained. We planted garlic. We did not yet have a compost pile, a Bato bench, an irrigation system, or a seed-starting station. We did not know what caliche felt like under a shovel. We did not know that an apricot blooms in February and that the bloom can be lost in a single bad night. We did not know what a Rocoto looked like or how long it takes one to set fruit. We did not know how much rainwater comes off a covered patio in a serious monsoon storm — three hundred gallons in twenty minutes — and we did not know that the September sun comes in at a low oblique angle that turns the ridgeline gold for an hour at dusk.

Now we know most of that. The library still holds the answers to the questions we have not yet had to ask, and it will hold the answers to questions we will not ask until year three or five, but the first year teaches the climate in a way no document can. Some of the lessons:

The reference guides were mostly right. The canonical dates — October 15 for garlic, May 15 for squash, late April for pepper transplant, the August 25 onion-set window — held at our elevation almost without adjustment. The pre-monsoon stretch in June was as bad as Guide 1 §3 said it would be and the monsoon in July was as transformative as Guide 13 §8 said it would be. The Rocotos took as long as Guide 2 §10 said they would. The hard frost in early November came within the window Guide 1 §3 promised. None of this is a surprise; the guides are written by people who have done this for years, and the dates have been earned.

What was different was the weather inside the windows. Year one had a late hard freeze in the third week of November (later than usual). The monsoon arrival was July 12, average. The apricot bloom was killed by a February 22 freeze that the forecast underplayed. The first jalapeño was June 18, the first slicer tomato July 23, the first Rocoto August 9. These are not the right dates for year two; they are the right dates for year one. The variance between years is real and the only way to handle it is to keep notes.

The "what worked, what didn't" log. This is the practice we are committing to and we recommend you do the same. At the end of each season, write down for each major crop: variety, source, plant date, first-harvest date, total yield (approximate is fine), pest/disease pressure, and one-line notes. We keep ours in a single notebook in the shed. Three years of that log is worth more than ten years of reading. Five years of it is institutional knowledge. The F2 project for this library is the formal annual "What Worked / What Didn't" practice that builds on this — see the project backlog for the template.

What we would do differently in year two. We would build the cold frame in

October, not November (so it is producing greens by Thanksgiving instead of New Year's). We would put the Bato reservoir in deeper shade — afternoon shade is not enough; we want it in the shadow of the shed all day from June through August. We would start a second compost pile in February so we have two going by April when we are amending beds. We would plant fewer tomato varieties (three, not seven — *Cherokee Purple*, *Sungold*, *Jet Star*) and grow more of each. We would plant twice the basil — pesto froze well, and we ran out of frozen pesto in March. And we would put up a real javelina fence around the orchard in April, not in October after the damage has been done.

What we will not do differently. Everything else. The October-garlic, January-bareroot, February-pepper-start, March-bed-prep, May-15-squash, July-monsoon-catchment, August-25-onion-set rhythm is the rhythm of the Dragoons growing year. It is not negotiable and we no longer want it to be. The reference guides hold the depth, this narrative holds the story, and the year — the actual year, walked through one morning at a time — turns out to be the real teacher of both.

The next year begins next month. The garlic from this year is hanging in the shed. The salsa is in the cellar. The Rocotos are coming inside under LEDs to overwinter (Guide 2 §10). The grape vine is starting to drop leaves. The cottonwoods are yellow again at the edges. We put on a sweater for the first time this fall yesterday morning. We are getting ready to plant garlic.

We will see you in October.

RELATED GUIDES

Reference for the year ahead: Guide 1 §9 (the master multi-crop calendar — return to it every month, circle the current row) · **Guide 2 §10** (overwintering Rocotos and habaneros indoors under LED for year-two head start) · **Guide 11 Part 1** (year-two soil-building — what to add when, the cumulative compost program) · **Guide 12 §13** (the annual harvest-log template; what to write down so that year three is wiser than year two) · **All fourteen guides** are now your reference shelf. This narrative is your kitchen-counter companion. Read it once a year, in late September, before you do it all again.