



THE WORLD COOKING SYSTEMS ATLAS · CHAPTER 6

Aromatics and Spice Oils

One motion, eight cuisines: aromatic, in fat, released by heat

After this chapter, the next time a curry tastes like ingredients sitting next to each other instead of a dish, a soffritto cooks past sweet and into bitter, an herb infusion turns from fragrant to flat — you'll know which release medium the aromatic needed, at which temperature it was being asked to surrender, and at which moment in the cook it should have arrived.

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After this chapter, you will be able to walk into almost any kitchen in the world, watch the cook start a dish, and tell — within the first ninety seconds — what the dish is going to taste like at the end. The motion is older than borders. It is older than most spices. It is the cook's first decision and the dish's last impression.

1 • The first ninety seconds

There is a small ritual at the start of most cooked meals in the world. The cook stands at the stove. A pan goes on. A fat goes in. Something is crushed or sliced or pulled from a jar. Heat rises. And then, before the bulk ingredient has even been touched, the kitchen begins to smell of itself. Onions in butter. Garlic in oil. Mustard seed in ghee. Bay leaf in lard. Lemongrass in coconut cream. Long before there is a dish on the stove, there is already an *opinion* about what the dish will be.

This opinion is the dish's aromatic base. It is the cook's first decision and, in most traditions, the decision that determines more of what arrives on the plate than any later move. Salt can be adjusted. Acid can be added. Heat can be corrected. But the smell of the kitchen at the ninety-second mark is, in nearly every cuisine, locked in by then. Whatever else happens, the dish will carry that opening.

What most home cooks miss is that this ritual is the same ritual everywhere. The ingredients change. The fat changes. The temperature window changes. But the motion underneath — *an aromatic, in a fat, released by heat, before the bulk arrives* — is one of the most widely shared motions in the cooked food of the world. The French call this a mirepoix. The Italians a soffritto. The Spaniards a sofrito. The South Asian kitchens a tadka. The Chinese a ginger-scallion opener. The Vietnamese a sả-tỏi-hành. The Mexicans an adobo paste. The Thai a krachai-and-galangal pound. The cook who watches them all at once stops seeing eight techniques and starts seeing one technique in eight dialects.

This chapter follows that single motion. We will look at the aromatic in its four trapped states (whole, cracked, ground, paste), at the release media (cold oil, hot oil, butter, dairy, alcohol), at the arrival moments — early, middle, late, after the heat — and at the way each tradition tunes the same three knobs to produce its characteristic opening note. By the end, the cook should be able to look at an unfamiliar recipe and recognize, in the first paragraph, *what kind of aromatic base this dish is built on, and what kind of arrival it is going to give the plate.*

2 • What an aromatic actually is

An aromatic is any ingredient whose primary job is to release volatile compounds into a release medium so that those compounds end up in the eater's nose. That is the entire definition. It is broader than most home cooks realize.

Garlic is an aromatic. Ginger is an aromatic. Onion is an aromatic. So is the bay leaf, the cinnamon stick, the bruised lemongrass, the toasted cumin seed, the cracked peppercorn, the dried chili, the fresh dill, the curry leaf, the kaffir lime leaf, the orange peel pinned to the pork, the smoked paprika, the dried tangerine peel in a Cantonese braise. Anything that is in the dish primarily because of what it *smells like* — not what it tastes like, not what it adds in body — is an aromatic.

This is a meaningful distinction because aromatics behave differently from bulk ingredients. The carrot in a beef stew is bulk: it is there to be eaten, to thicken the braise, to sweeten it as it breaks down. The bay leaf in the same stew is aromatic: nobody eats it. Its presence is detected in the nose, not on the tongue. Remove the carrot and the dish loses substance. Remove the bay leaf and the dish loses *signature*.

The aromatic's job is to deposit its volatiles into a carrier. That carrier is almost always a fat — oil, butter, ghee, lard, rendered chicken fat, coconut cream. Occasionally it is dairy (cream infused with bay and clove for a béchamel). Occasionally it is alcohol (wine, sake, mirin). Very rarely is it water alone. Most of the cooked food of the world uses fat as the carrier because fat dissolves volatile aroma molecules that water cannot reach, and because fat holds them in the mouth long enough for the brain to register them. *The aromatic in cold water is asleep. The aromatic in warm oil is awake.*

This is the central piece of grammar for the chapter: **aromatic + fat + heat = released aroma**. Every variation in the world — every tadka, every soffritto, every spice oil, every herb butter — is a variation on those three terms. Cooks who can adjust those three terms independently can land any aromatic base they want. Cooks who cannot end up adding garlic to a finished sauce and wondering why it tastes raw, or burning their cumin and wondering why the dal tastes bitter, or stirring fresh basil into a tomato sauce twenty minutes before serving and wondering why no one notices it.

Most aromatic mistakes in the home kitchen are not ingredient mistakes. They are *state* mistakes: an aromatic that was supposed to be released was never released, an aromatic that was supposed to be preserved was destroyed, an aromatic that needed a cool medium was given a hot one.

3 • Whole, cracked, ground, paste — the four states

Take a single spice — say, a tablespoon of coriander seed — and run it through four states. Each state is the same ingredient. None is the same flavor.

| State | What you do | What it releases | When you reach for it | |---|---|---|---| |
Whole | nothing — leave the seed intact | nearly nothing, until heated | long-simmered braises, mulled drinks, pickling brines | | **Cracked** | press once, just enough to fracture | a bright outer note; the husk's character | medium-cook dishes that want a defined spice presence | | **Ground** | pestle or mill to powder | the seed's full interior, very fast | spice rubs, late dustings, dry-roast finishes | | **Paste** | wet-grind with garlic, oil, or chili | total release plus emulsion with carriers | wet-rub marinades, curry pastes, mole, adobo, harissa |

The whole seed in a long braise releases its character slowly, over hours, into the simmering liquid. It does not give up everything at once. This is the slow-release shape: depth without a defined surface note.

The cracked seed is a halfway choice. It gives up its outer aromatic compounds quickly — the bright top notes — and holds its inner ones in reserve. A bay leaf in a stew works this way: it is "cracked" by its own surface texture, releasing bright leaf-volatiles in the first thirty minutes while contributing depth across the next two hours. Cracked spices give the cook *two arrivals* from a single ingredient: a top note that fades, and a base that stays.

The ground spice is the same plant in detonation form. In a hot fat, ground spice releases its entire load in fifteen to thirty seconds — and then begins to burn. Ground spice is a fast tool. It is the right tool for a tadka, where the cook wants a burst, not a slow infusion. It is the wrong tool for a four-hour braise, where the ground spice will exhaust its aroma in the first ten minutes and then leave only its bitter residue for the rest of the cook.

The paste is the most concentrated of the four. By grinding the spice into oil or with wet ingredients, the cook has already started the release before the dish meets the heat. The paste is also the most fragile, because it has the smallest reserve. Mole, harissa, gochujang, doubanjiang — once burned, none can be retrieved.

The lesson is the deeper observation: **the same spice, in different states, behaves like four different ingredients.** A recipe that calls for one teaspoon of whole cumin

is not interchangeable with one teaspoon of ground cumin. The state of the aromatic is part of the dish's grammar, not a footnote.

4 • The release media — what the aromatic dissolves into

The aromatic has been chosen, in its right state. The next decision is what it dissolves into. The cook has five major choices.

Cold oil — patient infusion. A cold oil over low, rising heat lets the aromatic give up its character slowly and completely. This is the shape used in *aglio e olio*: the garlic is sliced thin, dropped into cold olive oil, and warmed together. The garlic poaches. The oil takes on garlic's full sweet round profile without ever crossing into the bitter, scorched territory that hot oil produces in three seconds. The temperature window is roughly 60–110°C. Reach for it when the aromatic is delicate and when the cook wants the *sweet* character rather than the *roasted* one. The hardest variable to add to a home kitchen is patience; cold-oil infusion looks for the first minute like nothing is happening, and by the third minute the kitchen tells you what happened.

Hot oil — fast detonation. The opposite shape, refined further by South Asian cooking than by anyone. A small pan, two tablespoons of ghee or oil, heated until it shimmers and a mustard seed dropped in dances and pops within a second. Into this pan goes a whole spice — cumin, mustard seed, fennel, fenugreek, nigella, dried chili — and the spice releases its full aroma within ten to fifteen seconds. The cook either uses this oil as the opening of a dish, or pours the entire oil-and-seed mixture over a finished dish as a *tadka*, where it serves as the dish's arrival signal.

Hot-oil work has a care minimum the home cook must learn early. The pan must be dry. The aromatics must be dry. Wet aromatics in hot oil splatter aggressively and can burn the cook. Whole spices are added all at once and stirred immediately so no spice sits in the hottest part of the pan for more than seconds. The window between *bloomed* and *burned* is measured in seconds, not minutes. The cook stands at the pan, watching, with the next ingredient ready. This is not a technique that allows multitasking.

Butter — round, brown, or *beurre noisette*. Butter is a different release medium because it is itself an aromatic. Most fats are nearly neutral; butter brings milk solids, lactones, dairy sugars. The aromatic in butter arrives in a *blend*, not a solo. This is why *gnocchi sage butter* is so different in character from sage in olive oil. The olive oil version is bright, sharp, herbal. The butter version is round, nutty, almost caramel. The sage is the same. The carrier has done the difference.

Butter has three release temperatures. Below 80°C, butter is liquid but pale and dairy-forward; aromatics infuse into it as into a creamy oil. Around 100–120°C, the milk

solids brown and the butter develops nut, caramel, and toasted notes — *beurre noisette*. Above 150°C, the butter approaches its smoke point and the browned milk solids may scorch. The cook who learns to brown butter intentionally, and to choose between pale infusion and noisette infusion as a deliberate decision, has gained a second aromatic medium where most cooks had one.

Dairy — the slow, fat-coated room. Cream, milk, and yogurt are also aromatic carriers. The classic French béchamel is made with milk infused with bay, clove, and onion at low heat for fifteen minutes before the flour is added. The Italian cream sauce for fettuccine alfredo carries garlic and nutmeg in its dairy fat. The South Asian *kheer* carries cardamom and saffron in milk reduced to a fraction of its volume. The dairy is doing what fat does in oil — dissolving aromatic compounds into a medium that holds them in the mouth — but slower, at lower temperatures, because dairy curdles where oil does not. The cook who reaches for dairy as a release medium is usually after *gentleness*: aromatic that whispers, not announces.

Alcohol — the volatile vehicle. Wine, sake, mirin, brandy, beer. Alcohol dissolves volatile compounds that neither water nor fat can reach, and alcohol itself evaporates fast at low temperatures, so what stays in the dish is the dissolved aromatic rather than the alcohol. This is the principle behind deglazing — the wine pulls the fond from the bottom of the pan, dissolves it, and largely evaporates. In a long French braise, the wine added early dissolves aromatics that the fat in the pan misses; in a Chinese stir-fry, a teaspoon of Shaoxing wine near the end releases the dried-tangerine aroma the oil could not extract on its own.

5 • The aromatic base atlas — same motion, eight dialects

What follows is a survey of aromatic bases of nine cooking traditions. Each is one version of the same motion: *aromatic, in fat, released by heat, before the bulk arrives*. Each is a local refinement worked out over generations. None is *the* aromatic base; each is *an* aromatic base, in a tradition that contains many.

| Tradition | Aromatics | Release medium | Arrival moment | |---|---|---|---| | French *mirepoix* | onion, carrot, celery, sometimes bay and thyme | butter or rendered fat, low heat, long sweat | early — before liquid, before protein | | Italian *soffritto* | onion, sometimes garlic, sometimes carrot and celery | olive oil, low-medium heat, ten to twenty minutes | early — before tomato or wine | | Spanish *sofrito* | onion, garlic, tomato (sometimes pepper, paprika) | olive oil, low heat, twenty to forty minutes until jam-dark | early — the base of paella, stews, rice dishes | | South Asian *tadka / chaunk* | whole spices (cumin, mustard seed, fenugreek, chili), curry leaf | ghee or neutral oil, very hot, ten to fifteen seconds | early as opener OR late as arrival pour | | Chinese ginger-scallion | ginger, scallion, sometimes garlic | hot oil poured over raw, or bloomed in pan | early in stir-fry, OR at finish as a sauce | | Mexican *adobo / chile paste* | dried chilis (ancho, guajillo, pasilla), garlic, cumin, oregano | toasted dry, then rehydrated, then fried in lard | early as wet rub for carnitas, or as base for mole | | Vietnamese *sả-tỏi-hành* | lemongrass, garlic, shallot, sometimes ginger | neutral oil, medium heat, fragrant but not browned | early as marinade or stir-fry opener | | Thai *krachai-and-galangal pound* | galangal, krachai, lemongrass, kaffir lime leaf, shallot, garlic, chili | pounded into a paste, then fried in coconut cream | early in curry, the cream "cracked" to release oils | | Filipino *adobo* base | bay, peppercorn, garlic, soy, vinegar | rendered fat or oil, then liquid braise | early — the base IS the braising liquid |

The French lesson — quiet. The mirepoix is not loud. The onion is sweated until translucent, the carrot until tender, the celery until it has lost its sharp green edge, and the whole assembly should not brown except where the recipe specifically calls for it. The base is the dish's *foundation*, not its signature. The signature comes later. The French dish tends to taste *layered* rather than *spiced*; no one bite carries a single aromatic, every bite carries all of them in suspension.

The Italian lesson — fewer ingredients, more attention. A classic soffritto is often only onion and oil, sweated carefully until just blonde, then sometimes joined by garlic or — in central Italian cooking — by carrot and celery. The Italian preference is for the ingredients to be *recognizable* in the finished dish: onion sweetness detectable

as onion, not blended into a generic savory base. This is the minimum-ingredient principle applied to the dish's opening.

The Spanish lesson — cooking time on the base is itself a flavor variable.

Move slightly west and *sofrito* describes something different. The Spanish version is cooked much longer, often forty minutes or more, until the onions are nearly caramelized and the tomato (which the French and Italian bases lack at this stage) reduces to a dark, jam-like concentrate. The same ingredients, cooked five minutes, fifteen, or forty, deliver three different opening notes. The Spanish tradition has chosen the longest of the three, and the resulting dishes carry a depth a quick sweat cannot produce.

The South Asian lesson — speed of release matters. The tadka is the most concentrated version of the aromatic-in-fat principle anywhere. A whole spice in hot ghee for ten seconds gives up its *top notes* — the bright, immediate aromatics. A whole spice in slow-warmed oil for ten minutes gives up its *base notes*. The tadka chooses the top. This is also why many tadka-style dishes use a *double tadka*: one early for depth, one poured over the finished dish as the arrival signal. The dish gets both the slow and the fast release of the same spice. A safety note: tadka oil is very hot and aromatics added to it sometimes splatter. The pan must be dry, the aromatics must be dry, and the cook stands at the pan rather than walks away.

The Chinese lesson — aromatic timing is not binary. The ginger-and-scallion base appears in two opposite shapes. One is the stir-fry opener: oil, ginger and scallion added to a smoking-hot wok, bulk ingredient added within ten seconds. The other is the finishing sauce of Hainanese chicken rice: raw ginger and scallion, minced fine, sitting in a bowl while smoking-hot oil is poured over them. The hot oil cooks them in place. This is the *late* base — an aromatic delivered at the very last moment of the dish's life. There is "early in the cook" and there is "right before service" but there is also the Chinese tactic of aromatic *added after the cook is finished*. Few traditions push aromatic timing this late.

The Mexican lesson — a base can be made of multiple sub-bases. The Mexican base is the most multi-stage. Dried chilis are toasted dry in a pan, then rehydrated in stock, then ground with garlic, cumin, oregano into a paste, then fried in lard before the protein joins. Each step is its own small cook. A single complex mole may have three or four separate aromatic constructions combined only at the final step. The eater's bite carries an aromatic complexity built across what might be a full day of separate work.

The Vietnamese lesson — multi-aromatic balance. The Vietnamese base is the trio of *sả* (lemongrass), *tỏi* (garlic), and *hành* (shallot). It can include ginger. The

release is brisk: a few minutes in neutral oil at medium heat, fragrant but not browned. The cook is looking for the kitchen to smell of all three at once, with none dominant. The opening note of a Vietnamese dish is *the combination*, not the parts. This is also why Vietnamese herbs at the finishing end (Thai basil, mint, perilla, cilantro) are piled fresh on the dish at the table — the cook has been deliberately quiet at the opening so the table-end fresh aromatics can speak loudest.

The Thai lesson — the release medium can be produced on the spot. Many Thai curries start with a paste pounded fresh in a mortar — galangal, krachai, lemongrass, kaffir lime leaf, shallot, garlic, chili — and then *cracked* in coconut cream over heat. *Cracking* is the Thai term for cooking the cream until its fat separates out; into that separated coconut oil the paste is fried until it darkens. The Thai cook does not start with a pure fat; she produces the fat from the coconut cream during the same cook, and the aromatic paste meets the fat at the moment of the fat's appearance.

6 • Cold-oil vs hot-oil release windows

The single most important temperature decision the cook makes in aromatic work is whether the oil is cold-rising, medium-warm, or screaming-hot. Each window pulls different compounds from the same aromatic.

| Oil temperature window | What is extracted | What is destroyed | Right for | |---|---|---|---| | **60–110°C — cold-rising oil** | sweet, round, base notes; the aromatic's mellow profile | top notes that need heat to volatilize | aglio e olio, herb-infused finishing oils, garlic confit | | **120–160°C — medium-warm oil** | mid-range balanced notes; some browning, some sweetness | very delicate top notes; long-tail base notes need more time | French and Italian sweats, soffritto, soffrito, gentle bloom of garlic and onion | | **170–190°C — bloom oil** | sharp top notes; spice volatiles; fast Maillard | rapid risk of scorching ground spice and small aromatics | tadka, Chinese hot-oil pour, paste-frying | | **above 190°C — frying oil** | only the most heat-stable compounds survive; chili stays, mustard pops | most herb and ground-spice aromatics destroyed | crispy-aromatic finish (curry leaf crisp, fried shallot) |

A cook reading a recipe should be able to identify which window the recipe is asking for, and to recognize when their own stove is delivering a different one. A home gas burner runs hotter than an apartment electric coil; an induction unit can hit a target window faster but tends to overshoot if the cook is not watching. The aromatic base is the most heat-sensitive single step in most recipes, and it is also the step where most home cooks lose their dish without knowing.

7 • Worked examples from the catalog

The next move is to read several site recipes through the aromatic-base lens. Each is one dish; each is also a demonstration of a different choice along the spectrum.

Aglio e Olio — cold oil, single aromatic

Garlic sliced thin into cold olive oil. The pan on low heat. Nothing happens for the first thirty seconds. By a minute, the garlic whispers. By two minutes, the kitchen smells of garlic and olive oil. The cook is in the 60–110°C window for the entire opening. Chili flakes are added at a moment chosen by the cook. The pasta water arrives last. No browning anywhere. The cold-oil release principle in its purest form: one aromatic, one fat, patient heat. The dish has almost no other ingredients and lives or dies on whether the cook held the window correctly.

Dal Tadka — hot oil, sharp release, layered arrival

The lentils are cooked separately and seasoned with turmeric and salt. Meanwhile, in a small pan, two tablespoons of ghee are heated until shimmering. Cumin seed, mustard seed, dried chili, and (in some versions) curry leaf are added in sequence — each waiting only seconds before the next. Within fifteen seconds the seeds have popped, the chili has darkened just to a deeper red, and the entire pan is poured over the finished dal. *The aromatic arrives last.* The cook has waited an hour for the lentils and fifteen seconds for the tadka, and it is the fifteen seconds that decide the dish's opening note. (Safety note: dry pan, dry spices, do not walk away. The window between bloomed and burned is short.)

Chicken Adobo — base as braising liquid

The aromatic base of Filipino adobo is unusual in this chapter because it is not a separate construction. Bay, peppercorn, and garlic go directly into a pot with soy sauce and vinegar. The aromatic and the liquid are the same thing. The chicken is added and braised in this combined medium. There is no early sweat, no separate paste. The cook is using the slow heat of the braise (90–95°C, never quite a boil) to release the aromatics over forty-five minutes, and the vinegar's acidity to extract compounds that fat alone would not. This is the aromatic base merged into the dish itself, with no separation.

Gnocchi Sage Butter — single herb, butter as both carrier and aromatic

A single herb — sage — dropped into melted butter that is allowed to brown gently to *beurre noisette*. The butter is doing two things: releasing the sage's compounds and contributing its own caramel, nutty character from the browning milk solids. Three ingredients, one technique. When the dish fails it is almost always because the butter was either not browned enough (sage is bright but butter is one-note) or browned too far (butter is bitter, sage overwhelmed). The single most useful skill here is the ability to *see* the moment the butter becomes noisette — when milk solids have gone from white to amber but not yet to brown.

Hainanese Chicken Rice — late-arrival aromatic via hot oil pour

The chicken is poached gently. The rice is cooked in the poaching broth. The aromatic base does not happen at any of these stages. It happens at the table: minced ginger and scallion sit in a bowl, salt is added, and a few tablespoons of smoking-hot neutral oil are poured over them. The oil cooks the aromatics in place. The diner spoons this sauce over the chicken and rice. The opening note of the meal arrives in the last move before the bite. One of the most instructive examples in the catalog of the principle that aromatic timing is a *choice*, not a sequence.

Ma La Tang — Sichuan numb-and-spicy oil

In Sichuan cooking, an aromatic spice oil is often prepared in advance: Sichuan peppercorn, dried chili, star anise, cassia bark, and other spices slowly toasted in oil over low heat for thirty to forty minutes, then strained. The oil takes on a deep numbing-spicy character that becomes the dish's signature carrier. Ma la tang uses such an oil at service: stock is brought to simmer, and a spoon of the prepared spice oil is added. The release here happened *before* the dish was started; the cook is using a finished aromatic medium as an ingredient.

Storage note for this kind of oil: aromatic oils made for storage are *not* shelf-stable indefinitely. Garlic-, herb-, or aromatic-based oils kept at room temperature carry a botulism risk after roughly a day, because the low-acid, low-oxygen environment is exactly what *Clostridium botulinum* spores need. Aromatic oils made for storage should be refrigerated within hours of cooling, used within a few days, and any oil that has been held at room temperature for more than 24 hours should be discarded. This is the one safety rule in this chapter that the home cook should treat as non-negotiable.

Carnitas — Mexican lard + orange + bay aromatic confit

Pork shoulder cooked slowly in its own rendered lard with strips of orange peel, bay leaf, garlic, and sometimes cinnamon and cumin. The temperature is held low, around 90–100°C, for two to three hours. The aromatics release slowly into the lard, which

then carries them into the pork itself. The orange peel is doing aromatic work that orange juice could not — the volatile oils in the peel are fat-soluble; the acid in the juice is not, and is not what the cook wants here. This is a worked example of how *the form of an aromatic matters as much as the species*.

Albondigas — Spanish meatball with long sofrito

The aromatic base of an albondigas soup is a long-cooked sofrito: onion, garlic, tomato, paprika, sometimes pepper, cooked in olive oil for thirty to forty minutes until dark and jam-like. The meatballs and broth are added to this base. The dish arrives sweet and deep, with no surface aromatic announcement; the entire opening note has been built into the broth before any of the other ingredients arrived. The Spanish lesson — *cook the base long* — applied at home-kitchen scale.

Herb Butter — the preserved aromatic

Herb butter sits outside the cook-it-in-the-moment frame. Parsley, chives, garlic, sometimes lemon zest folded into softened butter and refrigerated. The aromatic is suspended in the butter without active heat release. When the butter is later melted onto a steak, a piece of fish, a hot baked potato, the heat of the receiving dish does the release in the moment of service. Same chemistry as a tadka — aromatic into hot fat — but staged days in advance and triggered by the bite-side heat.

Storage note: when made with raw garlic and held at room temperature, the same botulism risk applies as with infused oils, because the low-oxygen environment inside the butter behaves like a sealed oil bottle. Herb butter should be refrigerated and used within a week, or frozen for longer storage.

8 • Common misunderstandings

"Aromatics are just garlic and onion." Aromatics are any ingredient whose primary job is to release volatile compounds into a carrier. Bay leaf is an aromatic. Orange peel is an aromatic. A dried shiitake soaking in stock is an aromatic. Coffee in a mole is an aromatic. The cook who limits the aromatic kit to garlic and onion is missing nine-tenths of the world's opening notes.

"More aromatics means more flavor." Often the opposite. A base loaded with twelve aromatics in random proportion produces a muddy opening, not a deep one. Most great traditions use three to five aromatics in a base, tuned in proportion. Depth comes from the *handling* of aromatics — state, medium, temperature, time — not from their multiplication.

"Burned aromatics can be rescued with more salt." No. A scorched garlic, a blackened cumin seed, a burned chili paste — each adds a bitter, persistent compound that no amount of late seasoning will fix. The cook's only honest move is to stop, throw out the scorched material, wipe the pan, and start the base again. The cost of starting over is five minutes; the cost of continuing is the whole dish.

"Fresh herbs cooked into the dish add the most flavor." Fresh herbs cooked from the start usually contribute almost nothing to the finished dish. Volatile compounds in basil or cilantro evaporate within minutes of contact with hot liquid. Most fresh herbs are arrival aromatics — added in the last minute or, more often, after the heat is off. The cook who stirs cilantro into a stew at the start has effectively thrown the cilantro away.

"There is one authentic mirepoix / sofrito / tadka." No. Each of these names refers to a *family of techniques* practiced across many regions and many households. Proportions, cut, cooking time, and ingredient list vary widely. The honest framing is *one version of mirepoix — there are many*.

9 · Chef's view

I learned the lesson of this chapter twice. The first time was in a kitchen in Hanoi, where the cook making *bún bò Huế* would heat lemongrass and shallot in oil at the very bottom of the soup pot, before any liquid was added, before the bones were even in. The kitchen would fill with the smell of the dish before the dish had begun. I asked her once if she was worried about the aromatics burning during the long cook to come. She said no — the bulk water comes in next, and once the water is in, the temperature drops and the aromatics are safe. The bloom is the gift you give the soup before the cook gets long.

The second time was a few years later in a kitchen in Coimbatore, watching a cook prepare a dal tadka. She had cooked the lentils through the afternoon. The tadka itself took fifteen seconds, and she stood at the small pan the entire time. When I asked her why she did the tadka so late, she said the same thing the Hanoi cook had said in a different language. *The first smell and the last smell are the same thing.* I give it once at the start of the pot, and I give it again at the end, so the person eating receives both arrivals.

The lesson is that *the aromatic base is the dish's opening and the dish's arrival, and the cook can choose to deliver it once, twice, or with a delay.* Most home cooks deliver the aromatic exactly once, at the start, and let it cook for an hour, by which time it has flattened. The cook who delivers it again at the end has done something most home recipes do not even mention. The dish gets two arrivals from the same ingredients.

This is, in a sense, the small move that separates a home cook's stew from a restaurant cook's stew. The ingredients are the same. The seasoning at the end is the same. What the restaurant cook has done is *added the aromatic twice* — a long quiet pass for depth, and a short loud pass for the arrival. The eater's nose is given the dish at the start of the bite. This is the move you can take home with you tomorrow.

10 • How to read a new dish for its aromatic base

The cook who has finished this chapter can now do a small exercise with any recipe — a recipe from any tradition, in any language, of any complexity. The exercise is to identify, in the first paragraph of the recipe, the four pieces of the aromatic-base grammar:

What is the aromatic? Is it a whole spice? A fresh herb? A paste? A dried bundle? A combination?

What is the release medium? Cold oil, hot oil, butter, dairy, alcohol, or the cooking liquid itself?

What is the temperature window? A patient sweat at 100°C? A hot bloom at 180°C? A simmer at 90°C?

What is the arrival moment? Early in the cook? Middle? Late? Or, as in Hainanese chicken rice, after the dish is plated?

Once these four are identified, the cook can predict what the dish will taste like at the opening note before they have read the rest of the recipe. They can also predict the kinds of mistakes the recipe is vulnerable to — a recipe that calls for ground cumin in long cooking is likely to leave its base flat by the end; a recipe that calls for fresh basil at the start of a tomato sauce is likely to need a second handful at the finish; a recipe that calls for hot-oil-blooming spices on a wet pan should be approached with a dry pan and a focused minute of attention.

This is the same operation the cook practiced in Chapter 1 for the seven axes of flavor and in Chapter 4 for stocks and extraction: reading a recipe for its *grammar* rather than its *list*. A recipe is a list of ingredients and a sequence of operations; a dish is a structure that can be analyzed. The cook who can analyze the structure can correct a recipe that is wrong, substitute when an ingredient is missing, scale up or down, and most importantly *understand* what the dish is doing — which is the difference between following a recipe and cooking.

The glossary terms that anchor this chapter are useful references for further reading: [aroma-base](#), [spice-oil](#), [spice-blending](#), [herb-infusion](#), [mirepoix](#), and [flavor-infusion](#). Each is a deeper treatment of one piece of the grammar laid out here.

11 · Summary

The reader who has finished this chapter has gained, at minimum, four things.

First, the unified motion. Aromatic, in fat, released by heat, before the bulk arrives. One motion practiced across mirepoix, soffritto, sofrito, tadka, ginger-scallion, adobo, sả-tỏi-hành, krachai paste, and every other named aromatic base in the world. The cook now reads them as variations on a shared grammar rather than as separate techniques to be memorized.

Second, the four states. Whole, cracked, ground, paste. The same spice in different states is functionally four different ingredients.

Third, the five release media. Cold oil, hot oil, butter, dairy, alcohol. Each pulls different compounds from the same aromatic and produces a different opening note. The cook can choose the medium deliberately rather than defaulting to whatever fat is nearest the pan.

Fourth, the arrival moments. Early, middle, late, after. *When* the aromatic arrives is as much a decision as *what* the aromatic is.

What the chapter has *not* given the reader is a list of recipes. Those live elsewhere on the site, and the chapter has linked to nine of them as worked examples. The chapter is the grammar; the recipes are the practice.

The next chapter of this Atlas is about **fermentation and time as a flavor variable** — what happens when an aromatic, instead of being released into a fat in the moment, is held in a controlled environment for days, weeks, months, or years. The chapter will look at fermentation as the *slow* counterpart to the *fast* aromatic work of this chapter.

The aromatic base is not a step in the recipe. It is the dish's first sentence. The cook who learns to write that sentence cleanly has, in most traditions of the world, written most of what the dish will say.

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