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Keeping Pace With the Changing **Chile**

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Keeping Pace With the Changing **Chile**



Oenophiles have developed a whole lexicon of descriptors—“musty,” “earthy,” “barnyard,” and “wet socks”—to underscore just how complex a sensory package we open when we uncork a vintage varietal. When a group of panelists gathered at a culinary center in Omaha not long ago for a deliberative tasting of their own, terms like “grassy,” “tobacco,” “raisin,” and “smoke” animated the session. The only catch was that these panelists weren’t sampling 2004 Sonoma Sauvignon Blancs. In fact, the delectation up for discussion was one that, until recently, many would describe with one word: hot. They were tasting chile peppers.

Chiles go gourmet

Just as an afternoon at a winery yields pleasures beyond alcohol, a sensory celebration of chiles pays dividends far beyond their legendary heat. Peppers have joined a growing list of uncommon commodities, from coffee to chocolate, whose sophisticated flavors provoke as much contemplation as fine wines.

Amy Marr, director of marketing, Gilroy Foods™, Gilroy, CA, understands why. “I definitely recognize the flavor differences among different Chardonnays,” she says. “I’m interested in whether that’s an

oaky flavor, or if I’m getting different citrusy notes—in what sets one apart from another. We all know how important those subtleties are. It’s really the same effect you get with all these peppers.” Mother Nature didn’t design all wine grapes alike, so why would we expect her to make a jalapeño taste like a poblano?

Increasingly, we don’t. In an age when even mainstream consumers are absorbed in matters of taste, interest in creative chile cuisine has reached an all-time high. “At one time, chiles were a very small niche,” says Joe D’Auria, food technologist, research and development, Spicetec, Cranbury, NJ. But not any more. “They are definitely in the mainstream now.”

Pick a peck of pepper profiles

Increasing familiarity has only inspired a greater exploration of the diversity of chile flavor. “In the last two decades, the taste for chiles has expanded from a regional interest in Louisiana and the Southwest to the country as a whole. As people experiment, they come to realize that chiles offer more than just heat; they contribute to flavor, as well,” says Dave DeWitt, author of numerous books on all things capsicum, including the award-winning “The Chile Pepper Encyclopedia.”

Matthew Burton, C.R.C., C.E.C and director of culinary innovation at ConAgra Foods, Omaha, NE, agrees. “All you have to do is look at your hot sauces,” he says. “A few years ago, it was, ‘How hot can I make it?’ That was all people cared about.” Now flavor accentuation is the name of the game. “The perfect example is habanero sauce,” he continues. “It’s being matched with citrus; you see habanero-mango—they’re highlighting the citrus and fruit aspects of the chile rather than the heat.”

D’Auria waxes like a wine aficionado about chiles’ flavor diversity. “When we go through the descriptors, you hear terms such as ‘plum’ and ‘smoky’ and ‘tobacco,’ maybe even ‘raisin,’” he says. So once you get past ancho’s heat, “you’ve got those fruity, coffee, tobacco and raisin notes,” he explains. In the chile de arbol, he detects a smoky, grassy character with “an almost acidic note on the tip of your tongue.” And while he lauds the chipotle as a great source of focused heat, “the smokiness of it is what surprised me more than anything. When you start breaking these chiles down, it’s amazing how much you actually learn about the individual peppers.”

That includes the notorious habanero—a pepper that, Burton says, “people want to try, but are fearful of its heat.”



Habaneros lend themselves to a wide range of applications once product designers learn to put the chile's lightly fruity flavor as well as its powerful heat to judicious use.

Yet, as Jane Dong, a food technologist at Gilroy Foods, notes, “the habanero pepper surprises people with some of its lighter, citrusy, or fruity notes ... something that you wouldn’t typically expect, knowing that this is one of the hottest peppers.”

Consumers increasingly seek out these flavors. While the first generation of pepper products got by on mostly a wallop of heat, today’s consumers are impressed by the force of flavor, not fire. As Dong says: “What captivates people about this? Some would say it’s just the allure of heat—a result of capsaicinoids. But really, it is the profile of the capsaicinoids of different peppers that determine where in the mouth heat is perceived, and how long it lingers. The flavor and the melodic play in the mouth, the background note—that’s what they’re looking for.”

What’s holding us back

Chiles haven’t always been the most cooperative ingredients to work with. Given to nature’s whims, variable growing conditions and the complexities of genetics, they can be downright finicky. “You’re dealing with produce,” cautions DeWitt. “And you’re dealing with produce that is fragile, and that can very quickly deteriorate in quality if it’s not kept refrigerated. It can bruise. It can have sunscald.” Peppers cannot escape the many challenges of fresh produce.

There is also a variable supply of chiles. “If you were to go out into the market to source a readily available, commercial-quantity supply,” Dong says, “you’d find that it’s not there. You can sometimes find it in the stores fresh or dried, but depending on what region of the country you’re in, you might not have access to the particular chiles you want.” In an industry that lives or dies on volume contracts, which are often locked-in years in advance, fooling around with here-today-gone-tomorrow inputs just isn’t an option.

Even if a manufacturer can source sufficient peppers to meet production requirements, it’s often only through a patchwork of suppliers with uneven quality standards. Variations in size, shape, color, capsaicin concentration and even product safety are commonplace—witness tales of unacceptable pesticide residues and, in 2003, the European authorities’ detection of Sudan red dyes in ground capsicums from India.

Handling peppers in the plant is also difficult. Dried chiles may need extensive cleaning to remove insects and debris, and fresh product isn’t necessarily easier to process. Capsaicin is an alkaloid so powerful that it requires careful safety measures.

Domesticating the chile

It’s a relief to learn that some ingredient suppliers now shoulder

Gilroy Foods spent years establishing a worldwide network of sources which can guarantee a standardized, safe and sufficient supply of fresh peppers.

these burdens. Gilroy Foods spent years establishing a worldwide network of sources which can guarantee a standardized, safe and sufficient supply of fresh peppers. And as a veteran vegetable processor with technologies in place, it has the capacity to turn raw product into convenient ingredients with far less effort than an operation whose guiding principle isn’t “all chiles, all the time.”

The peppers in its portfolio range from familiar paprika to current favorites like chipotle and jalapeño, to chiles on the verge of breaking into the mainstream: poblano, serrano, habanero, guajillo, pasilla, ancho and de arbol. Forms such as flavors and oleoresins, dried seasoning blends, *Softfrozen*TM purées, and *Controlled Moisture*TM frozen strips and dices not only answer the question of where to find varietal chiles, but deliver them in a medium that is ready to drop right into a formula.

New avenues for chiles

That still leaves open the question of what formulas to drop them into. Says D’Auria: “We’ve had many times where a customer would say, ‘What’s hot out there? Give me a list of 10 things that you think are cutting-edge.’” Then, taking the product considerations into account, “we’ll set up a brainstorm session between chefs, product developers and marketing and then send them a list,” he says.

“One of my favorite dishes is chipotle sorbet. Talk about a multi-sensory experience. You get the smoked flavor, you get ice-cold on your tongue, and then it starts to get spicy.”

The leading chile products remain sauces and salsas, DeWitt says, “but coming on strong are snacks and sweet heat—candies, jams, jellies.”

Burton has played around with that concept for years, with some surprising applications to show for it. “One of my favorite dishes is chipotle sorbet,” he says. “Talk about a multi-sensory experience. You get the smoked flavor, you get ice-cold on your tongue, and then it starts to get spicy.” He’ll drop a dollop on gazpacho to tweak the soup’s classic theme. He has also added chile flakes to chocolate popcorn bars. The effect isn’t overt, he says; rather, “It’s one of those, ‘Hey, this is really good’ moments, but you don’t necessarily understand why.”

Burton blended ground ancho peppers with sugar and ran it through a cotton-candy machine. “I’m not putting it on the market just yet, but it’s one of those fun hors d’oeuvres to pass around.” He’s floated habanero-spiked marshmallows on hot chocolate: “It had a sweet fruitiness up front, and then it got a little hot in the finish. So when the heat starts to build, that’s when you take your sip of the hot chocolate, and that creaminess then coats your mouth so you can start all over.”

In America, chiles used to wind up mostly in evening dishes. But, “they’re starting to move more mainstream into sandwich spreads and salad



Adding chiles to sorbet can create a new and stimulating eating experience.

dressings, even egg and breakfast dishes,” Marr says. Burton thinks they go really well with eggs, especially cascabel peppers. “They’re a little bit mellower,” he says. “There’s a little bit more of a flavor there, almost a fruity note. Not citrusy—more of a melonesque note.”

Chiles can transform most any bland dish and “make it sparkle,” suggests DeWitt. He adds chipotles in adobo to traditional turkey gravies for “a new flavor profile” and punched-up heat. “Habaneros added to fruit salads is another good flavor effect.” And a strategically chosen chile can ground a dish almost anywhere on the culinary map. He recommends ancho and pasilla to suggest Mexico’s cuisines, New Mexican green and red chiles to reinforce Southwestern themes, and habaneros and Scotch bonnets for a Caribbean note. Cayenne and tabasco are practically synonymous with Louisiana, and even paprika calls to mind Hungarian stews and—when smoked—the savory specialties of Spain’s tapas bars.

Putting peppers to work

Thus, as Cathy Katavich, director of research and development at

Gilroy Foods, says, while some in the industry may think that chiles belong only in products that make a point of their heat, “peppers with less or no heat remain a powerful flavoring tool, and a draw for some consumers.”

The secret to deploying heat wisely, D’Auria says, lies in knowing its limits. “If a customer is going to put 8 oz. of a snack in a bag, I want it to have just enough heat for the consumer to be able to finish the bag,” he explains.

It’s a matter of balancing flavor versus fire. Take a jalapeño-Cheddar profile in which, “if you were to go all out with the jalapeño, you wouldn’t taste the cheese,” explains D’Auria. “So you try to have different levels of flavor coming at different times, so that when you first taste it—whether it be on a potato chip or popcorn—you get that cheesy dairy note first, and then you want that heat to come in at the last minute. If you have that heat coming in at the beginning, it’s going to mask everything in that whole profile.”

Burton advises not just to consider how much chile to add, but also the delivery forms. He has worked with the GardenFrost® purées and



Popular applications can generate interest via use of ethnic flavors. Consider an inspired Latin twist on all-American pizza by adding carne asada and strips of poblano peppers.

Controlled Moisture frozen pepper strips and has opinions as to where each works best. Speaking of the purées, he says, “what’s nice about them is that you don’t have to use a lot for their flavor. You just add a little bit, even in combination. The example I use a lot is a jalapeño purée and a serrano purée. I always use those together so I get a great depth of flavor.” Chile strips, on the other hand, deliver what he calls “that wow factor, that visual pop. That’s what the

Gilroy Foods Controlled Moisture Vegetable line accomplishes. Having those frozen and very easy to use, I can actually see the chiles. And the fact that you can get them fire-roasted, so there’s that little bit of char on the outside, shows that a little more time was taken with them.”

Roasting offers more than just visual appeal. Processing—either by roasting or drying—makes a world of difference in a pepper’s flavor. During the drying process, DeWitt

explains, “the flavor components all change, and you get away from the fresh, green, bell pepper flavor that so many of the green chiles have, and you find out what the true flavors are going to be, as when a chilaca matures into a dried pasilla. You lose that green flavor completely and get a very raisiny flavor and aroma.”

So, Burton says, “if I’ve been making this great ranch-style dressing but I’m looking for something a little bit different—maybe to give it a little bit of smoke so I can use it on a protein salad—I would use our dried pasilla and our dried ancho purées. They’re smoky and a little bit sweet, and you can simply add them

Calling Authenticity by Name

The macro trends of ethnic and authentic set the framework for chile popularity, notes Amy Marr, director of marketing, Gilroy Foods, Gilroy, CA. “Consumers are more well-traveled. Immigration factors in, as well.” All of these trends drive the adoption of different types of peppers.

And although it’s something of an industry cliché that the Food Network and other culinary media have raised awareness about global cuisines and ingredients, they really do deserve credit for helping establish chiles in America’s dining culture. “I think the Food Network has done a big service,” says Matthew Burton, C.R.C, C.E.C and director of culinary innovation at ConAgra Foods, Omaha, NE. “Rick Bayless has been a huge forerunner in promoting chiles. Bobby Flay was also big for chipotle. He’s the one who started putting it on the menu at Mesa Grill, and then you started seeing it on his TV show.”

All these factors have had a “multiplying effect” on consumers’ demands for culinary authenticity, says Marr. And peppers, she points out, “are a key part of that authenticity. When you look at ethnic foods—especially the three main categories: Asian, Mediterranean and Latin—you’ll find chiles across all these cuisines. Some of the Mediterranean chiles cross over into some of the Latin cuisines and vice versa. But when you really look at the flavors they impart, that’s when you really start to hit on those authentic regional profiles.”

And hitting them convincingly counts. “With today’s consumer, there’s no substitute for authenticity,” says Joe D’Auria, food technologist, research and development, Spicetec, Cranbury, NJ. That’s as true in the quest for a cuisine’s essence as it is in the pursuit of genuine chile flavor. “People in every age group

and pocketbook range know what these peppers taste like, and you’re not going to fool them by telling them that it tastes like something when it doesn’t,” he says.

Thus, gone are the days of the nameless, faceless pepper. “It used to be, maybe 10 years ago, that when you saw peppers used in American cuisine, it would just say generic ‘chile,’” Marr recalls. “Well, it’s not just saying ‘chile’ anymore. It’s saying ‘chipotle’ or ‘ancho.’ And that’s helping consumers identify and feel confident that they’re getting authentic flavors. If a consumer has traveled to Latin America and has tasted a de arbol or a serrano, and they come back and see those names on a menu or label, that’s an important thing. But even if a consumer hasn’t traveled abroad or hasn’t tried a specific pepper, like a serrano, the power of that name still tells them that they’re getting something authentic.”

Today's consumers want flavor variety along with a serving of heat. A spicier serrano adds a unique twist where jalapeño was traditionally used.



right to the ranch dressing. They'll also add a bit of a darker color, and you're getting that great depth of flavor with the sweetness and smokiness, and it's being distributed evenly throughout the product."

Not every application can accommodate a purée's particulates, however. So when the situation calls for stealthier chile character, flavor ingredients provide the answer. Extracting the heat and flavor components individually and recombining them in a flavor ingredient creates the opportunity to engineer a pepper profile that meshes perfectly with a product. "We call these flavors building blocks," D'Auria says. "We're building a complete profile."

So when a customer recently asked for "a profile that had very little, if any, of the heat of the jalapeño," says D'Auria, "we worked on an application with them where our flavorist actually came up with a very good green-note jalapeño flavor with no heat at all."

Adds Burton, "We can really help pull back some of the heat when we work with customers to highlight just the citrus notes of habanero, or the other flavor notes of any other chile."

As D'Auria describes it, "You have your base profile, your middle notes, and then you come in with your flavors, which add your top notes—or what we call 'keys'—so you can isolate one particular flavor inside that whole profile to make it a little stronger, whether it be the heat or a tobacco note or a raisin note."

Flavors also provide process tolerance fit for the rigors that a typical prepared food faces. "That's what puts the 'science' in the food

science," D'Auria says. "We ask whether the chile is going into a sauce or a gravy or a topical shake-on seasoning for a potato chip where you might need a little starch to bind

everything. You're not supposed to know everything." And he's still mastering the subject. "There's a ton for people to learn," he notes. "But I think the time is ripe and that

Emerging	Gaining Popularity	Mainstream
Cascabel	Habanero	Ancho
Scotch Bonnet	Serrano	Pepperoncini
Arbol	Anaheim	Poblano
Bird (Thai Bird)	Banana Wax	Cayenne
Chiletepin	Guajillo	Cherry Pepper
Hungarian Wax	Pasilla/Pasilla Negro/Chile Negro	Chipotle
Fresno		Jalapeño
Guero		Paprika
Hatch, New Mexican		Pimento
Malaguata		Sweet Bell Pepper
Rocoto		Tabasco

Source: FoodWatch April 2006

that flavor to the chip, or you might combine different starches to withstand high heats and longer heat exposures. Is freeze/thaw stability an issue? Is it something that's going to be frozen and then heated up? What about shear? We have to know the end results on how the customer is going to use this product. Any time we can take another step out of the hands of the customer, they appreciate it."

Burton agrees. "People need to learn to trust their suppliers," he says. "Ask the chefs at companies like ConAgra Foods that work with these products. Don't be afraid to ask questions. You don't have to know

people want to learn more about these peppers. And it's time that we, as an industry, shouldn't be afraid to share some of this knowledge and work with other people and other chefs and product developers. Because you never know what's coming out next." ■

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