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## NOODLES, A LOVE STORY

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PHOTOS BY LEAH HARB

 Print

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# NOODLES A LOVE STORY

A RAMEN LOVER LEARNS ABOUT THE SUBTLETIES OF WHEAT DURING AN ASIAN NOODLE TECHNOLOGY COURSE. BY LOLA MILHOLLAND

Grain shipments arrive by train and barge to a silo on the Willamette River.



PHOTOS BY LEAH HARB

Along the western shore of the Willamette River, nestled against the Broadway Bridge, stands the old Albers Brothers Mill. Though the building seems something of a relic—painted with logos from a bygone era for Flapjack flour, Peacock buckwheat flour, and Minit oats—it houses the Wheat Marketing Center, one of the world's most sophisticated wheat and noodle laboratories. Six chemists and food scientists spend their days in a Willy-Wonka-like dreamscape of surreal technology, including the colormetric analyzer, which evaluates dough brightness, and the TAxT2 texture analyzer, which uses an artificial tooth to rate noodle springiness.

Why is an ultramodern wheat and noodle lab operating in the center of Portland? The answer touches on the role wheat plays in both the Oregon and U.S. economies. Wheat is Oregon's sixth most valuable agricultural commodity and its largest grossing export, estimated at \$200 million annually. We ship 85 to 90 percent of Oregon wheat abroad, which contributes to the U.S. position as the world's largest wheat exporter.

Additionally, much of the approximately 34.5 million metric tons of wheat that the United States sent outside our borders this past year paused in Portland because of long-established trade routes. Picture the cement building near the Rose Garden that sometimes showcases a Gulliver-sized poster of Trail Blazer Greg Oden and other times reads: "Amazon.com wouldn't fit here." Believe it or not, 40 percent of all U.S. wheat fits into that silo at one time or another, in coordination with two similar export facilities— one just north of the Broadway Bridge on the east side and the third near the juncture with the Columbia. All together, this makes Portland one of the world's great wheat export centers.

In 1989 U.S. Senator Mark O. Hatfield founded the Wheat Marketing Center (WMC) to serve as a bridge between wheat growers and their customers around the world, including the large number from Asia and Oceania, where noodle preferences are precise and demanding. Dr. Guaguan "Gary" Hou, the Technical Manager & Asian Foods Specialist at the WMC, greets me at the reception desk. A playful yet scrupulous man with a trim black mustache, thin-rimmed glasses, and neat khakis, he moved to the United States after graduating from Wuxi University of Light Industry, now Jiangnan University, which is home to one of China's most renowned food science and technology programs. Dr. Hou joined the WMC in 1995, and has focused much of his energy researching Asian noodles ever since, investigating wheat-intensive questions like: How do different flour varieties affect noodle texture, color, and strength? What amounts of the grain's protein, starch, and ash content make a noodle chewy, slippery, or firm? He shares his research with visitors from near and far through courses such as the one I've come to attend: Asian Noodle Technology.

The day before the seminar begins, Dr. Hou leads me through the WMC space. Just across from his office, we peer through a glass wall into an oblong white room divided down the middle by a 20-foot- long machine of shining metal rollers, giant red and green Stop and Go buttons, and sunflower- head-sized dials. This is the Tokyo Menki Pilot Mixer MT 1-3 (the To- men), Dr. Hou tells me, the only noncommercial, commercial-grade "noodle line" in the nation.

"Here we can produce and test noodle products the same way as in the industry. Tomorrow we will make fresh white salted noodles," he informs me. "During the four days together, we will examine noodle formulation, the newest processing technology, flour specifications, and evaluation techniques." His scientific candor almost obscures the subject at hand and the object of my affection: simple, delicious wheat-flour noodles.

I return to the WMC the next morning. With me are 17 representatives from the global wheat sector who've each paid a \$1,000 seminar fee, among them a quality-control specialist from Japan's largest flour mill, a Columbian noodle manufacturer, and three Nigerian technologists. Nigeria has become one of the largest U.S. wheat importers, and these three women work for one of their nation's foremost wheat recipients, Crown Flour Mills. The senior manager, Grace Adeniji, is a brusque, stately woman who explains that they are in the midst of developing the company's first two instant noodle flavors and have come to determine their additional technological needs. (I ask her later what the two flavors will be, and she responds perplexingly, "Spicy Chicken and Chicken Pepper.")



I sit quietly, too shy to share my own motives for attending. Months ago, I had come home one night to find my quixotic roommate Cynthia unloading bags of pork bones and flour onto the kitchen counter. "I'm making homemade ramen tonight," she announced enthusiastically. My brother and I looked on in disbelief, before he asked snidely, "Have you seen the movie *Tampopo*?" He was referring to a 1985 Japanese film that follows one woman's quest to create the perfect bowl of noodle soup, and all the blood, sweat, and tears she exuded. "Cynthia, making ramen is really hard," I added sadly.



Most Americans have a limited vision of ramen as simply scrumptious, calorific, cheap-as-dirt junk food. It

makes sense: If you only ate 3-for-\$1 packages of Maruchan or Top Ramen growing up, why would you conceive of something else? I never did until I lived in Japan, where in small shops with long soda-fountain-style countertops, I ate real Japanese ramen— steaming bowls of springy, squiggly, hand-rolled noodles in homemade broth that had been tended to for hours. At its best, ramen broth tastes like a magical, succulent scallop and ramen noodles are so pliant and fun that they make me laugh and cry at the same time.

"Do you have a ramen recipe?" I asked Cynthia, all of a sudden desperately nostalgic. "No," she conceded. And so we began to search. It was dismal—no one will reveal the secret steps to make the pitch-perfect broth or pliable noodles. I made batches of noodles that stood too stiff or melted into mush. As I'd feared, making ramen noodles is a nuanced activity; it takes practice and technique, and there are lessons that you can only learn with guidance. As Dr. Hou prepares us for the coming day, I begin to realize how much wheat and flour quality and variety impact the final noodles. "If the flour performs," he explains, "everything else is secondary."

Asian noodles come in as many varieties as there are human emotions, so there is no single, ideal noodle flour. Rather, each noodle type demands its own wheat blend. Noodle texture is, to a large extent, about the counterbalance between the flour's protein and starch content. If you want to make something soft and smooth like Japanese udon, for example, you'd select a low-protein content wheat variety or blend. If you want something chewy but smooth like *yakisoba* noodles, you'd go for a mid-protein content blend. But protein content is only part of the picture, and in the end, the explanation for what makes one bag of ground-up grains more appropriate than another is as complex as the technology all around us and one *raison d'être* for this cutting-edge facility.

We head into the noodle lab, don lab coats, and soon begin our trials of the "fresh white salted noodle," a common Chinese soup noodle. We have a standard recipe formula, but with each batch we use different single-wheat varieties or blends, passing seven distinct doughs through the *To-men* machinery to see how each performs.

The following day, Dr. Hou guides us through our first sensory evaluations. As we examine and compare each batch— thoughtfully eyeing the swimming noodles for color, luster, and integrity, then biting down on each strand to test its resilience, and slurping it to rate the noodle’s “mouth feel”—I perceive that noodles are not just a foodstuff; they are also a form of entertainment. We have not come to the course to learn precise noodle formulas, but rather to understand the performance occurring in our mouths and before our eyes and then describe it. In the process, Dr. Hou is teaching us a common language so that the noodle manufacturers, U.S. wheat scientists, and flour mills can communicate with one another.

Dr. Hou is not the only scientist in Oregon performing advanced noodle research. In Corvallis, Dr. Andrew Ross, a cereal chemist in the Oregon State University Crop and Soil Science department, has been working with an Oregon wheat grower to develop and test numerous varieties of hard white wheat, which makes noodles brighter than other varieties with the same protein and starch contents. Ross is trying to determine if increasing the amount of hard white wheat grown in Oregon can help farmers, who mostly grow soft white wheat, better tap into the lucrative Asian noodle market. His laboratory is equipped with fantastic devices to measure noodle qualities, including elasticity, slipperiness, and color. “Whether or not Westerners perceive any differences,” Dr. Ross explains, “Asian customers do have preference in noodle color and texture.”

I can’t help but wonder if Dr. Ross’s precision isn’t excessive given that U.S. wheat growers are paid fluctuating commodity prices based on their yield, not on qualities such as whether or not their crop is ideal for Asian noodles. Almost all the hard white or soft white wheat is pooled together, so any carefully cultivated varieties get subsumed in a massive ocean of grains.

The U.S. wheat sector aims (and blends) for consistency rather than specificity. Katherine O’Brien, Wheat Lab Manager at the University of Idaho, explained that “we want a pool of good stuff,” rather than distinct flavors. As a result, for noodle manufacturers abroad who can work with growers in Australia, for example, to cultivate fields specifically for noodle production, generic U.S. wheat is a more difficult sell. But for Dr. Hou, this means he has all the more necessity to be cunningly persuasive to potential customers.

Over the last two days of the course, we continue our noodle trials with parboiled white salted noodles and egg noodles, steamed yakisoba noodles, and instant ramen noodles, which, believe it or not, we steamed and then deep-fried. I recall the diversity of noodles at Fubonn, Uwajimaya, and other Asian markets on the outskirts of Portland, and for the first time, I realize that many of my purchases at these stores have boomeranged from Portland silos across the Pacific Ocean to Japanese noodle manufacturers and then back into my soup bowl. I can’t tell if I feel guilty or worldly.

While we clean up around the *To-men*, the noodle manufacturers express frustration at the current wheat price fluctuations. During the past two years, wheat prices have swung higher and then snapped lower than at any point in the last decade, for reasons including increasing worldwide demand for wheat, two years of intense drought in Australia that decimated wheat crops, and the U.S. financial crisis. It makes your heart ache for the wheat growers and millers who are experiencing the sting most viciously.

This price plunge begs the question: Is there a more stable alternative to the current system? Could wheat farmers differentiate their products to avoid the hazards of the commodity market? The answer is gnarled around everything from national Farm Bill politics to American spending habits, but at a basic level, yes, there is room for more single-variety, small-batch wheat in our market, if American eaters decide they want more. Think, for a moment, of the fair-trade coffee movement, which has brought coffee growers living wages and coffee drinkers greater appreciation for distinct, “identity preserved” varieties.



Both Dr. Hou's and Dr. Ross's trials seem to negate the question of wheat flavor. We never rated taste while we eyed and slurped our noodles. I wonder if most of us ever consider wheat flavor, instead treating it as though it were one-dimensional. This is one result of mass-produced flour: We miss out on the musky fragrances and complex flavors of distinct wheat varieties from specific places.

What if eaters in Portland began paying attention to noodle qualities that would include springiness, color, texture, and flavor? What if we created a noodle-loving culture, and it was completely inextricable from our intimate appreciation of Pacific Northwest wheat? Does that seem more far-fetched than a machine that blows dough patties into bubbles to record gluten strength? With all the grain that passes down the Willamette right under our noses, I don't think it does. The first step will be to seek out and taste local small-batch wheat—and maybe try our hands at making some noodles.

On our last night together, we go to Mandarin House, a restaurant on the second floor of the Saturday Market building. Dr. Hou is a friend of the owners and has ordered a special meal for us. He has also asked for an exclusive demonstration of hand-stretched noodles. In the middle of the small space, an elderly Chinese man appears in a white cap, white dress shirt, and white apron. He throws a handful of flour across a long table and then smacks down a mound of white, shining dough.

For long, silent minutes, we watch him pull the dough apart in the air like an accordion and then bounce his arms up and down as the dough sags and stretches. He folds the thin rope of dough in half, throws it to the table, twists it into a tight coil, and then hefts it into the air and stretches it wide again. As he does this over and over, we watch him become fatigued; but his face only becomes more intense and determined. I'm deeply moved and inspired by his performance, seeing the years of experience in each movement.

The flour performs beautifully, giving the dough the elasticity of an enormous wad of bubble gum. Over my shoulder, one of the wheat scientists whispers, "that can't be more than 10 percent protein." From all I've learned in Dr. Hou's course, I'd guess it was 8 percent, probably thanks to some Oregon or Washington soft white wheat that was mixed in.

During the final minutes, the air feels electric. He pulls and twists and folds until his arms are filled with dozens of thin noodles like loosened guitar strings. At long last, he hands over the noodles to the chef and takes a bow. A few minutes later, the restaurant owner presents the noodles at our table, freshly boiled and then tossed in a few spoonfuls of chili oil. As I eat them, I feel that familiar urge to laugh and cry at the same time.

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