

SPICE, THE VARIETY OF LIFE

Issue 25

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Wow! This year is flying by.

As I said last month, Gwen's Blends has been going through a bit of a transition. Rebranding was a big deal for me, and it has led to a lot of other ideas about taking things to the next level. Nothing radical, and certainly nothing that affects the quality and pricing of my blends, but more along the lines of reaching a larger audience.

I am not sure exactly what that looks like, but I'll keep all of you in the loop as I figure it out.

In the meantime, please enjoy this month's article, and if you enjoy it, please share with anyone that enjoys food.

Gwen



The Art? of Cooking

While we all know that really good food comes from the heart, it is also true that much of what we do in the kitchen to manipulate the foods we are preparing is based on scientific process. I think you all know that I am a geek first, chef second, so the science intrigues me. Let's take a look at some of those scientific things and hopefully you will find some of it intriguing as well.

Sidebar: Did you know that the word "chef" comes from the Latin "Caput" which meant "head". This was transformed into "Chief" and then shortened to "Chef".

Have you ever wondered why you can reach your hand into an oven set to 450° and not feel anything more than a bit of warmth, but if you were to stick your hand into boiling water at 212°, you would suffer some pretty serious burns? It is the same sort of effect that while running your finger through a flame is not dangerous, but dripping hot wax on your skin can create a significant burn. The answer is Science, of course. Heat is transferred in several ways, with the heat being transferred from molecule to molecule. Most ovens utilize convection, or the circulation of hot air around the food. It can be passive, like most standard kitchen ovens, or active like "Convection Ovens". The molecules in air are spaced somewhat far apart compared to a liquid, so fewer are in actual contact with your skin at any given moment. Conduction, on the other hand is the act of applying heat

directly to an item. When you touch the boiling water or melted wax, the denser arrangement of molecules in the liquid, means more heat being transferred directly to the skin in contact with the liquid. These are the two most reliable and consistent methods of cooking.

The other two major methods of cooking are a little less consistent and accurate. Radiant heat, cooking over an open flame, like on a grill, combines both convection and conduction. The flames are heating the air, but they are also heating the grill, so the food is getting a double whammy and without close attention can end up being overcooked or cooked unevenly. The fact that the fire is outside and subject to the wide-open spaces, also means a lot of heat is lost adding to the lack of precise control. Radiation, or microwave cooking, is the least predictable method. Electromagnetic waves carrying heat move through the food with a sort of random pattern, leading to what we have all seen come out of a microwave, raw on the inside and burnt at the edges. Microwaves are great for short spurts to re-heat things, but for longer term cooking, not so much.

Frying, while technically a type of conduction, has a few idiosyncrasies that make it a little different. The temperature of the oil is usually quite high to facilitate the cooking without allowing the oil to penetrate your food. That is why smaller pieces of food fare better in the deep fryer than larger ones. The more surface area, the more evenly the food cooks. Different oils also act differently. Oil high in saturated fats (animal fats) will produce a crispier crust, but as we all know, that comes at a price in terms of cholesterol. Lower saturated oils (plant based) are more commonly used. Try to pick one with a higher smoke point (meaning less likely to burn) and a taste that will not conflict with what you are preparing.

Why cook meat at all? Why don't we eat it raw like our ancestors? Good questions. The main reason is that unlike our ancestors that killed and ate their meat in a short space of time to prevent getting sick from rotting meat, we now have a greater length of time between the killing and the eating, so there is more of an opportunity for the meat to become tainted. Cooking eliminates the hazard of pathogens and parasites. Cooking also does something else amazing. It breaks down the proteins in

meat and makes them easier to chew (unless of course you cook it to death). Why that matters is that we don't have the same kind of teeth that our ancestors did. Evolution downsized our teeth to make more room in our skulls for brains, which allowed us to be able to figure out that fire + meat = easier to chew among other things. Acids can also be used to break down the proteins in meat, which is why we tend to marinate tougher cuts of meat like flank steaks or London broil.

Sidebar: The Maillard Reaction is the browning of meat over high heat, caramelizing the natural sugars in meat and enhancing the flavor. Patting the meat dry before cooking maximizes the effect.

That leads us into our next science lesson on Brining. Brining means to drive water out. It concentrates flavor and depending on the water content can firm up texture or tenderize. A brine is generally considered to be a liquid made with salt and water but brining can also mean pre-treating with salt for a length of time. Most brines also include sugar to help round out the profile. In brining, or more commonly called pickling, vegetables, however, the sugar plays a more important role. I once tried to make pickles without sugar for a friend on a zero-carb diet and they were awful. Much of cooking is like chemistry. Just like layering flavors changes the way things taste, combining certain ingredients can change the molecular structure of some foods and that also changes the taste/texture. Dill pickles made without sugar in the brine end up having a bitter taste. It is also important to note that not all things will brine well. Meat for example tends to be a good substrate since the high salt content penetrates the tissue of meat and dissolves proteins that would otherwise contract during cooking, leading to a more tender piece of meat. In the fruit and vegetable world the higher the water content, the better the final product. Cucumbers, cabbage, and onions all pickle remarkably well. Potatoes, hard winter squashes and Brussel sprouts, with their lower water content, not so much.

Brining leads us to fermentation. Fermentation is the anaerobic breakdown of carbohydrates. It is facilitated by organisms like bacteria or yeast and in its simplest form is

the breakdown of complex carbohydrates to simpler compounds like alcohol or organic acids. Think cabbage to kimchi, or grape juice to wine. From Yogurt to sourdough bread, fermentation is a more widely used process than most of us realize. If you are interested in giving it a try, Alton Brown actually has several How-to videos and several chapters in his cookbooks devoted to fermentation. There's a recipe to try at the end of the column.

So, there you have it. A brief summary of how understanding science can help you grow as a chef and lead you to making some amazing food that you might not have dared try. I hope I didn't bore you!

See you soon!

Gwen

Fermented Corn Salsa

Ingredients

- 3 C Corn kernels
- 3 T Onion, diced
- ¼ C Tomato, diced
- 2 T Bell pepper, diced (to increase heat, up the Scoville count on your peppers)
- 2 Garlic cloves, minced
- 2 T Lime juice
- 1 tsp **Southwestern Rub**
- ½ T Salt
- 3½ C Water

Instructions

Add all of the ingredients except the salt and water in a large bowl and toss together.

Mix the salt and water, set aside.

Fill a 1 qt jar with your salsa, packing it down somewhat until it reaches about 2-3 inches of jar unfilled.

Place a fermentation weight on top to prevent vegetables from floating when you add brine.

Pour brine over everything, including weight, leaving the

air space unfilled.

Close the jar and leave in a place that is between 70-80° F for 48 hours.

Open and taste, if it needs more tang, re-wash the weight and place back in the jar. DO NOT ferment for over 72 hours.

Eat right away or refrigerate for up to 2 weeks.



What's New!

Can't wait to see you at my upcoming festivals!

Spring Capital Arts and Crafts Festival

March 21-23

Dulles Expo Center, Chantilly

Annual Hayfield Secondary Craft Fair

April 5 10 AM – 4 PM

7630 Telegraph Rd, Alexandria, VA 22315

South Riding Mosaic Festival

May 3 2 PM – 6 PM

South Riding Town Square

Old Town Arts & Crafts Festival

June 7 10AM – 5PM

Old Town Alexandria Waterfront at the base of Prince
Street