



From Farm to Fork

An exploration of the history of plant breeding
through cooking

Mishi Vachev

Welcome!

Welcome to a cookbook that seeks to not only share simple, delicious recipes with an audience of varying culinary expertise, but also delve into the agricultural history behind the foods we eat every day. It has become all too commonplace to place produce into the shining metal of our cart at the grocery store without thinking about where exactly those apples came from. But this is at no fault to the consumer or grocery stores. Instead, this can be viewed as an opportunity to explore how those apples came to be and the history behind where, when, and why we cultivated the produce we consume daily. The presence of nearly all fruits and vegetables that exist in today's society is largely thanks to the field of plant breeding which strives to create new cultivars with improved qualities. This cookbook aims to mark some notable events in plant breeding's history and pair these events with a recipe featuring the crop of focus. Obviously, not all events are featured here and those that are mentioned are not necessarily the most important. They're simply the easiest to make recipes from. Perhaps one day I will make a cookbook with every commercially available crop and every discovery in plant breeding, but for now these few recipes will suffice. So, welcome to an exploration of the history of plant breeding, as told through recipes, and enjoy.

Best,

A handwritten signature in black ink that reads "Mishi Vaela". The script is fluid and cursive, with the first name "Mishi" and last name "Vaela" written in a single, continuous line.

0.75 - 3.4 billion years ago

FEATURED "CROP": Algae

Spirulina Smoothie Bowl

HISTORY: The first traces of life appeared nearly 3.4 billion years ago, and they came in the form of photosynthetic bacteria. The bacteria then evolved into red and brown algae (1.2 bya) and then into green algae (0.75 bya), thus beginning the lengthy evolutionary process of plants.



Ingredients

- 1 medium frozen banana
- 1 cup frozen mango
- 1 cup frozen pineapple
- 1/2 tsp spirulina (optional)
- 2 tbsp coconut water or milk
- Desired toppings

Equipment

- Food processor or high-speed blender

Directions

1. Add frozen banana to a food processor or blender and blend until smooth.
2. Add frozen mango and pineapple and blend, adding coconut water or milk until smooth and a desired consistency is reached.
3. Add spirulina and pulse to combine.
4. Top with desired toppings and eat immediately.

700 BC

FEATURED CROP: Dates

Peanut Butter Cup Energy Bites

HISTORY: In 700 BC, Assyrians and Babylonians hand pollinated date palms, thus marking the first documented case of plant breeding.



Ingredients

- 1 cup dates (pitted- if dry, soak in warm water for 10 minutes, then drain well)
- 3 Tbsp all-natural peanut or almond butter
- 1/4 cup dark chocolate (roughly chopped)
- 1 Tbsp chia seeds (or sub flax or hemp seeds)
- 2/3 cup rolled oats

Directions

1. Pulse dates in a food processor or blender until in small pieces or forms a ball.
2. Add oats, chocolate, chia seeds and peanut butter and pulse or mix until combined. You want there to be consistently small pieces but not overly processed.
3. Carefully roll into 1-inch balls, using the warmth of your hands to mold them together. Should yield 14-15 balls.
4. To set, refrigerate or freeze for 15 minutes. Otherwise, eat as is! Will keep fresh in an air-tight bag or container for up to a week. Freeze for longer term storage.

1866

FEATURED CROP: Peas

Pea and Mint Pesto

HISTORY: In 1866, Gregor Mendel discovered the fundamental laws of inheritance through the crossing of pea plants. He is widely known as the father of modern genetics.



Ingredients

- 1 (10 oz) package of frozen peas, defrosted
- 1/2 cup grated parmesan
- 1 garlic clove
- 1/2 cup fresh mint leaves
- Juice of one lemon
- 1 tsp kosher salt
- 1/4 tsp freshly cracked pepper, plus more for garnish
- 1/3 cup olive oil, plus more for garnish

Directions

1. Add peas, parmesan, garlic, mint, salt and pepper in a food processor and pulse to combine.
2. With the machine running, slowly add the olive oil until well combined; about 1 to 2 minutes.
3. Garnish with a drizzle of olive oil and freshly cracked pepper.
4. Serve with freshly toasted bread.

1903

FEATURED CROP: Green Beans

Lemon Basil Green Beans

HISTORY: In 1903, Wilhelm Johannsen coined the terms gene, phenotype, and genotype through his “pure line” genetic experiments in beans.



Ingredients

- 1 lb fresh green beans
- Juice of one lemon
- 1/4 tsp salt, or to taste
- 1/4 tsp freshly cracked black pepper, or to taste
- 2 tbsp olive oil
- 1/2 cup roughly chopped basil

Directions

1. Bring a large pot of salted water to a boil and add green beans. Blanch until bright green in color and tender crisp, roughly 2 minutes.
2. Immediately transfer beans to a bowl of ice water and let sit.
3. In the meantime, combine lemon, salt, black pepper, olive oil, and basil in a small bowl.
4. Transfer green beans into a serving dish and pat to dry. Add dressing and toss to combine.
5. Serve chilled, will keep in refrigerator for 1-2 days.

1950

FEATURED CROP: Corn

Elote (Mexican Street Corn)

HISTORY: Dr. Barbara McClintock discovered transposable elements, or “jumping genes,” in 1950 through maize breeding experiments. This discovery earned her the Nobel Prize in Physiology or Medicine in 1983.



Ingredients

- 4 ears of corn, shucked and halved cross wise
- 1/4 cup mayonnaise
- 1/4 cup sour cream or Mexican crema
- 1/4 cup cotija cheese, plus more for garnish
- 1/2 cup chopped cilantro, plus more for garnish
- 2 garlic cloves, minced
- Juice of 1/2 a lime, plus wedges for serving

Directions

1. Preheat oven to 400°F. Place corn on a foil lined baking sheet and roast for 30-40 minutes, turning every 10 minutes or so, until lightly charred but not burnt.
2. Meanwhile, combine mayonnaise, sour cream, cotija, cilantro, garlic and lime juice in a bowl.
3. Brush corn generously with the sauce and top with cotija and cilantro. Serve immediately with lime wedges.

1950-1960

FEATURED CROP: Rice

Oven Baked Chicken and Rice

HISTORY: The 1950s through the 1960s marked an increase in world-wide agricultural production due to the discovery and adoption of new technologies, including hybrid vigor, male sterility, and irrigation. New crop cultivars were used across the globe, thus increasing the production of rice, wheat, and corn.



Ingredients

- 5 chicken thighs, bone in, skin off
- 1 onion, chopped
- 2 cloves garlic, minced
- 2 tbsp butter or olive oil
- 1 ½ cups long grain white rice
- 1 ½ cups chicken broth or stock
- 1 ¼ cups hot water
- 1 tsp paprika
- 1 tsp dried thyme
- 1/2 tsp onion powder
- 3/4 tsp salt
- Freshly cracked black pepper

Directions

1. Preheat oven to 350°F.
2. Scatter onion and garlic in a 10 x 15in baking dish with butter or olive oil. Bake for 12-15 minutes until lightly browned.
3. Meanwhile, mix together spices and sprinkle onto both sides of the chicken.
4. Remove baking dish from oven once onions are done, add rice and mix. Place chicken on rice and pour broth and water around chicken.
5. Cover with foil and bake for 30 minutes. Then remove foil, spray chicken with oil (optional) and bake for another 20 minutes or until liquid is absorbed.
6. Broil for 5 minutes (optional), then remove chicken and fluff up rice. Serve atop a bed of greens if desired.

1970

FEATURED CROP: Wheat

No-Knead Bread

HISTORY: In 1970, Norman Borlaug was awarded the Nobel Peace Prize for his contributions to world peace by increasing food supply. He is widely known as the “Father of the Green Revolution” because of his development of high-yielding, semi-dwarf, disease-resistant wheat varieties that went on to save over a billion people



Ingredients

- 1 lb all-purpose flour (about 3 cups), plus more for sprinkling
- 2 tsp salt
- 3/4 tsp active dry yeast
- 1 ½ cups lukewarm water

Equipment

- Dutch oven

Directions

1. Place flour, salt, and yeast in large bowl and whisk to combine. Make a well in the center and add the water to the well. Stir until a shaggy dough forms.
2. Cover the bowl with plastic wrap or a kitchen towel. Set aside in a warm place to rise until doubled in size and bubbly, around 6 to 8 hours.
3. Lightly flour a piece of parchment paper and turn the dough out onto it, folding it over on itself at least once while you do so. Quickly shape the dough into a round ball. Cover with a kitchen towel and let rise for one more hour.
4. About 30 mins before the hour is up, arrange a rack in the middle of the oven and place a large Dutch oven with its lid on onto the rack. Heat the oven to 450°F.
5. Once the loaf has finished rising, use the parchment paper to carefully transfer the loaf, still on the paper, to the Dutch oven. If desired slash the top of the dough with a sharp knife so the bread expands while baking.
6. Cover and bake for 30 mins. Then uncover, spritz the dough 2-3 times with water, and bake for another 15 mins.
7. Once done baking, use the parchment paper to transfer the bread to a wire rack. Cool at least 15 mins before slicing.

1994

FEATURED CROP: Tomato

Essential Tomato Sauce

HISTORY: In 1994, the FlavrSavr tomato hit the market as first ever genetically modified food. The fruit was able to remain firm for longer and could be transported to market after vine-ripening due to a mutation that suppressed accumulation of the enzyme polygalacturonase which dissolves cell-wall pectin.



Ingredients

- 1 28oz can crushed tomatoes
- 2 tbsp sugar-free tomato paste
- 1/2 medium onion, finely chopped
- 4 garlic cloves, crushed
- 1 tbsp extra virgin olive oil
- 1 tbsp brown sugar
- 1/2 tsp dried oregano
- 2 dry bay leaves
- 1 tbsp fresh basil, chopped
- Salt and black pepper to taste

Directions

1. Heat olive oil in a saucepan over medium heat.
2. Add onions and cook 4-5 minutes until they are soft and golden.
3. Add garlic and stir, being careful not to burn.
4. Add tomato paste and stir well. Add crushed tomatoes, including the juice.
5. Add brown sugar, dried oregano, dry bay leaves, salt, and pepper.
6. Cover and bring to a low simmer for 25-30 minutes.
7. Remove from heat, add fresh basil and stir well. Remove the dry bay leaves.
8. Adjust seasoning to taste or blend if a smoother consistency is desired.
9. Sauce will keep in the fridge for 3-4 days or freeze for months.

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