

Lily Dinkins ENEC 370 Field Trip #1

Day and meal	Common name of ingredient/food	Genus species (all ingredients)*	Domestication site of species	My food actually came from
August 29 <sup>th</sup> , Break-fast				
Fried Egg	Egg	<i>Gallus domesticus</i>	South East Asia (Lawler, 2014)	I spoke to a manager on the phone who said he would have to send an email out to Trader Joe's and wouldn't get a response for a few days. He said he thinks the eggs are most likely not from North Carolina though. I also sent an email request but received no response.
Extra Virgin Olive Oil	Extra Virgin Olive Oil	<i>Olea europaea</i>	Mediterranean Basin (Diez <i>et al.</i> , 2015)	Italy, Spain, Argentina and Greece
Frozen Spinach	Spinach	<i>Spinacia oleracea</i>	Persia (Simoons, 1991)	Source: Trader Joe's Extra Virgin Olive Oil label I called Harris Teeter twice and both times it directed me to a spam number asking about my vacationing habits. Seventy percent of spinach in the US is grown in California though, so my best guess is that it comes from there (Naeve, 2015).
Tutoross Canned diced tomatoes	Tomatoes	<i>Solanum lycopersicum</i>	Central America (Estabrook, 2012)	Indiana, Michigan or Ohio
	Tomato juice	<i>Solanum lycopersicum</i>	Central America (Estabrook, 2012)	Source: I spoke to a customer service representative on the phone and she said these are the three states where their tomatoes are grown. She said she could not give me more specific information. Indiana, Michigan or Ohio
	Salt	N/A	N/A	Source: I spoke to a customer service representative on the phone and she said these are the three states where their tomatoes are grown. She said she could not give me more specific information. N/A

Day and meal	Common name of ingredient/food	Genus species (all ingredients)*	Domestication site of species	My food actually came from
	Naturally derived calcium chloride	N/A	N/A	N/A
	Naturally derived citric acid	N/A	N/A	N/A
Yellow onion	Yellow onion	<i>Allium cepa</i>	Southeast Asia and the Middle East, thought to have been domesticated simultaneously around 5,000 years ago (National Onion Association)	Louisville, KY
Sambal Oelek	Chili	<i>Capsicum annuum</i>	Mexico (Kraft <i>et al.</i> , 2014)	Source: label on bag states "The Horton Fruit Co., INC. Louisville, Kentucky, 40218-2967" Underwood Family Farms in Moorpark, California
	Salt	N/A	N/A	Source: Huy Fong website
	Distilled vinegar	N/A	N/A	N/A
	Potassium sorbate	N/A	N/A	N/A
	Sodium bisulfite	N/A	N/A	N/A
Sea Salt	Sea Salt	N/A	N/A	Northern California Source: Trader Joe's Sea Salt label
Pepper	Pepper	<i>Piper nigrum</i>	India (Kew)	Italy

Day and meal	Common name of ingredient/food	Genus species (all ingredients)*	Domestication site of species	My food actually came from
August 29 <sup>th</sup> , Dinner	Lentil Salad	Lentils <i>Lens culinaris</i>	Near East, “the cradle of agriculture” (Sonnante <i>et al.</i> , 2009)	Source: Drogheria Alimentari Organic Black Pepper Corns Mill label Canada
	Red onion	<i>Allium cepa</i>	Southeast Asia and the Middle East, thought to have been domesticated simultaneously around 5,000 years ago (National Onion Association)	Source: Ziyad Brand All Natural Large Whole Lentils label Kettleman City, CA
	Red bell pepper	<i>Capsicum annuum</i>	Mexico (Quiros, 2010)	Source: Sticker on onion said Dalena Farms and I googled to find location Holland
	Basil	<i>Ocimum basilicum</i>	India (UC Davis, 2011)	Source: sticker on vegetable says “Origin Holland / Pays-Bas” My kitchen table! I have a fresh basil plant my dad potted from his herb garden.
	Arugula	<i>Eruca sativa</i>	Mediterranean (Wright, 2001)	Earthbound Farm, CA
	Garlic	<i>Allium sativum</i>	Egypt or India (Simon, 2016)	Source: Organic Baby Arugula Blend label USA
Balsamic Vinegrette	Extra Virgin Olive Oil	<i>Olea europaea</i>	Mediterranean Basin (Diez <i>et al.</i> , 2015)	Source: Trader Joes Fresh Garlic label Italy, Spain, Argentina and Greece
				Source: Trader Joe’s Extra Virgin Olive Oil label

Day and meal	Common name of ingredient/food	Genus species (all ingredients)*	Domestication site of species	My food actually came from
	Sea Salt	N/A	N/A	Northern California Source: Trader Joe's Sea Salt label
	Pepper	<i>Piper nigrum</i>	India (Kew)	Italy
	Garlic	<i>Allium sativum</i>	Egypt or India (Simon, 2016)	Source: Drogheria Alimentari Organic Black Pepper Corns Mill label USA
Harris Teeter Dijon mustard	Water	N/A	N/A	Source: Trader Joes Fresh Garlic label I had the same issue asking for more specifics as the eggs, the manager I spoke to said he would have to put in an email request that would take a couple days. Most garlic in the US is grown in California, Nevada, and Oregon (Boriss, 2014). I called Harris Teeter twice and both times it directed me to a spam number asking about my vacationing habits.
	Mustard seed	<i>Brassica nigra</i>	Iran (Singh, 2013)	Manufactured in Matthews, NC Source: Harris Teeter Dijon Mustard label I called Harris Teeter twice and both times it directed me to a spam number asking about my vacationing habits.
	Distilled vinegar	N/A	N/A	Manufactured in Matthews, NC Source: Harris Teeter Dijon Mustard label Mustard is mostly grown in Idaho, Montana, North Dakota, Oregon and Washington and could have come from any of these states (Boland, 2013). N/A
	Salt White wine	N/A <i>Vitis vinifera</i>	N/A Near East (Myles <i>et al.</i> , 2011)	N/A I called Harris Teeter twice and both times it directed me to a spam number asking about my vacationing habits. Manufactured in Matthews, NC Source: Harris Teeter Dijon Mustard label The white wine is most likely from California since around 90% of American wine is from there (Puckette, 2013).

Day and meal	Common name of ingredient/food	Genus species (all ingredients)*	Domestication site of species	My food actually came from
	Citric acid	N/A	N/A	N/A
	Turmeric	<i>Curcuma longa</i>	India (Avey, 2015)	I called Harris Teeter twice and both times it directed me to a spam number asking about my vacationing habits. Manufactured in Matthews, NC Source: Harris Teeter Dijon Mustard label Eighty percent of the world's turmeric is grown in India (APEDA).
	Tartaric acid	N/A	N/A	N/A
	Spices	N/A	N/A	N/A
Balsamic vinegar	Concentrated grape must	<i>Vitis vinifera</i>	Near East (Myles <i>et al.</i> , 2011)	Modena, Italy  Source: Monari Federzoni Balsamic Vinegar of Modena Label The websites where I researched
	Caramel color	N/A	N/A	
	Wine	<i>Vitis vinifera</i>	Near East (Myles <i>et al.</i> , 2011)	Modena, Italy  Source: Monari Federzoni Balsamic Vinegar of Modena Label
August 29 <sup>th</sup> , Snack	Sabra Red Pepper Hummus	Chickpeas <i>Cicer arietinum</i>	Turkey, Syria and Iran (Kew)	I spoke to Kay from Customer Service on the phone and they do not release any farm information but all the ingredients are from the USA and there are two distribution locations in Oceanside, VA and Farmingville, NY.
	Tahini – sesame seeds	<i>Sesamum indicum</i>	- India (Bedigian, 2002)	“  Sesame seeds are really only grown in Paris, Texas in the United States (Hanson, 2016). The majority of global sesame comes from India (Hanson, 2016).

Day and meal	Common name of ingredient/food	Genus species (all ingredients)*	Domestication site of species	My food actually came from
	Roasted red bell peppers	<i>Capsicum an-nuum</i>	Mexico (Quiros, 2010)	Bell peppers are most commonly grown in California in the United States but since Sabra is located on the east coast it's likely their farms are as well (Naeve, 2015).
	Sugar	<i>Saccharum offici-narum</i>	New Guinea (Cope)	“  Sugar in the United States is grown in Florida, Hawaii, Louisiana and Texas (McConnell, 2016).
	Cultured dextrose	<i>Bos taurus</i>	Near east (Bollongino <i>et al.</i> , 2012)	“
	Paprika	<i>Capsicum an-nuum</i>	Mexico (Anderson, 2007)	“  Paprika is most likely grown in California in the US (New World Encyclopedia, 2008)
	Canola oil	<i>Brassica Napus</i>	Mediterranean (Raymer, 2002)	“  Canola is mostly grown in North Dakota in the United States (US Canola Association)
	Salt	N/A	N/A	“
	Lemon juice	<i>Citrus x limon</i>	China (Robertson)	“  Most lemons are grown in California in the US (Crane, 2010).
	Citric acid	N/A	N/A	“
	Garlic powder	<i>Allium sativum</i>	Egypt or India (Simon, 2016)	“  Most garlic in the US is grown in California, Nevada, and Oregon (Boriss, 2014).
	Sugar gum	<i>Eucalyptus cladocalyx</i>	Australia (Hamilton, 2001)	“

Day and meal	Common name of ingredient/food	Genus species (all ingredients)*	Domestication site of species	My food actually came from
Red bell pepper	Red bell pepper	<i>Capsicum annuum</i>	Mexico (Quiros, 2010)	Sugar gum is endemic to Australia (Hamilton, 2001). Holland Source: sticker on vegetable says "Origin Holland / Pays-Bas"

\*All genus species retrieved from Wikipedia

In total I had 33 entries (only counting the ones I researched not the chemicals) with 22 species likely from nine countries. I wasn't surprised at how biodiverse my diet was but I was surprised at where my food was from. The most shocking to me was that my red bell pepper from Harris Teeter originated in Holland. Maybe I don't know enough about the agriculture business yet, but this makes no sense to me financially or environmentally. The aspect of my diet that I definitely need to reevaluate is the lack of local produce. Not a single thing I ate on August 29<sup>th</sup> was from North Carolina besides the basil from the plant in my kitchen. I also was very surprised that bell pepper and paprika are the same genus species. Some of the ingredients from the more processed foods were so vague that it would have been impossible to trace without knowing every aspect of the companies recipe. For example, when I googled "caramel color" I found that it can be made with either corn or wheat and there's not real way of knowing without company specifics. Same with the Harris Teeter mustard that listed "spices" as an ingredient. Another aspect of my diet that struck me was how much of my food was potentially from California. I know that California is a major farming state but I had no idea how prolific. When I've thought of California agriculture I think of tomatoes, almonds, avocados, and wine. I wish it had been possible to find more information about specific tomato and pepper breeds. The only hybrid I had on my list was lemons but I'm sure some of the other produce was hybrid as well. Most of the species I ate were domesticated in the "Near East", Asia and the Mediterranean.

## References

- Anderson, N. O. (2006). *Flower breeding and genetics: Issues, challenges and opportunities for the 21st century*. Dordrecht: Springer.
- Avey, T. (2015, March 09). What is the History of Turmeric? Retrieved September 07, 2016, from <http://www.pbs.org/food/the-history-kitchen/turmeric-history/>
- Basil. (2011). Retrieved September 05, 2016, from <http://www.goodlifegarden.ucdavis.edu/crops/id/67>
- Bedigian, D. (2003, November). Evolution of sesame revisited: Domestication, diversity and prospects. *Genetic Resources and Crop Evolution*, 50(7), 779-787. doi:10.1023/A:1025029903549
- Boland, M. (2013, April). Mustard. Retrieved September 07, 2016, from <http://www.agmrc.org/commodities-products/grains-oilseeds/mustard/>
- Bollongino, R., Burger, J., Powell, A., Mashkour, M., Vigne, J., & Thomas, M. G. (2012). Modern Taurine Cattle Descended from Small Number of Near-Eastern Founders. *Molecular Biology and Evolution*, 29(9), 2101-2104. doi:10.1093/molbev/mss092
- Boriss, H. (2014, April). Garlic Profile. Retrieved September 07, 2016, from <http://www.agmrc.org/commodities-products/vegetables/garlic-profile/>

- Cope, T. (Ed.). (n.d.). *Saccharum officinarum* (sugar cane). Retrieved September 06, 2016, from <http://www.kew.org/science-conservation/plants-fungi/saccharum-officinarum-sugar-cane>
- Crane, J. H. (2010, December). Lemon Growing in the Florida Home Landscape. Retrieved from <http://edis.ifas.ufl.edu/pdffiles/HS/HS40200.pdf>
- Diez, C. M., Trujillo, I., Martinez-Urdiroz, N., Barranco, D., Rallo, L., Marfil, P., & Gaut, B. S. (2014). Olive domestication and diversification in the Mediterranean Basin. *New Phytologist New Phytol*, 206(1), 436- 447. doi:10.1111/nph.13181
- Estabrook, B. (2012). *Tomatoland: How modern industrial agriculture destroyed our most alluring fruit*. Andrews McMeel Publishing.
- Hamilton, L. (2001). The Sugar Gum Story: The Marketing Success of a Humble Shelter Tree. Retrieved September 06, 2016, from <http://www.regional.org.au/au/iufro/2001/hamilton.htm>
- Hanson, R. (2016, July). Sesame Profile. Retrieved September 07, 2016, from <http://www.agmrc.org/commodities-products/grains-oilseeds/sesame-profile/>
- History of Onions. (n.d.). Retrieved September 05, 2016, from <https://www.onions-usa.org/all-about-onions/history-of-onions>
- Kraft, K. H., Brown, C. H., Nabhan, G. P., Luedeling, E., Ruiz, J. D., D'eeckenbrugge, G. C., Gepts, P. (2014). Multiple lines of evidence for the origin of domesticated chili pepper, *Capsicum annuum*, in Mexico. *Proceedings of the National Academy of Sciences*, 111(17), 6165-6170. doi:10.1073/pnas.1308933111
- Lawler, A. (2014). *Why did the chicken cross the world?: The epic saga of the bird that powers civilization*. Atria Books.
- McConnell, M. (2016, June 3). Sugar & Sweeteners: Background. Retrieved September 07, 2016, from <http://www.ers.usda.gov/topics/crops/sugar-sweeteners/background.aspx>
- Myles, S., Boyko, A. R., Owens, C. L., Brown, P. J., Grassi, F., Aradhya, M. K., . . . Buckler, E. S. (2011). Genetic structure and domestication history of the grape. *Proceedings of the National Academy of Sciences*, 108(9), 3530-3535. doi:10.1073/pnas.1009363108
- Naeve, L. (2015, August). Spinach. Retrieved September 06, 2016, from <http://www.agmrc.org/commodities-products/vegetables/spinach/>
- Naeve, L. (2015, August). Spinach. Retrieved September 07, 2016, from <http://www.agmrc.org/commodities-products/vegetables/spinach/>
- Paprika. (2008, August 12). Retrieved September 07, 2016, from <http://www.newworldencyclopedia.org/entry/Paprika>
- Piper nigrum (black pepper). (n.d.). Retrieved September 05, 2016, from <http://www.kew.org/science-conservation/plants-fungi/piper-nigrum-black-pepper>
- Puckette, M. (2013, January 16). Top 10 Wine Regions of The World | Wine Folly. Retrieved September 06, 2016, from <http://winefolly.com/update/top-wine-regions-of-the-world/#fb-root>
- Quiros, C. F. (2010, April 2). PEPPERS. Retrieved September 05, 2016, from <http://www.plantsciences.ucdavis.edu/vc221/pepper/PEPPERrd.htm>
- Raymer, P.L. (2002) Canola: An emerging oilseed crop. *Trends in new crops and new uses*. Alexandria: ASHS.
- Simon, P. W. (2016, August 13). The origins and distribution of garlic: How many garlics are there? Retrieved September 05, 2016, from <https://www.ars.usda.gov/midwest-area/madison-wi/vegetable-crops-research/docs/simon-garlic-origins/>
- Simoons, F. J. (1991). *Food in China: A cultural and historical inquiry*. Boca Raton: CRC Press.
- Singh, B. P. (2013). *Biofuel crops: Production, physiology, and genetics*. Boston: CABI.



Sonnante, G., Hammer, K., & Pignone, D. (2009). From the cradle of agriculture a handful of lentils: History of domestication. *RENDICONTI LINCEI Rend. Fis. Acc. Lincei*, 20(1), 21-37. doi:10.1007/s12210-009-0002-7

TURMERIC. (n.d.). Retrieved September 7, 2016, from <http://apeda.gov.in/agriexchange/market> profile/MOA/Product/Turmeric.pdf

Wright, C. A. (2001). *Mediterranean vegetables: A cook's ABC of vegetables and their preparation in Spain, France, Italy, Greece, Turkey, the Middle East, and north Africa with more than 200 authentic recipes for the home cook*. Boston: Harvard Common Press.

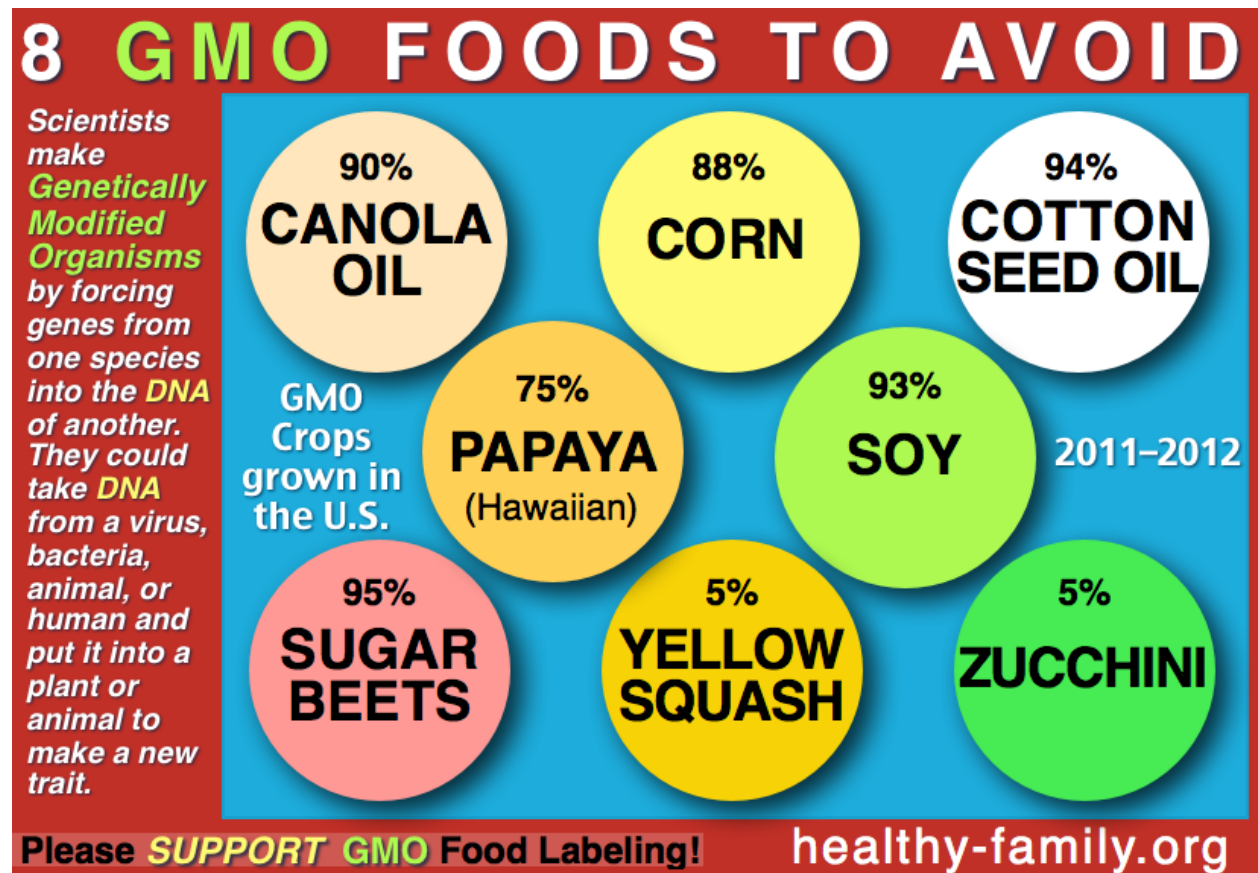


Figure 1: