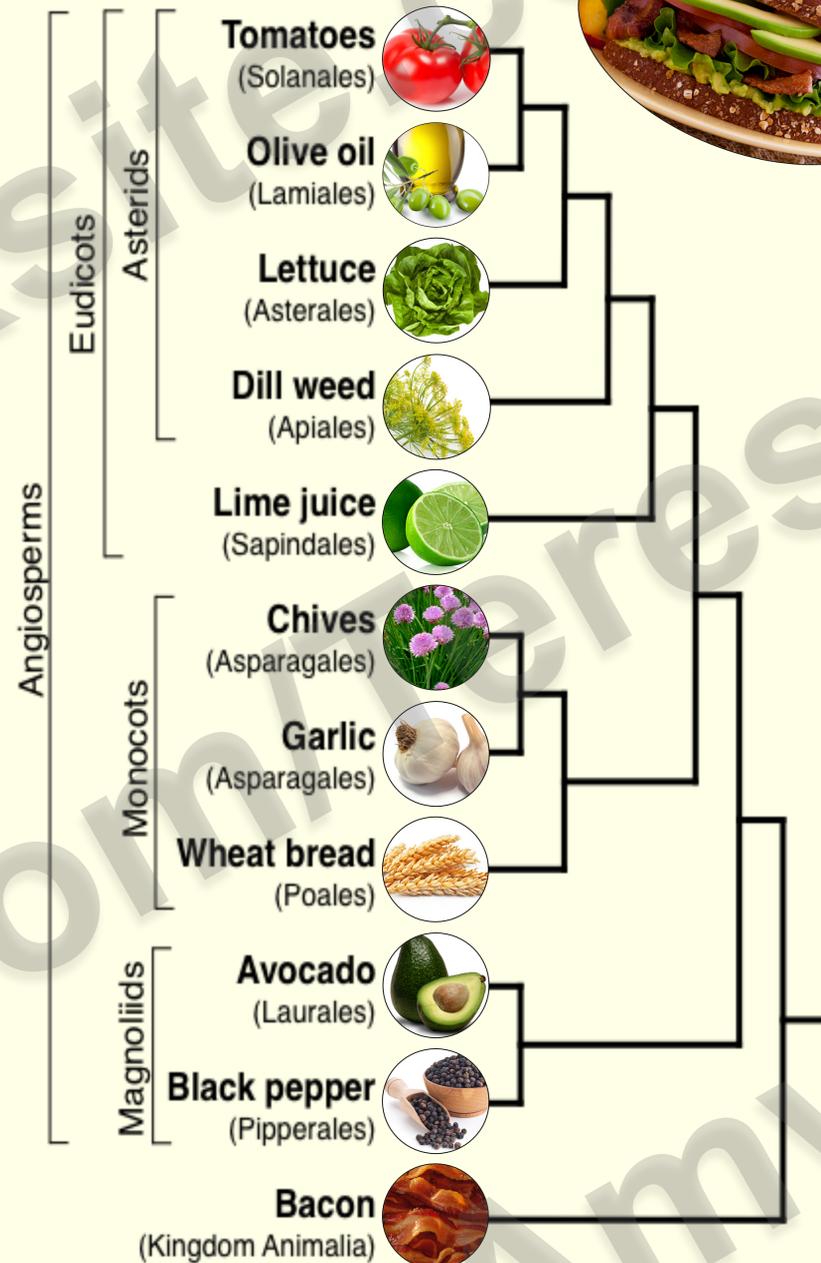


# Solanum lycopersi-YUM! (the Tomato)

Teresa Lewis



## The Ultimate BLT



**Figure 1.** Phylogeny of the best BLT ever! Taxa are given with ingredient name and order in parentheses. In the case of Bacon, Kingdom is given because it is a very distant outgroup. Clades Angiosperms, Eudicots, Asterids, Monocots, and Magnoliids are denoted by brackets. (Soltis et al. 2011)

## Flavr Savr Tomatoes: The First GMO

### The problem with tomatoes:

Fruits and vegetables are mass-produced on large farms and orchards. This required harvesting, packing, and shipping these foods to local grocery stores, all before the produce becomes unsalable. It is no secret that fruits and vegetable get softer as they ripen. Packing and shipping tomatoes poses a particular problem because of their soft, juicy flesh. Typically, tomatoes are picked well before they are ripe and shipped while they were still hard and green, then exogenous ethylene was used to artificially ripen them once they arrive at the grocery store. This process allows for easier shipping, but diminishes much of the robust flavor that tomatoes get when they are allowed to ripen on the living vine (Laurie-Berry 2015).

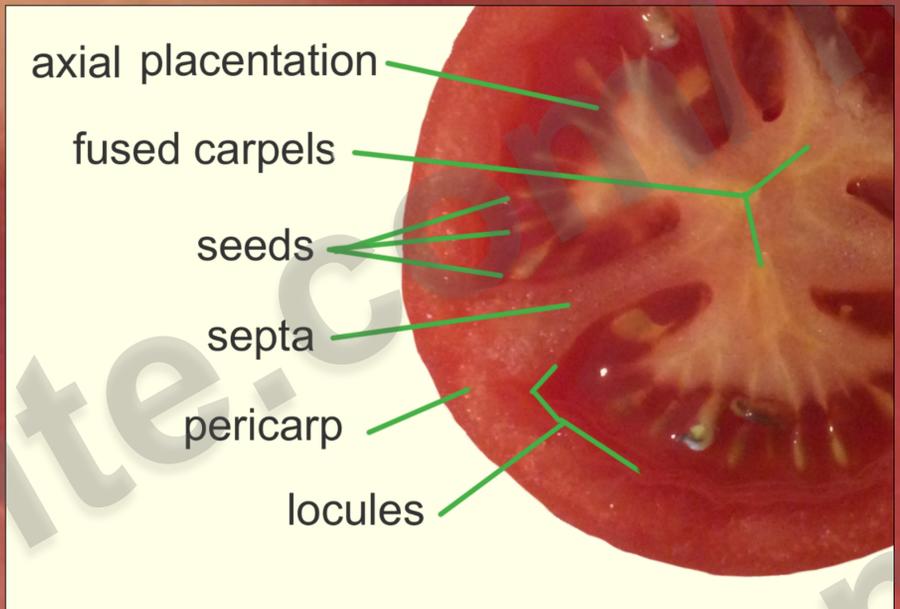
### Genetic modification of the tomato:

In 1994, a company called Calgene sought to fix this problem. During the natural ripening process an enzyme degrades the cell wall of the fruit. Calgene disabled the gene for this enzyme, creating a transgenic tomato. The removal of this enzyme allowed the tomato to ripen naturally while maintaining its firmness. Calgene named it the Flavr Savr because of the long-lived shelf life and naturally ripe flavor. The Flavr Savr was the first food that was approved by the Food and Drug Administration (FDA) for human consumption and was quickly put on the market (Martineau 2001).

### The failure of the Flavr Savr:

The Flavr Savr was only in grocery stores from 1994 to 1997. It was a short-lived product, but it was not because of a controversy over genetically modified food. Ironically, the Flavr Savr failed in large part to its lack of flavor. Not only had Calgene chosen a less-robust tasting tomato to modify, their production cost was high compared to competing tomatoes. Inferior flavor combined with the high price made the Flavr Savr an undesirable competitor. The tomatoes flavor did not save the company and shortly after Calgene removed it from the market, they closed their doors for good (Peacock 2010; Laurie-Berry 2015).

## Tomato is a Fruit



**Figure 2.** The tomato *Solanum lycopersicum*, is a berry with a compound pistil composed of multiple carpels. The tomato has axial placentation, meaning the placenta of the fruit is located in the center and divided into locules (EU-SOL 2016).

## Literature Cited

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