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What are you eating, botanically speaking?

By SONOMA COUNTY MASTER GARDENERS

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A farmer holds a pulled-up peanut plant. Photo: Georgia Peanut Commission

Is a tomato a vegetable or fruit? Is a peanut a nut? And are raspberries, blackberries and strawberries really berries?

The answers to these questions reveal a key concept: botanists think about fruits and vegetables a bit differently than the rest of us. Botanists, as scientists, classify plants based on molecular and structural characteristics. Those of us who aren't botanists think of fruits and vegetables based on how we use them and what their names imply.

We generally consider fruits to be sweet or tart in flavor, while we usually think of vegetables as savory in taste.

In 1883 the Supreme Court, ruling on a tariff law case, determined that tomatoes should be classified as vegetables due to their popular usage. But it stopped short of

botanically reclassifying them. In fact, the botanical point of view is where things get interesting.



Walnuts, along with chestnuts and hazelnuts, are nuts that fall under the dry fruit category. Alvin A.H. Jornada/The Press Democrat

The plants we eat have standard structural parts: roots, bulbs, tubers, stems, leaves, and flowers. Vegetables are usually grouped according to the portion of the plant that we eat: roots include carrots, parsnips, beets, turnips and sweet potatoes; potatoes are tubers; onions and garlic are bulbs. We eat the leaves of lettuce, spinach and chard; the stems of celery and rhubarb; and the immature flowers of broccoli, cauliflower and artichokes. So far, that's straightforward with no major surprises.

By contrast, fruits present botanical surprises.

A fruit is the ripened ovary of a flower with the seeds in that ovary. It can be dry or fleshy. Some fleshy fruits, such as peaches, apricots, and plums, have a high water content. But the dry category includes a number of foods we don't commonly think of as fruit. You might think any plant with "berry" or "nut" in its name would be just that, but names can be deceiving.



Peaches, along with apricots and plums, are fleshy fruits with a high water content. John Burgess/The Press Democrat.

Peanuts are a good example. They look like a nut, are used like a nut, but botanically speaking, they are a dry fruit. Peanuts are classified as legumes, along with beans, peas and garbanzos.

Another dry fruit category is nuts, such as chestnuts, hazelnuts, walnuts. But some fruits we call nuts are not included in this list. Almonds and cashews are not true nuts; botanists classify them as fleshy fruit.

A third category of dry fruits are grains, such as wheat, rye, barley, rice, corn.

Most of us would never think of legumes, nuts, and grains as fruits. But they all develop from flowers, so botanically they are fruit.

Botanists organize fleshy fruits into four groups: simple, aggregate, multiple, or accessory. Simple fruits develop from a single fertilized ovary and are divided into two groups, drupes and berries.

Olives, cherries, peaches, plums, apricots, avocado, almonds and cashews belong to the drupes. The berry category is probably the most surprising. It includes grapes,

bananas, gooseberries, blueberries, cranberries, tomato, eggplant, citrus, squash, pumpkins, cucumbers and melons.

Did you notice, some of the fruit we call berries aren't included in the berry list? That's because of their structure. Technically raspberries and blackberries are not true berries, but aggregate fruits, formed from multiple ovaries.

Mulberries are also not a true berry. They are classified as multiple fruits, formed from multiple ovaries of multiple flowers. Pineapples and figs are also multiple fruits.

Strawberries aren't a true berry either. They are classified as accessory fruits because they develop from tissue outside of the fertilized ovary. The part we eat is accessory tissue, not the ripened ovary.

Pomes such as apple, pear, and quince are also accessory fruits.

While this information is interesting, it shouldn't change your eating habits. We're not suggesting you start adding eggplant and olives to your fruit salads, or squash and cucumbers to your berry pies, even if botanically that would be correct. It might, however, lead to some lively dinner table conversation.

Contributors to this week's column were Wendy Stern, Patricia Decker and Karen Felker. The UC Master Gardener Program of Sonoma County sonomamg.ucanr.edu /provides environmentally sustainable, science-based horticultural information to Sonoma County home gardeners. Send your gardening questions to scmgpd@gmail.com. You will receive answers to your questions either in this newspaper or from our Information Desk. You can contact the Information Desk directly at 707-565-2608 or mgsonoma@ucanr.edu.