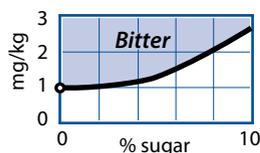


Bitter

Like sour, the taste of bitter evolved from a biological necessity to avoid dangerous foods, generally toxic plants. Unlike sour, bitter has much more complicated detection mechanisms. It's estimated that there are around 35 different types of receptor cells for tasting bitter compounds, with each type fitting different chemical “keys” in the lock-and-key metaphor. We detect all of these different signals as “bitter!” because the different receptor cells connect to a common nerve fiber.



In plain water, bitter limonin can be tasted at 1 mg/kg (or higher concentrations); it takes almost three times as much when mixed into a 10% sugar solution (Guadagni, 1973).

The taste of bitter is unusual in that we learn to enjoy it. We know bitterness is a learned preference—different cultures have different preferences for it, with Americans and the British placing less emphasis on it than other cultures—but whether we learn to like bitter flavors because of exposure effects or social conditioning is an open question. It is clear that we don't like bitter foods at the start of our lives. This “learning to like” is why bitter foods are unappealing to kids: they haven't learned to tolerate, let alone enjoy, the sensation of bitterness. Dandelion greens, rhubarb, and undercooked artichoke leaves all contain bitter-tasting compounds. Not surprisingly, I couldn't stand those things as a kid; as I've gotten older, I've come to enjoy the bitterness of something like dandelion greens in a salad.

Bitter can also be a confusing taste. A surprising number of people confuse bitter and sour tastes for each other—around one in eight English-speaking people incorrectly describe citric acid in water as tasting bitter, not sour. Coffee is commonly described as bitter, but it can also be quite acidic, giving it a sour taste in addition to its stronger bitter taste. Bitterness seems to lend itself exceedingly well to other drinks besides coffee: black tea, hops (used in making beer), and kola nuts (kola as in cola as in soft drinks) are all bitter. Like all bitter foods, they're still delicious—if you've learned to like them!

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- Tips**
- Genetic differences in bitter taste sensations change preferences for sweet items, especially in children. When serving others, remember that we don't all experience the same “taste landscape” and that differences in food upbringing change how much bitterness an eater will enjoy.
 - Salty and sweet tastes mask bitterness. Try a simple “bitter taste test” using modern tonic water, which uses quinine as a bittering agent and is easy to get at the grocery store. (Look for one free of any sweetener.) Pour tonic water into two drinking glasses. In one, add enough salt to neutralize the taste. Compare the taste of the tonic water in the two glasses.

To make something bitterer

- It's telling that, unlike with all the other tastes, we don't have a standard seasoning to make things more bitter! Use a bitter ingredient such as bitter greens or cocoa (see page 63).

If a dish is too bitter

- Increase saltiness or sweetness to mask. A pinch of salt in a salad that contains bitter items such as dandelion greens helps balance the flavor.
 - Try adding a fatty ingredient. Some studies show that moderate levels of fat reduce the sensation of bitterness without impacting other tastes.
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Frisée Salad with Poached Eggs and Lardons

Frisée—also called curly endive—is a bitter leafy green that's often used in a salad with poached eggs and lardons, known to the French as Salade Lyonnaise. The fat of the lardons—essentially, bacon bits—and egg yolk moderates the bitterness of the frisée. Try tasting some of the plain frisée leaves after eating the salad to notice the difference! This recipe makes two appetizer-portion salads.

Wash **1 head of frisée, about ⅓ pound (~150g)**, and cut the base off so that the leaves are separated. Either use a salad spinner or pat the leaves dry using a towel, and then transfer the leaves to a large mixing bowl. Tear any larger leaves into a few pieces.

Create the lardons using either **thick slices from pork belly** or **2–3 slices (80–120g) of thick-cut bacon**, cut into large cubes. (If using salted pork belly, you'll want to briefly boil the meat to remove some of the salt.) Place the meat into a frying pan set to medium-low heat and cook the lardons, flipping them occasionally. Once the lardons are nicely browned, turn the heat off and transfer them to the mixing bowl, leaving the rendered fat behind.

Create a vinaigrette by transferring **2 tablespoons (30 mL) rendered pork fat** from the frying pan into a small mixing bowl or measuring cup. Add **2 tablespoons (20g) diced shallot**, **1 tablespoon (15 mL) olive oil**, **1 tablespoon (15 mL) white vinegar** (use champagne vinegar or sherry vinegar, if you have it), and **1 teaspoon (5g) Dijon mustard**. Add **salt** and **pepper** to taste.

If you like, create some croutons in the pan, using the remaining rendered fat. Place **2 slices of bread** cut into ½" / 1 cm cubes over medium heat, shaking the pan as necessary to jostle the bread as it toasts. Transfer the croutons to the mixing bowl when done.

Drizzle the vinaigrette over the leaves in the mixing bowl, tossing the leaves, lardons, and optional croutons.

Poach **two eggs** (see page 193 for directions). To serve, place a portion of the frisée salad on a plate and then set a poached egg on top.



Broiled Belgian Endive

Quarter **an endive** down the center to get four identical wedges and place them on a baking sheet or oven-safe pan. Sprinkle them with a small amount of **sugar** and drizzle a small amount of **melted butter** or **olive oil** on top.



Transfer the tray to a grill or place it under a broiler for a few minutes, until the endive becomes slightly soft and the edges of the leaves begin to turn brown.

Serve with blue cheese or use the endive as a vegetable accompaniment to stronger-flavored fish.