



Garlic

Garlic at a glance

Scientific name: *Allium sativum*

Common names: garlic

Family name: Amaryllidaceae

Part(s) of the plant used: fresh or dried bulb

Native region and environment: perennial plant of the amaryllis family, grown for its flavorful bulbs. “The plant is native to central Asia but grows wild in Italy and southern France and is a classic ingredient in many national cuisines”¹. Garlic was brought to the Americas by European settlers in the colonial period.

Garlic & diabetes

The antidiabetic potential of garlic includes: hyperinsulinemia, hypoglycemia, hypocholesterolemia, hypotriglyceridemia, and anti-glycation and anti-lipid-peroxidation actions has been suggested that cinnamon’s effects on blood glucose can be attributed to its active constituent, cinnamaldehyde. The active ingredients of garlic that have been attributed to its beneficial effects are mainly volatile sulfur compounds, like alliin (Figure 2), allicin, diallyl disulfide,

¹ <https://www.britannica.com/plant/garlic>

diallyl trisulfide, diallyl sulfide, S-allyl cysteine, ajoene, and allyl mercaptan (Padiya and Banerjee, 2013; Bayan et al., 2014)².

Both fresh and aged garlic and its bioactive compounds have been extensively studied for their antihyperglycemic actions both in experimentally induced and genetic animal models of diabetes (Padiya et al., 2011; Shiju et al., 2013; Al-Qattan et al., 2016; Sathibabu Uddandrao et al., 2016; Thomson et al., 2016) and in human studies (Ashraf et al., 2011; Atkin et al., 2016). Garlic has been shown to improve insulin sensitivity and the associated metabolic syndrome in animal models (Padiya et al., 2011). Clinical trial studying the effect of oral administration of raw garlic on type 2 diabetic patients showed a significant reduction in blood glucose level, lipid metabolism and significant improvement in superoxide dismutase, catalase, and glutathione peroxidase in erythrocytes of diabetic patients (Mirunalini et al., 2011). Several studies have also reported increased insulin secretion upon administration of garlic or garlic extracts/preparations (Eidi et al., 2006; Liu et al., 2006). Islam and Choi (2008) speculated that the higher insulin production is a result of the actions of allixin, S-allyl cysteine sulfoxide, and diallyl trisulfide. Recent studies of S-allyl cysteine, the main organosulfur bioactive molecule in aged garlic extract,

History of garlic use

“In ancient China, garlic was one of the most used remedies since 2700 BC. Then, owing to its heating and stimulating effects, it was placed in yang (the yin yang concept, according to which in the good there is bad and in the bad there is good). Garlic was recommended to those who suffer from depression.”

In ancient Indian medicine, garlic was a valuable remedy used as a tonic, roborans, to cure a lack of appetite, common weakness, cough, skin disease, rheumatism, haemorrhoids etc.

During the epidemic of influenza in America during 1917 and 1918, people wore a necklace of garlic when going out in public.

Constituents

The total amount of saponin in purple garlic was almost 40 times higher than that in white garlic, and several saponin compounds were only found to exist in purple garlic, such as desgalactotigonin-rhamnose, proto-desgalactotigonin, proto-desgalactotigoninrhamnose, voghieroside D1, sativoside B1-rhamnose, and sativoside R1 [2]. Moreover, garlic contained more than 20 phenolic compounds, with higher contents than many common vegetables [21]. The main phenolic compound was β-

² Overview herbal products and secondary metabolites

resorcylic acid, followed by pyrogallol, gallic acid, rutin, protocatechuic acid, as well as quercetin [22]. Furthermore, garlic polysaccharides were reported to contain 85% fructose, 14% glucose, and 1% galactose.³

Safety and contraindications

With a safety rating of 1 and interaction class C, garlic is generally a safe herb to take, but has been shown to have some herb-drug interactions. Garlic, especially fresh garlic, is safe to include in your daily meals.

Potential Drug Interactions

Persons taking heparin, clopidogrel, or aspirin, and doses equivalent to two or more grams daily of fresh garlic should be monitored for abnormal bleeding (Bordia et al. 1996; Kiesewetter et al. 1993a; Kiesewetter et al. 1993b; Steiner and Li 2001).

Garlic preparation & dosing

Whole cinnamon bark is available at most grocery stores, however if you are interested in using it to modulate your blood sugar levels make sure you buy the Cassia cinnamon. If you are interested in working with a tincture of lavender, I would recommend you buy this product from a trusted supplier like Mountain Rose Herbs or Herb Pharm.

Dosage Table: garlic

Application	Dosage	Preparation
Fresh	2 cloves	
Tincture		
Capsule		

Garlic Recipes

Garlic has been used as a food additive for more than a thousand years. Roasting the garlic changes the composition of its constituents and mellows the taste.

Roasted Garlic!!!!

1. Trim head of bulb about 1/4" inch
2. Place on a piece of foil
3. Drizzle with olive oil and sprinkle with salt
4. Wrap up in the foil
5. Bake in 400F oven for 30-40 minutes
6. Unwrap and let cool to touch

³ Bioactive Compounds of and Biological Functions of Garlic

7. Squeeze out onto toast points

Garlic Potato Soup

INGREDIENTS

2 tablespoons extra virgin olive oil, divided
2 large heads hardneck garlic (12 – 15 cloves each), divided
1 large shallot, peeled and sliced
1/2 sea salt, divided, plus more as needed
1/4 teaspoon chili pepper flakes
Black pepper to taste
1 tablespoon white wine
4 - 5 cups rich broth (chicken or vegetable)
4 sprigs each fresh thyme and parsley, tied with twine
2 medium russet potatoes, cut into 1-inch cubes

INSTRUCTIONS

Preheat oven to 400 degrees F.

Trim root end off one head of garlic. Set cloves, trimmed side down, in a small, oven-proof ramekin. Add 1 tablespoon olive oil and a pinch sea salt. Cover with foil, set on a rimmed baking sheet, and slide into oven. Roast garlic about 15 minutes, or until garlic is soft, but not at all brown. Once garlic is done, carefully remove foil and set aside to cool. When cool enough to handle, slide cloves out of their skins and reserve. Reserve garlic-infused olive oil.

Trim, smash, and peel remaining head of garlic. In a heavy bottomed 2- or 3-quart pot, 1 tablespoon olive oil over medium heat. Add cloves to pot, along with the sliced shallots, a generous pinch sea salt, chili flakes, and several twists black pepper. Sauté 2 - 3 minutes, then turn heat to low and cover; cook, stirring occasionally, about 30 minutes.

Remove cover, up heat to medium, and sauté until shallot and garlic brown just a bit on the edges. Add white wine, scrape up any brown bits, then pour in 3 cups stock and add potatoes, reserved roasted garlic and olive oil, and tied herbs (or bouquet garni), along with a 1/2 teaspoon sea salt.

Bring mixture to a boil, and then turn heat down to a bubbling simmer. Cook until potatoes are tender, about 15 minutes. Remove bouquet garni and carefully puree soup in a blender. Return soup to pot, adding up to 1 - 2 more cups of broth, depending on your preferred texture. Add sea salt to taste, add a splash more white wine if needed, lots and lots of black pepper, and serve topped with minced thyme and parsley leaves.

The flavor will develop further after a day in the fridge. The soup reheats beautifully, but does tend to thicken – keep a 1/2 cup of stock (water will work, too) on hand to thin soup if needed.

Chicken With 40 Cloves of Garlic

INGREDIENTS

8 to 10 chicken legs
2 teaspoons kosher salt
1 teaspoon black pepper
1/4 teaspoon ground nutmeg
3 tablespoons olive oil
40 cloves garlic, approximately 3 bulbs, peeled
¼ cup white wine
1 cup low-sodium chicken broth
4 stalks celery, very thinly sliced
1 tablespoon dried tarragon
1/4 cup finely chopped parsley
Toast, for serving

INSTRUCTIONS

Preheat oven to 375°F.

Pat chicken legs dry with paper towels. Season with salt, black pepper, and nutmeg.

In a large Dutch oven heat olive oil over medium-high heat. In batches, sear the chicken, about 4 to 5 minutes on each side; transfer to a platter. Add garlic and sauté garlic until golden brown, 6 to 8 minutes. Deglaze the pan with vermouth, scraping the bottom of the pan with a wooden spoon. Stir in chicken broth, celery, and tarragon and bring to a boil. Add chicken and any accumulated juices back to the pot and cover with the lid. Bake for 1 1/2 hours.

Garnish with parsley and serve immediately with hot toast or thin slices of pumpernickel and spread the softened garlic on the bread.