



Why Chestnuts?

The University of Missouri Center for Agroforestry
NUTRITION and Your Health

Chestnuts: The "UnNut" You'll Love!

As you consider healthy food choices for your family, why not "go nuts?"

Nuts offer a range of excellent health benefits and will add flavor, crunch and appeal to every diet. Many nuts are a delicious source of unsaturated fatty acids, protein, fiber and antioxidant vitamins like vitamin E.

Chestnuts are called the "UnNut" because nutritionally, they hardly resemble their tree-nut cousins. Unlike pecans and walnuts, chestnuts contain just a trace of fat. They are also the only nut that contains a significant amount of vitamin C. Like all plant foods, chestnuts contain no cholesterol. For weight watchers, chestnuts are a low-calorie feast.

Not only are chestnuts delicious with a sweet, mild flavor, they are rich in nutritional benefits. Just a handful of

other foods can match the nutritional value of a chestnut!

Chestnuts Add the Gourmet Flair

There's much more to chestnuts than roasting on an open fire!

You'll discover a whole new flair in gourmet food when you start preparing the many exciting recipes that feature the chestnut.



Photo: Jacqueline Kazil, Chestnut Souffle; Chef Peio Aramburu, Trattoria Strada Nova, Columbia, Mo.

Chestnuts can be incorporated into a wide range of dishes, from soups and poultry to appetizers, casseroles and pastries. A puree made from cooked chestnuts is used as a filling for dessert crepes, and candied chestnuts or "marrons glace" are used in a variety of sweet

desserts.

Nutritionally, chestnuts are similar to whole grains and offer a sweet, subtle flavor.



Go nuts for your heart!

We've all heard that nuts are filled with fat and off limits for dieters.



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However, a great deal of recent research links nut consumption to several key health benefits. The Food and Drug Administration, for example, recently approved claims that eating 1.5 ounces of nuts daily may reduce the risk of heart disease when they're part of a diet low in cholesterol and saturated fat.

Many nuts contain phytochemicals, compounds found in plants that seem to decrease the risk of cancer and heart disease. Research indicates an especially promising link between nut consumption and prostate cancer.

(Source: Food Processing, 11/1/2000)

Nut consumption is also linked to a decreased risk of heart disease in several studies. The Adventist Health Study, (35,000 participants), and the Nurses' Health Study (86,000 participants), both found a lower risk of heart attacks and heart disease for people who ate an ounce or more of nuts at least five times per week. In the Nurses' Health Study, the findings were quite significant—**35% fewer heart attacks were reported among women who consumed a serving of nuts five times per week.**

(source: Food Processing, 11/1/2000)

Essential minerals, like magnesium, copper, selenium and potassium also



Chestnuts: Chock Full of Nutrition!

- High water content and very little oil makes chestnuts virtually fat free
- High fiber content makes chestnuts a filling snack
- One-third the calorie content of peanuts and cashews!
- High in complex carbohydrates for energy
- Cholesterol free
- Contain as much ascorbic acid (vitamin C) as an equal weight of lemons
- Nutritionally similar to brown rice — described as “a grain that grows on a tree”

Nutrient composition of 1 ounce (3 chestnuts/ounce) roasted chestnuts:

(source: USDA; www.nal.usda.gov/fnic/foodcomp)

Protein:	1.2 grams
Fat:	0.3 grams
Carbohydrate:	14.4 grams
Fiber:	1.4 grams
Vitamin C	11 milligrams
Calories:	68
Cholesterol:	0
Sodium:	23 mg
Potassium:	608 mg

Also a source of magnesium and phytonutrients.

make nuts a good choice. For reducing high blood pressure, the DASH Diet recommends four to five servings per week of nuts, seeds and beans. This eating plan is from the Dietary Approaches to Stop Hypertension study, a large study of dietary patterns conducted at four major medical centers.

The truth about nuts and fat

Though nuts may show a higher fat content than some snacks, they contain the “good” fat -- unsaturated. These polyunsaturated and monounsaturated fats can reduce levels of lipoprotein, the “bad” form of cholesterol. Diets high in monounsaturated fatty acids lower both plasma cholesterol and triglycerides.

Nuts are also satisfying, due to their fiber content and light crunch. Substitute a handful of tree nuts instead of chips or pretzels next time you feel the urge for a snack — they'll stick with you longer, and you're likely to consume less calories throughout the day.

Counting calories? Choose chestnuts!

Chestnuts offer many of the fiber, mineral and cholesterol-free benefits of tree nuts, without the calories and fat content. Consider substituting roasted chestnuts for half of the rice in recipes, or use in

combination with pasta for a filling meal. Chestnuts are called “the low-fat, low-calorie exception.” Research also shows people who eat nuts have a higher chance of success on a diet, due to the ability of nuts to lessen cravings for food between meals.

(Source: Environmental Nutrition, 11/1/2000)

Nuts and the Mediterranean diet

Researchers at Brigham and Women's Hospital and the Harvard School of Public Health have found that people following a Mediterranean-style weight loss diet were able to keep weight off for a longer period of time than those following a traditional low-fat diet. This moderate fat diet, based on the diets of southern Europe and the Mediterranean, allows for a greater variety of foods that are considered very appetizing compared to stricter, blander diets. Participants substituted nuts and olive oil for saturated fats, like butter. The main fats included in the Mediterranean diet are unsaturat-

Nutrition Comparison of Nuts: (nuts per ounce)

	Calories	Fat
Macadamias	204	22 g
Hazelnuts	183	18 g
Almonds	169	15 g
Peanuts	166	14 g
Cashews	163	13 g
Chestnuts	69	0.6 g



Chestnut Chocolate Cake.
Photo: Jacqueline Kazil
Chef: Peio Aramburu, Trattoria Strada Nova restaurant, Columbia, Mo.

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ed, or “healthy fat” that is associated with lowering cholesterol. Researchers also found the diet had a blood-thinning effect and may be a good option for sustainable weight loss. (source: M. Hemmelgarn)

Preparing and storing chestnuts:

Choose chestnuts in shell that are plump, shiny and a dark, rich color. Check for any sign of mold and do not purchase if present. A solid, weighty feeling with no give when pressed with your thumb means a fresh nut that hasn't dried out.

Interestingly, chestnuts are perishable and must be handled as though they were a fruit or vegetable. They must be refrigerated and will dry out if left out in a bowl with other nuts.

To prepare fresh chestnuts for using in recipes calling for chopped chestnuts, you may cut them in half with a hand pruner or culinary shears. Heat chestnuts for 5 minutes in boiling water; a hot oven (425 degrees F); or heat in a microwave for 1-2 minutes. Remove the shells while the chestnuts are still warm. The inner skin, called the pellicle, tastes bitter and should be removed. Chestnuts require 30-40 minutes cooking time, depending on desired softness. Cooked chestnuts can be pureed in a food processor.



Carefully score chestnuts by cutting an arc from one side to the other. A chestnut knife allows for piercing the shell as you cut.

To prepare chestnuts for roasting and eating whole, hold the chestnut firmly, flat side down. Using a chestnut knife, carefully score the shell of the round side of the chestnut by cutting an arc from one side to the other.

A chestnut knife has a curved, pointed blade and is the safest way to score chestnuts. Chestnut knives are available at www.chestnutsonline.com. This cut allows the chestnut to pop open when roasting is complete, with the flat side of the shell acting like a hinge.



Scored chestnuts will pop open when fully cooked, allowing for easy extraction of the nut meat.

If you do not score chestnuts before cooking, they will explode! Now place the nut into a skillet coated with a small amount of oil. Stir with a spatula to achieve even heating. Cook on medium heat until the chestnuts pop open and the nutmeats reach desired softness. Chestnuts are especially delicious roasted on a grill, and can be cooked with a chestnut roasting pan. The chestnut pan has large perforations which allow for significant flame contact, enhancing the roasted, smoky flavor of chestnuts. Stir frequently. After roasting, peel shell away from the meat and enjoy!

At harvest time, chestnuts have a bland, starchy flavor and a crisp, carrot-like texture (they are approximately 50% water). Fresh chestnuts will keep for two months or more in the refrigerator. For long-term storage, they should be stored in a thin plastic bag (a zip seal plastic bag works fine). Prior to eating, they need to dry slightly — either for a few days at room temperature, or for a week or so in a mesh bag in the refrigerator. As they dry, in a process called “curing,” they become softer and some of the starch converts to sugar. Chestnuts are

cured when they show a slight give between the shell and the meat when pressed by your thumb (30% moisture level). At this stage, they are sweet, soft, and at the best condition to eat. Once cured, chestnuts should be eaten promptly to prevent spoilage.

In the microwave, lay approximately 20 scored chestnuts on a paper plate. Cook on high power for approximately 1-2 minutes (or until you hear a sizzle of steam escaping). Peel promptly while still warm.

Oven Roasted Chestnuts: Preheat oven to 425 degrees. Place scored nuts in a single layer on a roasting or baking pan. Roast 30-40 minutes.

Boiled Chestnuts : Cover scored chestnuts with water, and bring to a boil. Lower heat, and simmer for 25 minutes. Drain, and remove shells and skins. If the meat isn't tender, cover with boiling water and cook for a few minutes longer. Tender, boiled chestnut meats can be mashed or pureed.

Support Missouri agriculture

The University of Missouri Center for Agroforestry is conducting research to test improved chestnut cultivars that will allow Missouri farmers to be part of this growing market. The native American chestnut tree was completely devastated by blight by 1950, but



Not only are chestnuts delicious and healthy, they can be a profitable agricultural crop for Missouri farmers.

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the Chinese chestnut species is blight free, grows well in Missouri and shows promise as a profitable agricultural crop. The retail price for fresh chestnuts in the shell ranges from \$3 - \$5 per pound, and can be purchased from most major grocers. Through buying and consuming chestnuts, you can help increase demand and open markets in Missouri for this incredible “unNut.”

Every fall, the Center for Agroforestry hosts the **Missouri Chestnut Roast**, a showcase of Missouri agricultural products—especially those featuring chestnuts, pecans and black walnuts. Set in the beautiful rolling hills at the Horticulture and Agroforestry Research Center near New Franklin, Mo., the event is a fun-filled day featuring a range of Missouri agricultural products and the agroforestry practices that help produce them. Visit www.centerforagroforestry.org for information about our upcoming Chestnut Roast on **Oct. 16, 2004!** Join us for free samples of roasted chestnuts and explore Missouri’s excellent wines, cheeses and nut products. For more information on Chinese Chestnuts, or growing Chinese chestnuts in an agroforestry practice, contact the University of Missouri Center for Agroforestry at (573) 884-2874; or

Easy ways to enjoy the sweet, delicate flavor of Missouri chestnuts:

- Add roasted chestnuts to pasta, vegetable and grain dishes.
- Top baked winter squash with a tablespoon of brown sugar and roasted, chopped chestnuts.
- Spread crepes or thin pancakes with chestnut puree mixed with maple or vanilla syrup. Top with a sprinkle of cinnamon sugar.
- Puree boiled chestnuts in a food processor, and use to thicken soups and sauces
- Use roasted, seasoned chestnut halves instead of croutons on salad.



Photo: Jim Curley

Samples of fresh-roasted chestnuts are popular at the annual Missouri Chestnut Roast.

visit www.centerforagroforestry.org.

The University of Missouri Center for Agroforestry (UMCA), established in 1998, is an interdisciplinary research, teaching and technology transfer program. The Center is recognized as the

leading institution for biophysical, economic and social research related to temperate agroforestry and its benefits to landowners and the environment. Agroforestry practices benefit Missouri by increasing and diversifying products, markets, and farm income; improving soil quality; and reducing erosion, nonpoint source pollution and damage due to flooding. In addition, agroforestry practices enhance land and aquatic habitats for fish and wildlife and improve biodiversity.

Portions of this information provided by Melinda Hemmelgarn, M.S., R.D. Missouri Dept. of Health and Senior Services, Division of Community Health, Section for Nutritional Health and Services.

Selected images and information provided by:

- **Girolami Farms**
(www.chestnutsforsale.com)
- **Empire Chestnut Company**
(www.empirechestnut.com)
- **Allen Creek Farm**
(www.chestnutsonline.com)

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Find more great chestnut recipes online at www.centerforagroforestry.org; select the UMCA Publications link, and then Chestnut Recipes.



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Honeyed Chestnut Cornbread



image: www.chestnutsonline.com

Recipe: *Bon Appetit*, November 2002

- 2 cups yellow cornmeal
- 1 cup unbleached all-purpose flour
- 4 teaspoons baking powder
- 1 1/2 teaspoons coarse salt
- 1/2 teaspoon baking soda
- 1/2 cup (1 stick) unsalted butter, room temperature
- 1/4 cup honey
- 2 tablespoons (packed) golden brown sugar
- 4 large eggs, separated
- 1 cup vacuum-packed whole roasted chestnuts, coarsely chopped
- 1 tablespoon chopped fresh thyme
- 1 cup buttermilk

Chestnut Bisque



www.chestnutsonline.com

- 1 medium carrot, diced
- 1/2 onion, chopped
- 1 stalk celery, chopped
- 1 tbsp. butter or canola oil
- 1 lb fresh chestnuts, peeled
- 3 C chicken bouillon
- 1/4 C apple juice
- 1/4 C fresh parsley, chopped
- pinch ground nutmeg
- 1/4 tsp salt
- fresh ground pepper to taste
- 1/2 tsp dried tarragon
- nonfat sour cream or yogurt (optional)

Salmon and Rice with Chestnuts



www.chestnutsonline.com

- 1 C basmati rice
- 2 C water
- 4 salmon steaks
- 2 tbsp butter
- Chestnut garnish:
 - 1 lb fresh chestnut (peeled and chopped)
 - 2 tbsp butter
 - 2 tsp brown sugar
 - 2 tbsp chopped parsley

Chocolate Layered Cake with Chestnut Mousse



Jacqueline Kazil

Cake:

- 8 oz. sugar
- 4 oz. all-purpose flour
- 4 oz. pureed chestnuts (Not raw. Cook then puree in blender.)
- 8 eggs

Mousse:

- 1 cup chestnut puree
- 1 cup heavy cream, whipped until stiff
- 1/3 cup sugar
- 1 tsp. lemon juice
- 1 tsp. vanilla extract

Chestnut Souffle



Jacqueline Kazil

- 1 cup unsweetened chestnut puree
- 4 egg yolks
- 1/3 cup sugar
- 3 tablespoons milk
- 1 tablespoon brandy
- 4 egg whites
- Unsweetened whipped cream

Chestnut Stuffed Quail



Jacqueline Kazil

- 1 cup spinach
- 1/2 cup cooked, peeled chestnuts
- 1/4 cup dried apricots
- 1/4 cup goat cheese
- 2-4 small quail
- Assorted vegetables: artichokes, potatoes, carrots, turnips, parsnips and chestnuts

Olive oil for roasting
Salt and pepper to taste

Chestnut Bisque

Melt the butter in a large saucepan over medium heat. Add carrots, onion, and celery, and saute until soft, about 7 minutes. Add chestnuts and continue cooking 5 minutes, stirring occasionally.

Add stock and bring to a boil. Reduce heat to simmer and add apple juice, parsley, nutmeg, salt and pepper. Simmer 15 minutes. Add tarragon and continue cooking 5 minutes. Puree the soup in a blender. Return to saucepan and reheat. Adjust seasonings as needed. Serve with a dollop of yogurt or sour cream. Serves 4.

Chocolate Layered Cake with Chestnut Mousse

Combine eggs with sugar in mixer; blend until smooth. Blend in chestnut puree. Incorporate the flour slowly. Bake cake at 375 degrees for 20-25 minutes. Set aside to cool.

Combine all mousse ingredients in separate bowl and stir until mixed together.

Separate cake into three layers. Place one layer, then spread half the mousse. Place a second cake layer, then the remainder of the mousse. Finish with top cake layer.

Top with chocolate ganache, cooked chestnut halves and powdered sugar, if desired. For ganache, boil equal parts of heavy cream and chopped chocolate until mixture is smooth. Dark or milk chocolate can be used.

Recipe: Chef Peio Aramburu, Trattoria Strada Nova, Columbia, Mo.

Chestnut Stuffed Quail

Work the spinach, peeled chestnuts, apricots, goat cheese and salt and pepper to taste with your hands until smooth. Stuff the quail and sear in olive oil, breast side down, until golden brown. Place quail breast side up in 400 degree oven and bake 7 minutes.

Vegetable bed: Brush vegetables with olive oil and roast until tender. Place stuffed quail on top of vegetables. Deglaze searing pan with red wine and use as a sauce.

Recipe: Chef Peio Aramburu, Trattoria Strada Nova, Columbia, Mo.

Honeyed Chestnut Cornbread

Preheat oven to 350°F. Butter and flour 9-inch round cake pan with 2-inch-high sides. Whisk first 5 ingredients in medium bowl to blend. Using electric mixer, beat butter, honey, and sugar in large bowl until pale. Add yolks 1 at a time, beating well after each addition. Mix in chestnuts and thyme. Mix in dry ingredients, alternating with buttermilk, in 3 additions each. Using electric mixer fitted with clean dry beaters, beat whites in another large bowl to medium-stiff peaks. Fold whites into batter.

Pour batter into prepared pan. Bake until top is golden and slightly puffed, about 50 minutes. Cool corn bread in pan on rack 10 minutes. Serve warm or at room temperature. (Can be made 1 day ahead. Cool completely. Wrap in foil and let stand at room temperature.) Makes 12 servings.

Salmon and Rice with Chestnuts

Rice -- Bring 2 C water to a boil. Add the rice, cover and bring back to a boil. Reduce heat to simmer and cook 15 minutes. When done, add half the chestnut mixture and stir well. Garnish with a bit of chopped parsley.

Salmon -- Melt 2 tbsp of the butter and brush lightly on both sides of each salmon steak. Grill or BBQ until done. Time varies depending on the thickness of the steaks -- typically about 10 min. Garnish with half of the chestnut mixture.

Chestnut Garnish -- Melt 2 tbsp butter in a skillet and add the chopped chestnuts and brown sugar. Saute until nuts are golden.

Chestnut Souffle

In a small mixer bowl, beat egg yolks until thick and lemon colored, about 5 minutes; set aside.

In a small mixer bowl, beat the puree, sugar, milk, and brandy until smooth. Beat in egg yolks until well combined. Wash beaters thoroughly.

In a large mixer bowl, beat egg whites until stiff peaks form. Fold the beaten whites into the chestnut mixture. Turn into an ungreased 1-½ quart soufflé dish. Bake in a 350-degree F. oven for 35 to 40 minutes. Serve immediately. Top with unsweetened whipped cream. Makes 4 servings.