

# Properties of Gaziantep Pita

Hatice Pekmez\*, Betül Bay Yılmaz

*Naci Topçuoğlu Vocational School, University of Gaziantep, Gaziantep 27180, Turkey*

*\*pekmez@gantep.edu.tr*

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**Abstract:** Bread is the most important food produced from wheat, which is the raw material of many foods. It is prepared by shaping and baking of the fermented or nonfermented dough obtained mixing flour, water and salt. In Turkish cuisine, bread has a great importance. The sacred bread is also the symbol of labor and fertility. It is the basic food stuff of the society because it is cheap, filling, it is a source of energy and it meets the protein need. One of the regional breads which has an important place in the traditional Turkish cuisine is Gaziantep pita. In 2017, the geographical sign registration certificate of the Gaziantep pita was awarded to Gaziantep which is among the UNESCO's "Creative Cities Network" in the gastronomy field by Gaziantep Commodity Exchange. Gaziantep pita which is pertain to Gaziantep, well cooked, distinctive in appearance, smell and color, is produced by kneading of flour, water, salt and yeast, fermentation of dough, then shaping appropriately and baking in stone/ wood ovens. The purpose of this review is to give information about the basic components of Gaziantep pita and components' properties, production stages, physical and chemical properties and shelf life of Gaziantep pita.

**Key words:** Gaziantep pita; components; production; properties

## 1. Definition and history of bread

Bread is generally produced from shaping and baking of fermented or unfermented dough prepared by mixing and kneading of cereal flour, water and salt. Mostly wheat flour is used in bread production, but bread is made also from cereal flour such as corn and rye flour (Baysal and Över, 1994).

According to the definition of Turkish food codex bread and bread varieties communiqué (communiqué no: 2012/2), bread is made by appropriately kneading, shaping, fermentation and baking of dough by the addition of wheat flour, water, salt, yeast (*Saccharomyces cerevisiae*), sugar, enzymes, malt flour as an enzyme source, vital gluten and allowable additives.

There are various narratives about the emergence of bread. According to general belief, the first people crushed hard grain seeds with stone to eat, and soaked with water for softening purpose. They then increased their solid matter to make them satisfactory, and thus consumed the resulting dough without baking. When

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they realize that the mixture is tastier when they stay on hot stones, they start to cook the dough. Thus, unfermented, flat, yufka-like pastries made in many parts of the world and Anatolia have emerged. With the discovery of the bread yeast, bread has changed as well as everything has changed throughout history and various forms of bread have appeared (Kalkışım et al, 2012; MEB, 2012).

## 2. Nutritional values of bread

Turkey, with 200 kilograms per capita bread consumption, has been involved in the 2007 edition of the Guinness Book of Records as "the most consuming country bread". Daily bread consumption depends on the characteristics of the individual, the habits of life-working styles and the composition of the diets (MEB, 2012).

All the nutrients found in wheat are also in bread. However, since the vitamins and minerals required for adequate and balanced nutrition are mostly found in the wheat germ (embryo) and outer scab of wheat (bran), the amounts of nutrients decrease due to purification (endosperm separation) of wheat when flour is produced. In addition, fermentation process in bread making increases the amount of certain vitamins and minerals in the body (Kalkışım et al, 2012; Kuter, 2011).

The average nutrient values found in 100 grams of white bread are: 31.8 gr moisture, 9.1 gr protein, 56.6 gr carbohydrate (including pulp), 7.0 gr calcium, 0.7 mg iron, 0.09 mg vitamin B1, 0.06 mg of vitamin B2 and 0.8 mg of niacin. Also it supplies app. 260 cal energy. When the daily necessities of an adult person are considered; 300 g bread provides 30-36% of energy, 39-42% of protein, 9-57% of calcium, 50-75% of vitamin E, 27-63% of vitamin B1, 12% of B2 and 30% of niasin. In protein requirement, protein quality of food is also important with ratio of energy to protein. The energy rate from the seed protein varies between 13 and 15% ( Kalkışım et al, 2012; Kuter, 2011).

## 3. Local breads and Gaziantep pita

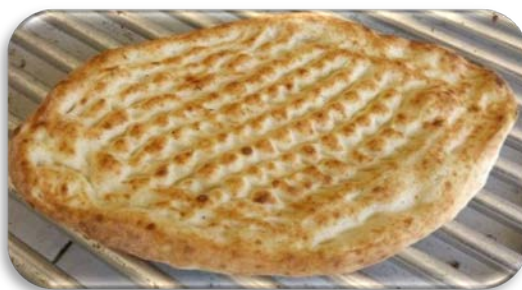
The importance of bread in Turkish cuisine is great. It is considered sacred, and it is also the symbol of labor and abundance. The society is the basic food stuff because it is cheap, satisfying, it is a source of energy and it meets the protein need. Many kinds and flavor breads were made with grains especially wheat grown in the Anatolian soil. In general, it has been observed that bread types in each region made with or without yeast were mostly baked in sheet, oven and tandır (Koca and Yazıcı, 2014).

One of the most important local breads in the traditional Turkish cuisine is Gaziantep pita. It is made from white wheat flour and baked in Gaziantep bakeries. In 2017, the geographical sign registration

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certificate of the Gaziantep pita was awarded to Gaziantep which is among the UNESCO's "Creative Cities Network" in the gastronomy field by Gaziantep Commodity Exchange. Gaziantep pita which is pertain to Gaziantep, well cooked, distinctive in appearance, smell and color, is produced by kneading of flour, water, salt and yeast, fermentation of dough, then shaping appropriately and baking in stone or wood ovens.

Criteria for Gaziantep pita was determined exactly by Gaziantep Commodity Exchange. Gaziantep pita is a plain bread with a width of about 20 cm, a length of 39 cm and a thickness of about 1 cm (Figure 1). There is a 1.35 x 1.40 cm surface area with generally homogeneous nail spacing due to application special dough shaping technique using by fingertips. Chemical and physical properties of Gaziantep pita are given in Table 1. This table has been prepared by obtaining results from studies done on the pitas taken from three different local producers (Gaziantep Commodity Exchange, 2017).



**Fig. 1.** Picture of Gaziantep pita (Gaziantep Commodity Exchange, 2017)

#### 4. Properties of raw materials (flour, water, salt, yeast) used in Gaziantep pita

Flour is the first basic component of bread. In Gaziantep pita making, generally wheat flour of type 550 or type 650 obtained from *Triticum aestivum* wheat (0.55-0.65% of ash in dry matter) is used. The flour used should not contain foreign taste and odor. The moisture content should be max 14.5% and the protein value of the dry substance should be min 10.5%. The acidity in the sulfuric acid type should not exceed 0.07% (in dry matter). Flour used in Gaziantep pita should be able to absorb high amount of water and should be thicken quickly and easily during kneading. In addition, the dough must be rollen without tearing and provide the desired base and swell (Gaziantep Commodity Exchange, 2017; Turkish food codex wheat flour communique, 2013).

The other component of bread is water. Water constitutes almost 40% of the total dough mass. Flour

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starch particles swell, wheat proteins absorb water to gain an elastic structure, a humid environment for the start and spread of alcohol fermentation is provided by means of water. In addition, the necessary biological changes of the enzymes and yeasts are carried out with the substances found in the water that pass through the water. The water used in the formation of dough in Gaziantep pita must be clean, clear and have medium hardness (50-100 ppm) and potable quality (MEB, 2012).

In practice it is known that doughs with salt are easily processed. Salt improves the taste and flavor of bread, affects the physical properties of the dough, strengthens the gluten, inhibits dough fermentation and yeast activity. In addition, moulding of salt-added bread takes longer time than the non added ones. Breads made without salt added mould 4th day, while salty bread moulds on 7th day. The amount of salt that is legally to be found in Gaziantep pita is 1.5% of dry bread. The salt used in bread making should be free of physically clean, bright and white colored, moisture-absorbing materials that will prevent clumping and facilitate resolution (Gaziantep Commodity Exchange, 2017; MEB, 2012; Turkish food codex bread and bread varieties communique, 2012).

Yeast (*Saccharomyces cerevisiae*), a living organism used in bread making, is the main component of fermentation. During the fermentation, the carbon dioxide that accumulates in the dough provides the swelling. Alcohols, aldehydes, ketones and organic acids provide characteristic flavor and aroma of bread. In addition, another role of the yeast is to increase the elasticity of gluten. In Gaziantep pita, usually 2-3% of the wet or sour yeast is used (Gaziantep Commodity Exchange, 2017; MEB, 2012).

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**Table 1.** Chemical and physical properties of Gaziantep pita (Gaziantep Commodity Exchange, 2017)

Property		Value
Weight (g)		175.0 - 200.0
Width (cm)		20.0 ± 2.0
Length (cm)		39.0 ± 2.0
Thickness (cm)		0.75 - 1.30
Nail space	a (cm)	1.50 ± 0.10
	b (cm)	1.35 ± 0.15
Nail space	a (cm)	1.35 ± 0.10
	b (cm)	1.45 ± 0.15
Upper surface color	L*	55.01 ± 0.90
	a*	5.63 ± 0.40
	b*	22.74 ± 0.20
	YI*	61.10 ± 0.60
Lower surface color	L*	72.64 ± 0.40
	a*	1.79 ± 0.10
	b*	19.35 ± 0.60
	YI*	41.96 ± 0.70
Moisture (%)		34.17 ± 0.97
Protein (db %)		12.68 ± 0.25
Salt (db %, max)		1.50

## 5. Production stages of Gaziantep pita

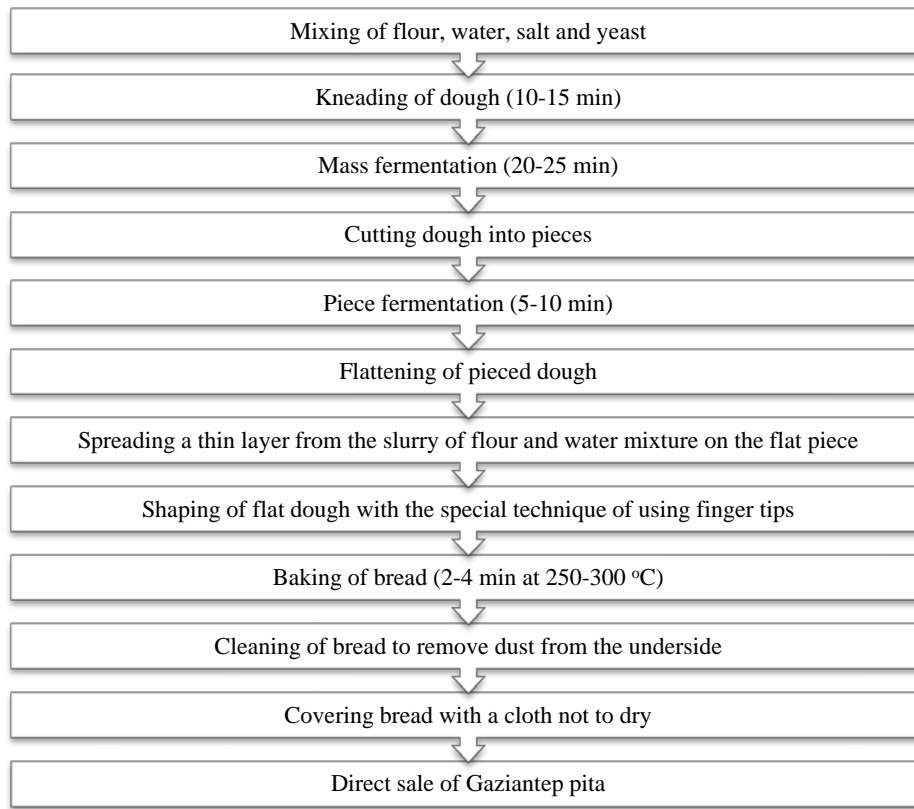
Production stages of Gaziantep pita is represented in Figure2. In the first step of making Gaziantep pita, dough ingredients (sifted flour, water, salt solution and wet / sour yeast) are mixed in the dough tanks. It is usually kneaded with forked kneaders for 10-15 minutes. The homogenized slurry is rested for 20-25 minutes. This stage is called mass fermentation. Then the pieces are taken out of the fermented dough. Kneading is done in kneading machine, while all other operations are done manually. The dough in the piece form is left for a

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second rest for 5-10 minutes (piece fermentation). After the resting dough is flattened by the merge, it is spread on the dough as a thin layer from the slurry of flour and water mixture. The dough is then shaped according to a special technique of using finger tips. This process is followed by baking process. The pita is driven into the furnace with the aid of a flat, generally hardwood shovel. It is cooked for 2-4 minutes in ovens (traditionally in stone or wood ovens) at temperatures of about 250-300 C°. The baked breads are cleaned from the underside of subsieve dust and covered directly with a cloth for preventing from drying on the set (Gaziantep Commodity Exchange, 2017).

## 6. Preservation of Gaziantep pita

Gaziantep pita is usually consumed hot by Gaziantep people. The shelf life of the product is 3-4 hours depending on storage conditions. At the end of this period, the product does not cause a negative situation in terms of human health, either microbiologically, physically or chemically. However, this is not preferred by the consumer at the end, because it usually results in loss of sensory properties (Gaziantep Commodity Exchange, 2017).



**Fig. 2.** Production flow diagram of Gaziantep pita

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