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The examination of bread

Bread has always been one of the most popular and appealing food products due to its superior nutritional, sensorial and textural characteristics ready to eat convenience as well as cost competitiveness.

Bread is made with three basic ingredients: grain, water, and bakers' yeast. The harvested grain is ground according to the type of bread being made. All grains are composed of three parts: bran (the hard outer layer), germ (the reproductive component), and endosperm (the soft inner core). All three parts are ground together to make whole wheat and rye breads. To make white flour, the bran and the germ must be removed. Since bran and germ contain much of the nutrients in grain, the white flour is often "enriched" with vitamins and minerals. Some white flour has also been fortified with fiber and calcium .The grinding takes place at grain mills, which sell the grain to bakeries in bulk. The bakeries keep the grains in storage sacks until they are ready to be used. In the baking factory, water and yeast are mixed with the flour to make dough. Additional ingredients such as salt, fat, sugar, honey, raisins and nuts are also added in the factory.

Commercial bread making is held to strict government guidelines regarding food production. Further, consumer preferences compel bread producers to maintain a high quality standard of appearance, texture, and flavor. Therefore, quality checks are performed at each step of the production process. Producers employ a variety of taste tests, chemical analyses, and visual observation to ensure quality. Moisture content is particularly critical. A ratio of 12 to 14% is ideal for the prevention of bacteria growth. However, freshly baked breads have a moisture content as high as 40%. Therefore it is imperative that the bakery plants be kept scrupulously clean. The use of fungicides and ultraviolet light are two popular practices.

The distribution of fresh bread is a particular problem. The consumer expects a certain microbiological shelf life of bread. Bread that has been packed in a hermetically sealed packet will stay mould free for a couple of days. Next to the phenomenon of staling, mould will develop. It is even possible that harmful bacteria grow in the bread. This is possible because the crumb of bread has a rather high moisture content. Methods (physical as well as chemical) to extend the mould free shelf life of bread are discussed in this chapter.

Although some people think of bread chiefly as an energy food, it is an important source of a number of essential nutrients. Because bread is widely used in substantial quantities, it is an economical source of food energy and of protein and when enriched furnishes significant quantities of iron and three B vitamins. The proteins of flour, present in considerable amounts in breads, are better utilized by the body when eaten with proteins from such foods

Examination bread carried out on organoleptic and physicochemical parameters.

Among minerals there is most content of potassium in bread. The external evaluation expert estimates bread its shape, surface condition and color of the bread should not be flattened, crumpled or flat. Color should be uniform with no burnt pieces and crust thickness should be within 3.4 mm.

Also conduct evaluation structure of crumb the following indicators:

- porosity;
- elasticity;
- humidity;

Experts must remember that the porosity wheat bread is always greater porosity rye bread.

Evaluation of bread is in the following physicochemical parameters:

- Humidity;
- Porosity;
- Acidity;
- Pesticides;
- Toxic elements;

Bread aroma is an important parameter for bread quality, and this review aims to provide an overview of aroma compounds identified in bread crumb and how these compounds are formed. More than 150 volatile compounds were identified in bread crumb, and they mainly originated from the fermentative activity of yeast, from oxidation of flour lipids, and to a lower extent from Maillard reactions. Of those volatile compounds, 45 compounds can be characterized as aroma compounds, because they most likely can be sensed when the bread is eaten because of their high odor activity values and flavor dilution factors. The influence of ingredients and mixing conditions on bread aroma has scarcely been investigated. The fermentation conditions (yeast level and strain as well as fermentation temperature and time) were found to significantly influence the aroma of bread crumb. Yeast level and strain mainly influence formation of compounds directly related to the fermentative activity of yeast, whereas fermentation temperature and time also influence formation of compounds from oxidation of flour lipids. In a separate varieties of bread are determined by the content of sugar and fat. Moisture content is determined by drying to constant weight at 105 degrees.

The acidity is determined by titration, pesticides determined by liquid chromatography.

Microbiological parameters do not regulate in bread.

Literature:

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