DRAFT TANZANIA STANDARD

Glossary of terms relating to bakery industry

TANZANIA BUREAU OF STANDARDS
0 FOREWORD

Various terms relating to bakery are being frequently used in bakery industry as well as by industries producing raw material for the bakery industry. In order to have a uniform terminology and to give authoritative definitions to these terms, this standard has been prepared.

This standard would also help in better understanding of the terms in the international trade of bakery products.

In the preparation of this Standard assistance was derived from: IS 9373:1979 Glossary of terms relating to bakery industry, published by the Indian Standards Institution.

1.0 SCOPE

This standard defines the various terms used in bakery industry.

2.0 TERMS AND DEFINITIONS

2.1 Absorption - The amount of water absorbed and retained, expressed as percentage, of flour mass, that is required to produce optimum dough.

2.2 Acetic Acid (CH₃COOH) - An organic acid, sour in taste, colourless, and with sharp odour; an active constituent of vinegar; used in bread formula as mold/rope inhibitor.

2.3 Acetone Peroxide - A chemical powder, which when added to flour in small quantities (1 to 45 mg/kg) has the ability to improve its bread making quality. It is primarily a maturing agent but also has some bleaching action.

2.4 Acid Value - It is the number of milligrams of potassium hydroxide required to neutralize free fatty acids present in 1 g of the fat, and is an indication of the extent of free fatty acids present in an oil or fat.

2.5 Active Oxygen Method - A method for measuring the stability of fats and oils by bubbling air through the heated materials and measuring the formation of peroxides.

2.6 Additive - An ingredient added to flour to improve its baking properties or shelf life.

2.7 Aeration (Fat) - The process of incorporation of minute air bubbles in hydrogenated fat; also known as creaming process.

2.8 Agar-Agar - A dried extract of red algae (a sea weed) used as a gelling agent.

2.9 Albumen -- A class of protein, present in egg, that can be dissolved in water and is coagulable by heat.

2.10 Aleurone Layer - A botanical term denoting the proteinaceous cellular layer which envelopes the endosperm and separates it from the bran or seed of the wheat kernel.

2.11 Alveograph - A dough testing instrument that measures the resistance to deformation and extensibility of a clamped disc-shaped piece of dough, by forming a bubble, by means of air pressure applied from below the test piece at a constant temperature.

2.12 Ammonia - A colloquial term generally used by biscuit bakers for ammonium bicarbonate.

2.13 Ammonium Bicarbonate (NH₄HCO₃) - A white powder which on heating yields ammonia gas, carbon dioxide gas and water vapour. It is used in biscuit manufacture as a chemical aerating agent. It leaves no residue in the baked product and, therefore, imparts no off-taste.
2.14 **Amylase** - An enzyme that, in the presence of water, converts large molecules of starch to sugar (maltose) units.

  a) **α-Amylase** -- An enzyme, which, in the presence of water, converts starch molecules to maltose units.

  b) **β-Amylase** - An enzyme, which in the presence of water, converts starch molecules to maltose and dextrin units.

2.15 **Amylograph** - An instrument that measures the consistency or viscosity of a slurry of starchy flour and water as it is heated through a pre-determined cycle. The viscosity is measured by the resistance that the slurry offers to a mixing paddle. It is used to measure the amylase activity of flours.

2.16 **Antimicrobial Agent** - Any substance, usually a chemical or a mixture of chemicals that has the ability to prevent or retard the growth of micro-organisms.

2.17 **Antioxidants** - Naturally-occurring substances or synthetic chemical compounds which can retard the development of oxidative rancidity in fats and fat-containing foodstuffs. Sugar and lecithin are examples of natural antioxidants, while butylated hydroxy-anisole (BHA), butylated hydroxy toluene (BHT) and dodecyl gallate are examples of chemical antioxidants.

2.18 **Antistaling Agents** - Substances such as sodium stearate, polyoxyethylene monostearate and glyceryl mono stearate (GMS), that retard the staling of baked products.

2.19 **Arrowroot Starch**

2.19.1 Starch from the genus *Maranta* Linn, and *Curcuma* Linn.

2.19.2 Industrial product corresponding to 2.19.1 obtained by wet milling from tuberous roots of various species of the genus *Maranta* Linn and in particular of *Maranta arundinatea* Linn and *Curcuma augustifolia* Roxb.

**NOTE 1** - According to its geographical origin several designations of arrowroot exist:

  a) West Indies arrowroot;
  b) Barbados, Jamaica or Bermuda arrowroot; and
  c) Saint Vincent arrowroot.

**NOTE 2** - The use of the term arrowroot to designate other starches should be avoided. These products should be called starch accompanied by the name of the plant from which it is obtained.

2.20 **Ascorbic Acid (Vitamin C)** - A naturally occurring vitamin that is used in the baking industry as an improving agent. Its overall effect on the physical properties of dough depends both on its oxidizing and reducing actions.

2.21 **Ash Content** - The amount of incombustible residue, left after incinerating a weighed amount of a material and expressed as percentage.

2.22 **Azodicarbonamide** - A chemical in the form of powder which, when added to flour in small quantities (1 to 45 mg/kg) has the ability to improve the bread-making quality of flour.

2.23 **Bake Test** - A test designed to show the baking properties of flour when subjected to the parameters of bulk production, and carried out under controlled conditions.

2.24 **Baker** - a person who produces and/or sell flour based food baked in the oven such as bread, cookies, cakes etc.
2.25 **Bakery** - Establishment that produces and/or sell flour based food baked in the oven such as bread, cookies, cakes etc.

2.26 **Baking Loss** - The loss of mass in a product as a result of baking. In the case of non-fermented products, the difference in mass between the dough or batter from the moment when it is put in the oven and when it emerges as a baked product. This includes the loss of fat to the baking sheet or tin.

2.27 **Baking Powder** - A balanced mixture of sodium bicarbonate and an acid. Baking powders when moistened and heated produce a leavening gas in batters and doughs. They should leave only tasteless, harmless residues. The acid substances commonly used are tartaric acid, cream of tartar, calcium acid phosphate, sodium acid pyrophosphate, and sodium aluminium phosphate.

2.28 **Baking Quality** - The capacity of flour to produce a baked product. Bread-making quality refers to baking quality of flour used.

2.29 **Baking Soda** - See 2.183. (Sodium bicarbonate)

2.30 **Barm** - A local liquid ferment used for fermenting the doughs in place of yeast.

2.31 **Batter** - A thin mixture of flour, water 'or milk, eggs, or any other permitted ingredients, such as is used for making cakes.

2.32 **Benzoyl Peroxide** \((C_6H_5CO_2)_{2}O_2\) - A chemical powder that is added to flour in small quantities for its beneficial bleaching action.

2.33 **Biscuits** - A term generally used for that bakery product which is made from a dough which is sheeted, cut and baked immediately thereafter to a low moisture.

2.34 **Bleaching Agent** - A substance added to flour to bleach out the yellow pigment naturally present in flour and thereby give a whiter appearance to the flour and the bread produced from it.

2.35 **Blending Capacity** - The ability or capacity of a flour to carry proportion of low quality flour and still produce bread of satisfactory quality.

2.36 **Bread** - Baked aerated dough, the primary ingredients of which are flour, yeast, salt and water. It may also contain other permitted ingredients.

2.37 **Bread-Making** - The overall process of converting flour into bread which generally consists of different stages like mixing, fermentation, dough make-up, proofing and baking.

2.38 **Brew** - A mixture of water, yeast, yeast nutrients and varying amounts of flour used in some bread-making processes.

2.39 **Brimac Process** - A bread-making process developed at the Bread Research Institute of Australia which uses mechanical action (mixing) to develop the dough to optimum physical state.

2.40 **Brown bread** - product prepared from baker’s flour and bran or a mixture of whole wheat flour and baker’s flour

2.41 **Buckiness** - A term used in baking technology to describe doughs that are too soft or too elastic for proper handling.

2.42 **Buckling** - A defect which causes the crackers to warp during baking generally resulting in raised centres.

2.43 **Buffering Value** - The ability of a substance to maintain the pH of a solution, batter or dough at a constant level.
2.44 **Bulk Fermentation** - For dough under fermentation, this is the period from the mixing stage to the dividing stage.

2.45 **Butylated Hydroxyl Anisole (BHA)** - An antioxidant which has good ‘carry over’ properties (through the baking stage) in baked products. It is used either by itself or in combination with other antioxidants or synergists.

2.46 **Butylated Hydroxyl Toluene (BHT)** - An antioxidant, used in the baking industry, either alone or in combination with BHA.

2.47 **Calcium Propionate** - An inorganic salt used in small quantities, in bread to inhibit the growth of moulds and to some extent, rope.

2.48 **Caramel** - A colouring matter (dark brown colour) obtained by the action of heat (170-180°C) and ammonia on sugar.

2.49 **Carbon Dioxide** - The gas evolved by the action of yeast on fermentable sugars or by the action of baking powder in a baking process. For example, in fermenting dough, carbon dioxide causes the dough to rise (leaven). This is essential for the production of the desirable spongy grain and texture of bread crumb.

2.50 **Cassava** - Roots of tapioca plant (*Manihot palmata*) that is used for the production of starchy flour. It is also used as admixture with wheat flour for certain type of bakery products.

2.51 **Chorbywood Bread Process** - Bread-making process developed by the British Baking Industries Research Association, Chorbywood, UK, which uses high-speed mixing for the optimal development of dough, thereby eliminating the need of bulk fermentation.

2.52 **Colour (Flour)** - A measure of the branny contamination in flour and thereby milling efficiency. The colour of flour is determined by a special photoelectric instrument, as Kent Jones and Martin Colour Grader or Agtron Colour Instrument. Generally for this determination, Peker test is popular with bakers on account of quick colour comparison of flour.

2.53 **Composite Flour** - A flour made by blending varying amounts of non-wheat flour with wheat flour and used for production of baked goods that are traditionally made from wheat flour.

2.54 **Consistency (Dough)** - The feel or firmness of a dough (also called viscosity) as measured by Farniograph or a similar instrument. It signifies the handling properties of dough.

2.55 **Continuous Process** - In relation to bread making, refers to an automatic process that is essentially continuous from the mixing of the dough to the exit of the bread from the oven.

2.56 **Conventional Process** - In relation to bread making, refers to older processes such as the straight dough or the sponge and dough processes involving bulk fermentation.

2.57 **Cookie** - A small sweet baked product. It includes items like small fancy cakes, biscuits, pastries, etc.

2.58 **Corn Flour** - Flour obtained by milling of the grain of maize.

2.59 **Corn Syrup** - A sweetener prepared by hydrolysing maize starch by means of either acids or enzymes. It is the ‘commercial liquid glucose’ used in sugar and flour confectionery.

2.60 **Cream** - In bakery trade the term ‘cream’ means basically a homogenous mixed preparation of hydrogenated fat or bakery shortening, icing sugar, flavours and permitted food colours with or without other ingredients in small proportions.
2.61 **Creaming** - The action of whipping fat in a manner such that it will incorporate minute air bubbles and become light and 'creamy' in texture. In bakeries, fat is generally 'creamed' with other ingredients such as sugar, which facilitates the creaming process. ‘Creaming Quality’ as applied to fat is the ability to absorb air during mixing.

2.62 **Cream of Tartar (KHC$_4$H$_8$O$_6$)** - Potassium acid tartrate; an acid substance, used as a chemical leavening agent.

2.63 **Crispness** - Eating quality of biscuits which makes it crunchy to bite; opposite to soggy or soft.

2.64 **Critical Mixing Speed** - It is the lowest mixing speed of a dough mixer that can develop dough in a mechanical development bread making process.

2.65 **Crumb Grain** - The cell structure exhibiting size and shape of bread crumb determined by visual examination.

2.66 **Crumb Texture** - The cell structure exhibiting hardness, coarseness and silkiness of bread crumb as determined by feel.

2.67 **Crust** - The hard crisp outer surface of a loaf of bread. The crust colour indicates the degree of baking.

2.68 **Cupping** - A defect which causes biscuits to warp during baking and the sides to rise. This is the opposite of 'buckling'.

2.69 **Cutting Machine** - A machine used for cutting the dough sheet into specified sizes and shapes for biscuits. It consists of one or more sets of rollers, which sheet out the dough and a cutting section which simultaneously cuts the biscuits and embosses them with an appropriate design.

2.70 **Cysteine** - A naturally occurring amino acid that contains Sulphur. It is used in the baking industry, particularly in chemical development bread-making process, because of its ability to reduce the mixing requirement for optimum dough development.

2.71 **Degradation** - Breakdown of large molecules of any substance into smaller fragments. Here it pertains to the breakdown of starch by amylases or proteins by proteases.

2.72 **Denaturation** - The destruction of the natural properties of proteins by physical or chemical means. An example of denaturation is the cooking of flour proteins in dough to produce the semi-rigid structure of bread - a thermal denaturation of proteins.

2.73 **Desiccated Coconut** - The shredded and dried kernel of the coconut. It is often added to bakery products.

2.74 **Developer Mixer** - A dough mixer that is used to develop the dough to its optimal physical state for bread-making.

2.75 **Dextrins** - Modified starch prepared from starch by heat treatment in the dry state, with or without the addition of small quantities of chemical reagents.

2.76 **Diastatic Activity** - In flour quality evaluation, it is the measure of the activity of the starch degrading enzymes of the flour. It can be expressed in terms of the maltose (sugar) produced or in terms of the peak viscosity in the Amylograph test.

2.77 **Dilatation of Fats** - When fats change from solid to liquid at the same temperature, there is an increase in volume. Measurement of this increase is used to estimate the amount of solid fat present in a mixture at any given temperature.

2.78 **Divider** - A machine used in bread-making to divide a large piece of dough into desired size pieces.
2.79 **Dough** - A mixture of flour, water and other ingredients developed to optimum consistency and viscosity. It is used for producing bread or other bakery products.

2.80 **Dough Development** -- The elaboration of the physical properties of dough that are the best for the production of bread. This can be achieved by fermentation as in dough ripening or maturing, by mixing as in mechanical development or by a combination of certain chemicals and mixing as in chemical development.

2.81 **Dough Expansion Test (Pelschenke)** - The time required for a dough ball made from wheat meal, water and yeast and suspended in water at 30°C to disintegrate. It is a rough measure of the quality of wheat protein for bread-making and is used in screening for baking quality in new varieties of wheat during the early generations.

2.82 **Dough Maturing Agents** - Chemical substances such as potassium bromate, potassium iodate, ascorbic acid (Vitamin C) which when added to dough in small amount improve the handling and bread making quality of the dough.

2.83 **Dough proofer** - is a warming chamber used in baking that encourages fermentation of dough by yeast through warm temperatures and controlled humidity.

2.84 **Dough Tests** - Tests made on doughs to obtain information on the bread-making quality of the flour or to determine the effects of various added ingredients.

2.85 **Electrophoresis** - A method for separating components of a complex mixture of substances by permitting them to migrate under the influence of an applied electric current. The rate of movement will depend on the charge per unit mass of each component in a mixture.

2.86 **Emulsifying Agent** - A substance that assists in the dispersion and suspension of an oil in water, for example, glycerol monostearate (GMS).

2.87 **Energy Input** - The energy that is absorbed by dough during mechanical development by mixing.

2.88 **Enzyme** - A protein that has the ability to speed up a biological reaction without itself undergoing any change, also known as biological catalyst.

2.89 **Ethyl Vanillin** - It is a white crystalline synthetic powder, which resembles pure vanilla in flavour and is used as a substitute for it.

2.90 **Extensograph** - An instrument for measuring the elastic properties of bread doughs. The instrument stretches a cylinder of dough (approximately 4 cm x 15 cm) held at the two ends, by a hook engaging the dough piece in the middle and measures the resistance of the dough to extension. In some countries the instrument is used to measure the quality of wheat flour for bread-making.

2.91 **Extraction Rate** - The percentage of product obtained from a given amount of raw material. For example, 50 percent extraction rate means 500 kg of milled hour from 1 000 kg of wheat.

2.92 **Farinograph** - An instrument that mixes flour and water into a dough and produces a record of the resistance that the dough offers to the mixing blades during the mixing cycle. It also indicates the water absorption power of the flour under test and also the mixing tolerance.

2.93 **Fat** - A chemical constituent of plant or animal tissues comprising esters of various fatty acids and glycerol. In cereal technology, it may refer to the natural flour fat or the fat (shortening) that is added in the bread formula.

2.94 **Ferment** - A mixture of water, yeast, yeast nutrients and occasionally a small amount of flour that is allowed to ferment for several hours prior to being used for the production of bread dough.
2.95 **Fermentable Carbohydrate** - Any carbohydrate (sugar) that may be used by yeast to produce carbon dioxide.

2.96 **Fermentation** - Decomposition for organic substances by microorganisms or enzymes, as of sugar by yeast to 'ethyl alcohol and carbon dioxide. In bread-making, fermentation is used to leaven (raise) the dough and to produce substances that are important for bread flavour.

2.97 **Fermentation Tolerance** - The ability of a dough to retain its desirable properties even after extended fermentation periods; an important measure of bread-making quality of flour.

2.98 **Floor Time** - Short fermentation time allowed in bread-making between the final mixing and dividing.

2.99 **Formula** - The ingredients that are mixed together to form a dough. It is also known as recipe.

2.100 **Foxy** - This is a term used when the baked bread comes out dark-red in colour signifying either high maltose in flour or less fermentation.

2.101 **Fructose** - A monosaccharide sugar found in sweet fruits and in honey; also called fruit sugar.

2.102 **Fungus** - A group of micro plants which are generally parasitic in habit. The class includes moulds and mildews which are the cause of spoilage in baked products.

2.103 **Gas Production** - The ability of a bread dough to produce carbon dioxide during fermentation. It is used in the assessment of bread making quality of flour.

2.104 **Gas Retention** - The ability of a bread dough to retain the gas (carbon dioxide) produced during fermentation. It is used in the assessment of bread-making quality of flour.

2.105 **Gassing Power** - Measure of the ability of a bread dough (including all ingredients) to produce gas (carbon dioxide) that is required for leavening (rising). This is also a measure of baking quality of flour.

2.106 **Gelatine** - An animal protein, which has the property of swelling in cold water and dissolving in hot water. It is gummy by nature. When hot solutions of gelatine are cooled, they form jellies.

2.107 **Gelatinization** - The breakdown of the granular structure of starch as by heating a starch slurry or a dough. The starch granules swell and subsequently burst. Gelatinization is important in relation to the development of crumb structure of bread.

2.108 **Genetic** - Pertaining to characters that are inherited.

2.109 **Germ** - The embryo in a cereal grain which grows into the new plant.

2.110 **Glassine** - This is a super calendered, smooth, dense, transparent or semi-transparent sheet of paper used as a protective wrapper. The paper is grease resistant and has a high resistance to the passage of air and other vapours.

2.111 **Gliadin** - The fraction of wheat flour proteins that can be dissolved in a 70 percent solution of ethyl alcohol. It is also classified as prolamine. It provides elasticity to dough.

2.112 **Globulin** - The fraction of wheat flour proteins that can be dissolved in dilute salt solution.

2.113 **Glucose** - A monosaccharide sugar, occurring naturally in some fruits. It is the sugar that is formed in the degradation of starch of flour by yeast enzymes.

2.114 **Gluten** - The rubber-like yellowish grey proteinaceous material that remains after the water solubles and starch are washed out of dough in a stream of water. It is a mixture of the two proteins gliadin and glutenin.
2.115 **Gluten Swelling Test** - A test for bread-making quality which determines the volume of gluten swollen in a dilute solution of lactic acid, also known as ‘Berliner test’ and is similar to the ‘Sedimentation test’.

2.116 **Glutenin** - The fraction of wheat flour a protein that is insoluble in water, salt solution, or 70 percent ethyl alcohol solution, but is soluble in dilute alkali. It provides strength to dough.

2.117 **Glyceryl Monostearate (GMS)** - It is used as a ‘fat extender’ and as a ‘bread softener’, as it has excellent emulsifying properties and shows an affinity for both fat and water.

2.118 **Golden Syrup** - Partly refined sugar syrup made from partial inversion of sugar (sucrose) using acid or enzyme or both. It has a nice golden brown colour and is used in baked goods for its colour forming and flavouring qualities.

2.119 **Granulation** - The coarseness or fineness of a powder such as flour or sugar. In baking technology, it pertains to the particle size and size distribution of the flour.

2.120 **Greaseproof Paper (GP)** - This is a protective wrapping paper used for wrapping food products and other articles.

2.121 **Hard Dough** - Doughs from which semi-sweet biscuits are made. The doughs are fairly firm to the touch.

2.122 **Hard Wheat** - Wheat which, as a result of variety of breeding in combination with environmental factors during growth, has a vitreous endosperm, generally considered an advantage for the production of bread-making flours, as the protein content is generally superior in quality and quantity.

2.123 **Hardened Oils** - Synonymous with hydrogenated oils.

2.124 **Hops** - A leavening agent prepared from hops leaves and popular with small bakers.

2.125 **Hydration** - The absorption or uptake of water by solid materials like flour. In bread-making, two aspects of hydration are important. The total amount absorbed (hydration capacity) by the flour and the rate at which it is absorbed (rate of hydration).

2.126 **Hydrolysis** - The degradation of large molecules, such as starch or proteins, into smaller fragments with the direct involvement of water in the process.

2.127 **Icing** - A coat of sugar that is used to dress baked products.

2.128 **Improving Agent** - Any substance that is added to flour or to dough to improve its performance during bread-making and to improve the quality of the bread that can be produced from the flour.

2.129 **Inactivation (Enzyme)** - The destruction of the natural catalytic activity of the enzyme by chemical or physical means.

2.130 ** Intermediate Proof** - The stage in the bread-making process where the dough is allowed to rest (relax) for short period up to 12 minutes between the dividing and moulding. Also referred to as ‘first proof’.

2.131 **Iodine Value** - An indication of the degree of unsaturation of oils or fats. It is measured as the percentage of iodine that is absorbed by the oil or fat on the basis of its own mass.

2.132 **Knock Back** - The punching or kneading of the dough during bulk fermentation to expel some of the carbon dioxide and improve subsequent fermentation.

2.133 **Kraft** - A term used for strong papers primarily used for wrapping, manufactured from long-fibred raw material and pulped by sulphite process.
2.134 **Lactic Acid** - The organic acid formed by Lactobacilli fermentation, for example, when milk sours. It is also produced during dough fermentation and is considered to be important in bread flavour.

2.135 **Leavening Agent** - Any substance such as yeast or sodium bicarbonate, used to raise or leaven dough by producing carbon dioxide.

2.136 **Lecithin** - Belongs to the class of substances known as lipoids, which are combinations of fat with nitrogen-containing substances and phosphorous. It is normally extracted from soyabean. It is also present in egg yolk. It acts as an emulsifier and is close to fat in chemical composition.

2.137 **Loaf Volume** - The volume of a loaf of bread. It is one of the main criteria of bread quality.

2.138 **Make-Up Stage** - A stage in the bread-making process from dividing to moulding of the dough pieces.

2.139 **Malted Cereal Flour** - Flour produced by grinding malted (sprouted or germinated and dried) wheat and barley and used as an adjunct to bread flour to improve its gassing power.

2.140 **Maltose** - A disaccharide sugar obtained by the action of amylases on starch. It comprises two glucose units and is the main fermentable sugar in dough.

2.141 **Maltose Value** - An index of Diastatic activity of flour. It is measured as the number of milligrams of maltose produced from 10 g of flour under standardized conditions.

2.142 **Margarine** - A product which resembles butter in consistency, colour and flavour, except that it contains no butter fat and is made from hydrogenated vegetable oils.

2.143 **Maturing Agent** - Any substance, usually a chemical (for example potassium bromate), that is added to flour or dough to improve the bread-making quality of the flour.

2.144 **Mechanical Development Baking Method** - A baking method which uses vigorous mixing instead of a long fermentation period for the development of a dough with the optimum handling characteristics.

2.145 **Mixing Time** - Time required to mix a dough to a proper consistency for bread-making.

2.146 **Mixing Tolerance** - The ability of a dough to withstand extended mixing without showing major changes in physical properties.

2.147 **Mixograph** - An instrument used for evaluating the dough mixing properties of wheat flour as a part of bread-making quality evaluation. It measures and records the resistance that the dough offers to the pins of the mixer while the dough is mixed.

2.148 **Monocalcium Phosphate** - A chemical substance added to dough as a yeast nutrient. The main nutrients provided by this substance are calcium and phosphorous.

2.149 **Moulding Stage** - A stage in the bread-making process where the dough piece is sheeted and rolled before being placed into the baking pan.

2.150 **Oil of Lemon** - An essential oil obtained from the fresh peel of lemon.

2.151 **Oil of Orange** - An essential oil obtained from the peel of orange.

2.152 **Oven Spring** - Increase in the volume of the dough during baking. This is equal to the volume of the baked loaf minus volume of the dough when put in the oven.

2.153 **Oxidation** - One of the ways by which the handling properties of dough can be improved so as to improve the quality of bread. It is brought about by substances referred to as oxidants, improvers or maturing agents.
2.154 **Panning** - The stage in the bread-making process when the moulded dough piece is placed in the baking pan or tins.

2.155 **Patent Flour** - The portion of a straight-run flour, better in colour and with a lower ash content than the remainder of the flour. The first processes used to make such flour were patented and hence the name.

2.156 **Pekar Test** - A test of flour quality made by comparing the colour of flour against a standard sample. Each sample is placed side by side on a flat rectangular piece of wood, pressed down to a smooth surface and compared with the standard.

2.157 **Physical Dough Test** - Wheat quality tests that are based on a measurement of some physical properties (for example elasticity, viscosity, resistance to extension) of a dough produced by mixing flour and water and other ingredients as required.

2.158 **Plane Sifter** - A sifting machine consisting of a number of super-imposed sieves gyrating together in a horizontal plane, having a rotary motion.

2.159 **Pliable** - Easily bent or moulded, flexible. It pertains to dough that can be readily moulded into loaf-size piece.

2.160 **Pneumatic Conveying** - The transporting of material in enclosed tubes using air under negative or positive pressure as the conveying medium.

2.161 **Potassium Bromate** - A chemical substance (salt) comprising of potassium, bromine and oxygen (KBrO₃) that is used in the baking industry as a dough maturing agent (improver). It is a slow improver.

2.162 **Potassium Iodate** - A chemical substance comprising of potassium, iodine and oxygen (KI0₃) that is used in the baking industry as a dough maturing agent (improver). It is comparatively a fast improver.

2.163 **Proofer** – a chamber used in baking that encourages fermentation of dough by yeast through warm temperatures and controlled humidity.

2.164 **Proofing** - The stage in the bread-making process when the dough is allowed to rise under the action of carbon dioxide produced by fermentation.

2.165 **Protease** - An enzyme (biological catalyst) that brings about a breakdown of proteins. In the baking industry, this enzyme from cereal or fungal sources is used to improve the handling properties of dough.

2.166 **Protein**. -- One of the chief constituents of plant and animal tissues containing carbon, hydrogen, oxygen, nitrogen and frequently sulphur. In wheat, protein is important for baking and nutritional qualities.

2.167 **Rancidity** - The spoilage of oils and fats resulting in a deterioration of flavour. Rancidity may be of two types. One type is caused by combination with oxygen and is known as oxidative rancidity. The other is caused by the breakdown of the fat triglyceride units and is called hydrolytic rancidity.

2.168 **Reducing Agent** - A chemical substance that is capable of adding hydrogen or removing oxygen from another substance, hence reducing it. Also, in some instances it is capable of splitting chemical bonds. In baking, it usually refers to agents, for example cysteine that can break (cleave) the disulfide bonds in flour proteins. In chemical or mechanical development of doughs, it helps in reducing the mixing time.

2.169 **Ripening** - The development of proper physical properties of doughs that are required for bread-making during fermentation.
2.170 **Rope** - A bacterial infection occurring in bread during periods of hot weather. First sign of a rope is a sour 'Fruity' odour followed by stickiness in the crumb and darkening of crumb colour usually in patches. Rope can become evident within 24 hours after baking. This can be controlled by high standards of cleanliness and by use of suitable antibacterial agents.

2.171 **Ropy Bread** - Bread in which certain spore-forming bacteria (mostly *Bacillus subtilis* and related species) have developed during storage, with the effect that the bread produces a characteristic smell and shows in its interior characteristic signs of decay; these may include the conversion of the crumb into a moist, sticky substance, leaving slimy threads when extended.

2.172 **Rotary Moulding Machine** - A biscuit forming machine in which an engraved roller is used to form the biscuit.

2.173 **Rounding** - A stage in the bread-making process when the sealed or divided dough pieces are shaped or rounded to provide a skin around the dough to hold the gas produced by fermentation and to eliminate some of the stickiness.

2.174 **Rusk** - is a hard, dry biscuit or a twice-baked bread

2.175 **Rye Bread** - Bread made of coarse or not too fine meal milled from rye, with no intentional addition of any other cereal.

2.176 **Scones** - small sweet or unsweetened bread of various shapes but usually with a round top and flat bottom made from basic ingredients which include wheat flour, shortening, sugar, edible common salt, baker’s yeast, potable water with/without any other optional ingredients.

2.177 **Sedimentation Test (Zeleny)** - A wheat protein quality test (for bread-making) in which the flour is suspended and allowed to swell in a solution of lactic acid. The volume of the sediment (in millilitres) consisting of swollen gluten and starch, after standing for a predetermined period is the sedimentation value.

2.178 **Self-rising flour** - flour that has a raising agent already added

2.179 **Shortening** - A fat used to impart crispness and flakiness to biscuits, and softness to bread crumbs.

2.180 **Sifting** - The process of passing pulverised substance through fine perforated screens or meshes in order either to remove large impurities or to properly blend a mixture of powders or to grade a substance according to particle size.

2.181 **Slack Dough** - A dough that is too loose or too weak for proper handling in the bread-making process. It is also termed as ‘Bucky’.

2.182 **Slip Point** - The temperature at which a solid fat melts into a liquid.

2.183 **Sodium Bicarbonate (NaHCO₃)** - A white powder much used as a chemical leavening agent. It releases only part of its carbon dioxide gas on heating. Reaction with an acid substance releases all the available carbon dioxide. It is an essential constituent of baking powders.

2.184 **Sodium Diacetate** - A chemical added to dough to prevent or slow down the development of mould in bread.

2.185 **Sodium Propionate** - A chemical added to dough to prevent or slow down the development of mould in bread.
2.186 **Soft Wheat** - Wheat which as a result of variety or breeding in combination with environmental factors during growth, has a white opaque endosperm; generally considered more suitable for the production of cake and biscuit flours.

2.189 **Solid Fat Index** - A property of a mixed fat that relates to the proportion of solid fat in the mixture.

2.190 **Sponge and Dough Process** - A bread-making process that uses two stages to prepare the dough. In the first stage the sponge is made of 50 to 75 percent of flour, 35 to 50 percent of water, part of sugar and yeast nutrients and is allowed to ferment for 3 to 4 hours. In the second stage, the fermented sponge is placed in the mixer and the remaining ingredients added and the final dough is mixed. This is called the dough stage.

2.191 **Staling** - The complex changes that occur in bread during storage after baking that lead to loss of freshness or hardening to the point where the bread loses its edible quality.

2.192 **Starch** - A major constituent of wheat flour containing carbon, hydrogen and oxygen.

2.193 **Starch Damage** - Disruption of the natural structure of the starch granules by biochemical (amyloses), chemical (alkali) or physical (grinding or milling) measures.

2.194 **Steoryl-2-Lactylate** - A fat-like substance that is added to dough to improve its handling properties and thereby improve the quality of the bread. These are either sodium (SSL) or calcium (CSL) lactylates.

2.195 **Straight-Dough Process** - A bread-making process in which the dough is made by a single mixing of all the ingredients.

2.196 **Straight Run Flour** - A grade of flour produced by combining together all the basic flour streams made in a mill.

2.197 **Strength of Flour** - The capacity of a flour to produce well leavened loaves of large bold volume, which is a desirable characteristic of bread-making flour.

2.198 **Strong Flour** - A flour that takes up a relatively large quantity of water and produces a dough that requires a relatively long mixing for proper development. Usually a flour of high quality for bread-making, but unsuitable for biscuit and cake manufacture.

2.199 **Supplement** - An additive added to flour or dough to improve the processing, edible or nutritional qualities.

2.200 **Swift Test** - Also known as ‘Aeration Test’ and is an indication of the suitability of the fat.

2.201 **Viscosity Test** - A test based on the determination of the viscosity (thickness, consistency, resistance to flour) of a mixture or a solution of a substance and water. In flour testing, sometimes used as a measure of baking quality.

2.202 **Votator** - A heat exchanger in which it is possible to effect simultaneously all the physical treatment necessary to produce high grade smooth shortenings and margarine in a continuous operation.

2.203 **Weak Flour** - A flour that takes up a relatively small quantity of water and produces a dough that requires a relatively short mixing for development. Usually a flour of low quality for bread-making, but preferable for biscuits and cake making.

2.204 **Wheat Bread** - Bread made of flour or meal milled from wheat, with no intentional addition of another cereal.

2.205 **Wheatmeal Bread** - Bread made of wheat meal, that is, meal containing part or the entire kernel, with or without the germ.
2.206 Wholemeal Bread - Bread made of whole meal, that is, meal containing all parts of the kernel, including the germ.

2.207 Yeast - Any of the family of fungi (*Saccharomyces cerevisiae*) that can grow in presence of starch or sugar to produce carbon dioxide (and alcohol); used as a leavening agent in bread. It is used in baking industry in compressed form (fresh) or dry powdered form (granules).

2.208 Yeast Nutrient - Inorganic substances required for proper yeast activity (for example, nitrogen and phosphorous).

2.209 Yellow Pigment - A natural yellow pigment in flour which is mainly xanthophyll. It detracts from the desirable white colour and is usually bleached by chemicals such as benzoyl peroxide.