DOYON & NU-VU

BAKING EQUIPMENT EXPERTS

www.doyon.qc.ca • www.nu-vu.com

BAKING TERMS & TECHNIQUES

Doyon/NU-VU Terminology

Jet Air By Doyon The air moves in one direction for 2.5 minutes, stops for 25 seconds a then moves the other way for 2.5 minutes resulting in a bidirectional and gentle velocity air flow for exceptional baking results. This system will help you bake faster and more evenly without having to turn pans during baking time. The Jet Air System will save energy and labor costs.

Jet Air Plus By Doyon The air moves in one direction for 2.5 minutes, stops for 25 seconds a then moves the other way for 2.5 minutes resulting in a bidirectional and gentle velocity air flow for exceptional baking results. This system will help you bake faster and more evenly without having to turn pans during baking time. The Jet Air System will save energy and labor costs. PLUS: standard programmable control, easy removable stainless steel side rack, drain, stackable, and these ovens are built to fit a 30” wide door. They are also designed for multipurpose baking/cooking.

V-Air By NU-VU NU-VU Versatile Air Ovens employ a patented system that distributes controlled, heated air evenly to all areas of the oven – side to side, top to bottom, and front to back. Since each product on every shelf is evenly baked, even with a full load, there is no waste of product or energy and all pans of similar products can be removed and inserted at the same time.

Internal Steam By NU-VU This is a means of adding steam to a baking process without the use of an external boiler. It utilizes and adjustable spray which becomes a mist when it is heated by either elements and/or hot metal surfaces in an electric unit or gas unit.

Automist By NU-VU This is an automatic humidity system used in warmers and proofer. It utilizes timed bursts of water that are converted to a mist and evenly distributed throughout the unit by a moving air flow. The amount introduced is determined by adjusting the moisture control.

Warmer In Proofer For NU-VU Products The proofer is not just a proofer, it can also be used as a warmer/holding cabinet to hold product at a desire temperature with or without moisture. The warmer option includes higher wattage elements.

Filtration All Doyon & NU-VU units which utilize a water line should employee a filter.

Spiral Mixer Engineered to be the finest and most reliable mixer for dough and other yeast based products. This lies in the synchronized rotation of the hook with the bowl, the bowl height center mid-post, as well as the design of the hook. This mixer allows for the development of better dough oxygenation and generalized development. These mixers will significantly reduce the amount of mixing time, and allows the dough stay at a cooler temperature. These are ideal to mix anything from stiff bagel dough to delicate french dough.

Planetary Mixer Also known as Vertical Mixers, are known and named after the orbital motion of the dough agitator. The mixers agitator travels in a circular motion along the sides of the mixing bowl wall while the bowl is suspended in place. This allows for the better development of cookie & cake dough's, meringues, macaroons, etc. These mixers are designed to be multipurpose. Common attachments are the flat beater, dough hook, and wire whip. You will also see these mixers with a hub allowing for the use of a meat grinder, vegetable slicer, or shredders.

Hydration Ratio The percent hydration of dough**;** that is the weight of the liquids relative to the weight of the flour, since the hydration level helps the baker predict the texture of the crumb. NOTE: Liquid ingredients also include water, milk, alcohol, and juice. To calculate the hydration level of a conventional recipe, first weigh the flour and water or other liquid. Divide the weight of the water by the weight of the flour and then multiply the result by 100. For example, a recipe containing 1 1/4 cups of water (10 ounces) and 3 cups of all-purpose flour (15 ounces) will have a 67 percent (10/15 x 100 = 67) hydration level, indicating a moderately airy crumb

A

Absorption A characteristic of flour to take up and retain (hold) water or liquids. It is determined by measuring the amount of liquid needed to make dough of the desired consistency. It is expressed in a percentage (lbs. /liters of water needed per pound/kilo of flour).

Acid pH of less than 7. Acid ingredients react with bases to form salts and water. They have a sour taste. A chemical compound that yields hydrogen ions when in solution.

Alkaline pH greater than 7. Alkalis such as baking soda (bicarbonate of soda) neutralizes acids and reacts with acidic ingredients as a leavener. Alkalis have an excess of hydroxyl ions when in solution.

Altitude At altitude (above 3,000 ft.), adjustments may be needed in baking, cooking time, temperature and recipes. For example:

- Water boils at 212˚F below 2,000 ft. and more quickly from 3,000 to 10,000 ft. (208˚-194˚F). Food requiring boiling (pasta, eggs, pudding/pie filling) will take longer to cook.
- Leavening gases in breads and cakes expand more at altitudes. Yeast breads will rise faster—use slightly cooler liquids to slow fermentation; punch down twice.
- Flour will be dryer and more absorbent at altitudes—use slightly less.
- Cakes may need slightly less baking powder (⅛ to ¼ tsp), less sugar (1 to 3 tbsp per cup) and a little more liquid (1 to 4 tbsp. per cup).
- Egg whites: beat only to soft peaks, not stiff.

Artisan (Baker) Skilled craftsman or trade; baker who produces bread or bakery goods using production methods that are part hand-made. Often refers to European crusty breads or low-ratio cakes and desserts.

B

Bake To cook by dry heat in an oven. When applied to meats and poultry, this cooking method is called roasting.

Baker's Percent In baking formulas primarily based on flour, each ingredent's weight is measured as a percentage of the total flour weight. Should equal to that of a 100.

Baking Powder A leavening agent that is a base (such as baking soda) combined with an acid salt (such as sodium aluminum sulfate NaAl $(SO_4)^2$) and inert ingredients (corn starch, calcium carbonate) that buffer the active ingredients. Baking powder reacts in the presence of moisture and heat to produce carbon dioxide (CO^2). Baking powders are:

- Single action: releases carbon dioxide (CO^2) immediately when moistened
- Slow action: requires heat for release of CO^2
- Double acting: Releases some CO^2 when mixed and more when heated in oven

Baking Soda sodium bicarbonate (2 $NAHCO^3$) Reacts in baking, but is alkaline and needs the acidity from other ingredients (such as honey, molasses, cocoa, sour or butter milk) to react and release CO^2.

Baking Stone Quarry tile (unglazed clay) or rectangular stoneware placed in the oven—allow 2-3 inches space between stone and oven walls on all sides for air flow; preheat stones, bake directly on the stone.

Batard A long loaf (thicker and stubbier than a baguette).

Batch One recipe of a dough or batter, such as bread or cookies.

Batter Thin mixture of flour and water that can be poured or spooned into pan or on a griddle.

Beat To agitate one or more ingredients rapidly using a brisk up-and-over motion to add air into a mixture using a spoon, whisk, rotary beaters or electric mixer.

Bench Proofing Period of time the dough rests after dividing and rounding, allowing it to recover and relax for molding. Average length of bench proof=10 to 20 minutes. Dough should be protected from drafts to prevent crusting.

Biga Italian pre-ferment, *see Pre-ferment*.

Bind To thicken or smooth out the consistency of a liquid.

Blend To combine two or more ingredients thoroughly until they seem to be one.

Boil To cook in liquid that is heated until bubbles rise to the surface and break. Bubbles form throughout the mixture. Temperature: 212˚ F or 100˚C (Also see Altitude).

Boule (Miche) round loaf; taut skin stretched perfectly over a dome of bread dough, sealed on the bottom.

Bread Baked foods produced from dough made of flour, water, salt and other optional ingredients, and leavened by yeast or other leavening agents.

Bread Flour Flour milled from hard wheat, in excess of 11% protein. Most often used for yeast leavened products.

Bread Scoring

1. Evaluation of finished baked product to determine quality.
2. Slashing the surface (top) of loaves to allow for expansion as the loaf is baked.

Break The rough portion of the bread crust formed during oven spring between the pans edge and the curve of the loaf's top. Break may occur on both sides or one side only.

Brown To give a cooked surface to a food (such as meat or fl our) by applying high heat. Also occurs during baking and roasting.

C

Capping When yeast loaves are under proofed and the interior pushes up the top crust leaving a rough, sharp edge along the side of the loaf having the appearance of a “cap.”

Caramelization To heat sugar until brown and a characteristic flavor develops; occurs at 300˚ F.

Cereal Grain Cereal refers to grain and foods derived from them; the word cereal comes from Ceres, a pre-Roman goddess of agriculture. *Also see Grain*.

Chemical Leavening Used in baking in batters or dough to produce carbon dioxide. Common chemical leaveners are baking soda, baking powders, and cream of tartar.

Chill Make mixture or cooking bowl cold by placing in refrigerator or in ice.

Chop To cut into small pieces with a bench cutter, knife or scissors.

Clarify To make a substance clear or pure.

Coat To thoroughly cover a food with a liquid or dry mixture.

Combine To mix or blend two or more ingredients together.

Coarse Refers to the crumb structure of some baked goods.

Cool To let food stand until it no longer feels warm to the touch. Baked goods are cooled on wire racks to avoid soggy bottom crusts; cool baked goods before wrapping and storing.

Core remove the seeded, inner portion of a fruit.

Cream To work (with spoon or mixer) one or more foods until soft and creamy.

Cream of Tartar An acidic salt—potassium hydrogen tartrate (also referred to as tartaric acid); stabilizes beaten egg whites and leavens some baked goods.

Crumb The interior of baked goods—not the crust; interior texture formed by air cell pockets trapped inside a webbing of starch and protein gelatinized by baking.

Crush To pulverize, as with herbs and spices used in baking.

Cut or Cut In To combine fat into dry ingredients with a pastry blender, two knives, or fingers with the least possible amount of blending.

D

Docking Slashing or making incisions in the surface of bread or rolls for proper expansion while baking. Done just before baking.

Dot To place small dabs or pieces of butter or batter over the surface of a food, such as with a pie, just before the top crust is added and baking begins.

Double in Bulk Refers to expansion of gluten cells in yeast bread that has risen and is ready to be punched down. Recipe will give a range of time. Varies with dough and environment's temperature. May be difficult to tell visually: Finger test used by bakers: gently press two fingers into dough, if marks remain unchanged, dough is ready to punch

Double in Size Refers to the final rising (proofing) before bread is baked. This is a visual measurement, subject to guessing. Some bakers make a template for a guide—when bread is a certain height above the pan edge. Look for recipe or formula guide:

"3/4 proof = half again as large" or "full proof = almost double in size"

May touch side of loaf very gently—if slight print remains, bake.

Dough A mixture of flour, liquids and may have other ingredients that is thick enough to be handled, kneaded or shaped.

Dough Scraper, Dough Knife, or "Bencher" A flat, heavy metal blade (about 3 X 5-inches) with straight sides, sharp corners and a handle on top edge for moving, kneading, clean-cutting dough, incising, or even cleaning work surfaces.

Drain To remove liquid from a food product.

Drizzle To pour a light amount, from a spoon, over food.

Drop To deposit even portions of dough on a baking sheet using spoon or batter dispenser.

Dust To lightly sprinkle the surface of a food or dough with sugar, flour or crumbs. Also to sprinkle the surface used for rolling out or shaping dough.

E

Egg Wash or Glaze Whole egg or egg white mixed with small amount of milk or water and brushed over dough prior to baking; creates glossy baked surface.

Elasticity Capable of recovering shape after stretching; developed gluten in dough is elastic

Enrich To improve the nutritional value of an ingredient or food. Baked goods may be enriched by using milk, enriched flour, whole grain flours, eggs, soy protein or flour

F

Fermentation The stage or time given yeast batter, sponge or dough before dough is divided, shaped, proofed and baked. The process whereby yeast enzymes break down sugars to produce alcohol and carbon dioxide, producing air bubbles that expand the dough; also called " rising time" in home baking. One or two fermentations (rising times) are common before the make-up process begins.

Flaky Distinct layers of pastry or biscuit formed by using low protein fl our, fat and not too much mixing.

Flour The finely ground and sifted meal of any of various edible grains. To lightly dust a surface or dough with flour.

Fold To gently combine two or more ingredients or a delicate mixture into a heavier, thicker one by cutting vertically through the mixture and turning it over by sliding the mixing tool across the bottom of the bowl or pan with each turn. To combine without stirring or deflating a mixture.

Formula The recipe or guide a baker uses for a product; read all formulas carefully, beginning at the top and reading each ingredient and recipe, step-by-step.

Fry To cook in heated fat; for doughnuts, fry bread, or funnel cakes, heat oil (2-3" deep) to 375˚ F, turn products only once; drain well. To reduce fat absorption, substitute 5% of the flour weight with defatted soy flour (1oz. soy flour + 15 oz. wheat flour = 1 lb. flour OR 1 tablespoon per cup)

G

Garnish To decorate foods by adding other attractive and complementary foodstuffs to the food or serving dish.

Gelatinization (Starch) The setting of the structure of a dough or batter during baking. Starches gelatinize at a temperature of 180˚ F but do not caramelize until baking surface temperature reaches 300˚F.

Gluten The wheat flour proteins glutenin and gliadin, when mixed with water and handled (stirred, mixed, kneaded) connect into long elastic structures. This structure traps air bubbles, expands and later, when baked, becomes rigid to hold the structure of the dough.

Grain

1. As in cereal grain; edible seeds or grain produced by plants in the grass family. The most popular cereal grains are barley, corn, millet, oats, quinoa, rice, rye, sorghum, triticale, wheat and wild rice.
2. The appearance of the crumb of baked products as determined by the number and size of air pockets, the cell structure, and the thickness of cell walls.

Grate To reduce a food into small bits by rubbing it against the sharp teeth of a grating utensil.

Grease Rub oil, shortening, butter or fat over surface of cooking utensil or on a food. May also use a lecithin based, non-fat cooking spray, unless bake ware does not recommend it.

H

Holding To keep products in the best environment for quality serving or long-term storage.

I

Intermediate Proof The short time (10 to 30 minutes) between punching, dividing, rounding and molding the dough--also called “resting or bench time.” Important for dough to be kept away from drafts (80 to 90°F at 75-80% humidity)--dough “relaxes” and becomes more manageable.

K

Knead To mix dough using a pressing and folding motion, turning and folding the dough onto itself until gluten strands form and the dough is smooth and elastic.

L

Lean Dough A dough prepared with little or no fat, sugar, or milk.

Leavening Ingredients used in baked goods to lighten the texture, develop flavor, produce distinctive cell structure and increase volume. Leavening agents include heat and moisture (steam), beaten eggs or egg whites, baking soda, baking powder, cream of tartar, and yeast. *Historical terms for leavening*: Latin = levre = to raise; also called “lifter.”

Level Straight edged knife or spatula used to scrape across a dry measuring cup in which flour or other dry ingredient is heaped.

Liquid Measure Cup or beaker with gradations for metric and English (fractions and whole cup, pint, quart) measurements of liquids (water, milk, vegetable oils, honey, molasses, syrups, juices).

M

Mash To break up into finer, smoother pieces by pressing with back of a spoon, a masher or ricer.

Make-Up After fermentation(s), shaping the dough into loaves or other shapes. Includes scaling (dividing), rounding, and intermediate proof, molding and panning the dough pieces.

Mince To cut or chop into very small pieces.

Mise en Place (pronounced mee zon plahs)—have all ingredients and equipment in place before preparing a recipe.

Mix To combine two ingredients by stirring or in way that makes two or more foods appear as one.

Mixing with yeast dough, refers to four stages—pick-up period, preliminary development, elasticity development, and final gluten development.

Molding Follows intermediate proof—dough must be relaxed—final shaping step where dough is flattened (sheeted) or shaped for loaves, braids, rolls, twists.

N

No Time Straight Dough: Same method, but oxidizing and reducing agents are added so very little fermentation is needed. In home baking, higher water temperatures (up to 130°F) are used with fast rising yeast to make “no-time” yeast dough (10 minute rising time).

O

Old Dough Yeast dough that is overproofed; dough may have tripled in volume and fallen.

Oven-Spring When yeast breads first begin to bake, they will have a “growth spurt” until the yeast dies (140°F) and the starch gelatinizes (180°F) to hold the final size and shape.

Overproofing Allowing dough to proof beyond a full doubling of size; if dough actually proofs and falls again, the product will not recover. Product will be very open grained, have a crumbly texture, undesirable flavor, pale crust, strong aroma and poor keeping quality.

P

Packed refers to measuring brown sugars. Spoon brown sugar into dry measuring cup and press down until firmly packed, overfilling slightly, then leveling. When dumped out, should hold its shape (as when making sand castles).

Pan utensil used to hold dough or batter—may be rectangular, flat or round; best surface for baking is heavy shiny or darkened aluminum for best crust color; glass baking pans require adjusted oven temperatures—reduce about 25°F.

Panning Placing dough in or on prepared pans. Pans may be lined with parchment, oiled, sprayed with pan-release, or sprinkled with meal. Make sure the pan is the correct size for the amount of batter or dough.

> NOTE: Some baking pans should not be sprayed with lecithin cooking sprays—check manufacturer's care guidelines.

Parboil To boil until partially cooked.

Parchment Paper Sheets of grease and moisture resistant paper used in baking to line pans; replaces greasing or spraying pans. Products are shaped or distributed directly on the paper and are easily removed after baking. Great for making disposable pastry bags too.

Pare To remove the outer covering or skin of fruit or vegetables with a small knife or peeler.

Peel rimless, lightweight board, may have a long handle; used to transfer proofed bread to hot baking stone in oven

Poolish Polish origins, Viennese bakers promoted this pre-ferment starter in the nineteenth century. See preferment.

Porous May refer to the honey-comb-like structure of white pan bread

Pre-Ferment Partial (yeast) dough made of flour, water, yeast and sometimes salt given a quick mixing and allowed to ferment prior to mixing the full dough. Five traditional pre-ferments are:

- Poolish - equal weights flour and water
- Scrap Dough - old dough--pate fermentee
- Biga - flour+50-60% water+1/2% instant yeast
- Sponge - flour, yeast, water
- Mixed Starter - flour + water + small piece old dough; mimics sourdough

Preheat Very important in baking. Heat the oven, griddle, skillet or broiler to a desired temperature before inserting the food.

> TIP: Always check the oven to be sure nothing is in it—and place the oven racks in the correct position before preheating.

Proof The final rising (fermentation) of the shaped yeast dough prior to baking. Proof cabinets or "boxes" help maintain the best temperature and humidity – Ranges from 85 (at home) to 110-115°F (commercial proof cabinents) at 80 to 85% relative humidity. (Decrease **each** amount by 10 for frozen dough.)

Punch (Dough) The dough needs to rise until doubled in size, but never let yeast dough ferment (rise) until it falls. Follow recipe/formula for how long to ferment or allow the dough to rise—30 minutes to 2 hours or until "doubled in bulk or size." Check if ready by gently pressing two fingers about an inch into the dough—the dents should not spring back, but remain if the dough is ready to punch. Punch dough by pushing a clean fist firmly into the top of the yeast dough to push the air out; re-form dough into a round, smooth ball (skin smoothly stretched around it), cover and go to a second fermentation or the make-up process.

Puree To mash, process or sieve cooked fruit or vegetables to form a thick smooth liquid. Purees may be used to substitute for ¼ to ⅓ of the oil or fat in some baked products.

R

Reconstitute To restore a former condition by adding water. Dried, minced vegetables, such as onions or leeks, should be reconstituted before adding to baked goods.

Rest Time After kneading, punching or rounding, dough benefits from a brief (10 to 30 minutes) intermission in handling. The dough will be more easily rolled or shaped. Keep dough covered with bowl or plastic food wrap sprayed with pan spray while it rests so "skin" doesn't form. Yeast dough: called an intermediate proof.

Roll

1. Small dough piece (2.0-4.5 oz), smooth and rounded with dough skin side up, pinched seam at bottom
2. To use a rolling pin to roll out a dough piece from center out forming a flat dough piece of even thickness for cookie cutting, pie crust or other products.

Rounding Shaping dough so that a smooth surface encases the dough, sealing it as it rests.

S

Sauté To cook in a small amount of fat, as you would fresh garlic, onion, leeks, etc. for enhanced flavor prior to adding to a savory dough.

Scald To bring liquids to a temperature just below boiling so that tiny bubbles form at the edge of the pan or cup to stop enzymatic activity that retards gluten development.

NOTE: Yeast breads: Fluid milk should still be scalded, the "skin" skimmed off and then cooled OR use a "high heat" dry milk for baking yeast breads.

Scale Ingredients To weigh ingredients rather than measure in cups or spoons for better accuracy and consistent results.

Scaling Dividing batter or dough by weight for the most accurate portioning into pans or pieces. Equal division of dough or batter between pans is very important for even baking and browning. Note: Scaling should be done quickly to avoid loss of leavening or over-aging of dough.

Score To make small shallow cuts on the surface of a food.

Season To add herbs, spices, citrus zest, extracts or other ingredients to food for fl avoring.

Separate To remove the yolk from the white of the egg.

Shaping or Molding Follow recipe directions for how to divide and shape dough (sheet dough, sticks, loaves, twist, braid, pretzel, smooth ball etc)

Shred To rub large food across medium to large grater holes or slits to make small pieces.

Sift To move flour or sugar through a sieve (sifter) to incorporate air and insure accurate measurement. *Food History Note*: "Weevily flour" was not thrown out--sifting was done to remove bugs as well as lumps from flour. *Sifting notes:*

1) Today most flour is pre-sifted and needs only to be stirred until light, scooped into the measuring cup until heaping and leveled. Sift only if recipe directs you to do so prior to measuring—this alters the volume of the flour or powdered sugar measured.
2) Blend dry ingredients (flour, leavening, salt) with a wire whisk, not a sifter, for best results.

Simmer To cook in liquid that is barely at the boiling point and small bubbles rise below the surface.

Skim To remove a substance from the surface of a liquid. Ex: "Skim" the milk after scalding.
Slack dough Dough that is too fluid due to under development or too much water/too little flour.

Slashing Also called “docking;” making incisions in the surface of bred or rolls for proper expansion while baking. Done just before baking.

Sour Dough Bread with a slightly sour tangy flavor created by using sour dough starter (levain)—a batter or dough that has colonies of sour dough yeasts and bacteria (microfl ora).

Sponge and Dough Method Two stage yeast bread mixing process.

*(1) (Sponge/Pre-ferment)**:*** Mix 60 to 100% of flour and all of liquid and yeast for 4-6 minutes; let ferment at 75°F for 3-6 hours. (Sponge temperature=72-78˚ F—after fermentation, rises 10˚ F.)

*(2)**:*** Add remaining ingredients and mix to develop gluten (8 to 12 minutes). Ferment again 0 to 40 minutes at 80-85˚ F. Punch down the dough and proceed to shape/make up.

Starch 70 to 75% of flour is starch. During milling a small portion are damaged. Quality wheat and short extraction flour contain fi ne quality starch granules and protein important in mixing, dough conditioning water absorption, fermentation and quality crumb formation.

Steam To cook in steam, with or without pressure, as with steam bread or Chinese dumplings.

Stir To mix with a circular motion.

Straight Dough All (yeast dough) ingredients are mixed together in the order the formula or recipe directs until a smooth, stretchy dough is formed. Dough should be about 80-82°F when mixed. It is then fermented for 1 to 2 hours at 80-85°F, punched and so on.

Strain To separate solid from liquid (as in clarifying butter).

T

Thicken Make a liquid dense by adding an ingredient like cornstarch, egg yolk, tapioca, flour, rice or potato starch or flour; also to bind.

Toss To mix ingredients lightly by lifting and dropping with a spoon, or spoon and fork.

U

Underproofed Dough Young dough; dough not allowed to raise enough before baking

V

Vent To leave an opening through which steam can escape in the covering of a food.

W

Water Very hard water and soft water create problems for baked goods. *Tap water of medium hardness and without noticeable chlorination or other off odors is suitable.* Bottled water may be used in very hard water regions. (Soft water=15-50 ppm; Medium hard=50-100 ppm; Hard=100-200 ppm; Very hard=over 200 ppm)

Whip To beat rapidly to add air.

Whisk To beat ingredients together, using a wire whip or whisk, until well blended.

Y

Yeast A living, simple plant organism in the fungus family. It exists naturally in air and soil and requires air, moisture and sugar or starch to grow and reproduce. For baking, certain strains are carefully selected, reproduced, processed and sold in dry (8% moisture) granules (active dry, fast rising or instant) or fresh form (cake or compressed). Yeast will grow slowly under refrigeration, does not die if frozen in a dough, but will die in temperatures above 140°F. Bakers' yeast is a special strain (different from Brewers' yeast), a leavening agent—it will convert sugars and starches into alcohol and carbon dioxide, thus making a product light.

¼ oz. (7g) active dry yeast = 2 ¼ teaspoons = 2/3 oz. cake yeast Active dry yeast should be proofed, or dissolved in water prior to adding to mixtureFast acting yeast (professionals use instant) should be mixed directly with flour 6.4 oz active dry yeast (A.D.Y.) = 5.3 oz instant (I.D.Y.) = 1 lb. compressed yeast Yeast will be used at a range of 1.5% to 4% of the flour weight (Baker's Percent)