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Natural Selection 天擇之糧

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Three basic raw ingredients. The magic and mystery of microorganisms. Time-honoured techniques. It's no wonder that the world is going wild for authentic, artisanal bread.

三種基本原料、奇妙而神秘的微生物、歷史悠久的方法……無怪乎大家都對傳統手工麵包趨之若鶩。

By Rachel Duffell

Natural selection

天擇之糧

How long does it take to make a loaf of sourdough bread? "Fourteen years and 36 hours," says Gregoire Michaud, former executive pastry chef at Four Seasons Hong Kong who now runs his own bakery, Bakehouse, in Hong Kong.

Michaud is referring to the 14-year-old sourdough starter that forms the first stage of his bread making, followed then by 36 hours of extended fermentation, mixing and baking. While Michaud admits that sourdough starters don't necessarily get better with age or impart additional flavours or other elements after such a long period of time – he says a starter of between six months and one year old is adequate, as by then it's well established and stable – he does believe that the age of a sourdough starter is reflective of a baker's dedication. "It's really about the tradition of doing this. It's more like a commitment towards the product," he says.

Today it's widely accepted that the best bread is that made from the naturally occurring lactobacilli and yeast found in flour. Enzymes in the flour are activated with the addition of water, breaking down the starches into simple sugars that fuel the yeast and bacteria. The former produce carbon dioxide, which give the bread volume, and ethanol, while the latter produce acetic and lactic acids, which put the sour in sourdough. The addition of salt is not only for taste; it will slow down fermentation, strengthen the dough and helps the loaf retain carbon dioxide and therefore volume.

製作一條酸種麵包需要多少時間?「14年又36個小時。」現時在香港開設自家麵包店Bakehouse的前香港四季酒店糕餅主廚Gregoire Michaud如是說。

Michaud指的是他「養」了14年的酸種。養麵種是製作麵包的第一步，接下來還要經過36小時的發酵、搓揉和烘焙。Michaud坦承，酸種並不見得愈老愈好，亦不需要如此長的時間來提升味道或增加其他元素。他指半年至一年的時間已經足夠，因為此時酸種已趨於穩定。不過，他認為酸種的年期能夠反映麵包師的熱忱，「這是製作麵包的傳統，就像是對心血結晶的一份承諾。」

今天，大家普遍同意利用麵粉中的天然乳酸桿菌和酵母菌發酵製成的麵包是最好的麵包。箇中原理其實很簡單，麵粉裡的酶遇水後便會變得活躍，將澱粉分解成單醣，這些單醣會成為酵母菌和細菌的養分。然後吸收了糖分的酵母菌會釋放乙醇及使麵糰膨脹的二氧化碳；細菌則會製造醋酸和乳酸，酸種便是因此得名。此外還要在麵糰中加入鹽，這樣除了可增加味道外，還可以緩和發酵速度，讓麵糰更紮實，以及防止二氧化碳流失，令麵糰保持膨脹。

IMAGES BY J.C. AMIEL; S. DELPECH; STEPHANIE FRAISSE; DOSSANTOS LEMONE; DOUGLAS MCWALL; SOPHIE ROLLAND





This form of bread making is the most ancient and traditional and these simple ingredients have been the basis of a staple food that is found in cuisines across the world. Yet it is not always straightforward. There are many factors that can affect the creation of the perfect loaf.

“I’m continually seeking a balance of acidity,” says Zachary Golper, chef and owner of Bien Cuit bakery in New York and 2018 James Beard Finalist for Outstanding Baker. “And by that I mean a balance of acetic and lactic acid to where the pleasure of eating it is present because you’ve got a creaminess, a pronounced but not sharp acidity, just the right amount of sodium that allows you to ferment for such an extended period of time and a beautifully moist crumb and a thick crust that has been taken to full Maillard reaction, but not burnt. To me that’s how you create a perfect loaf. And I have taken the time to figure out what will make it exactly those flavours that I’m looking for.”

Even though Golper may have found a winning recipe, he is always having to adapt it. “The wheat every year is slightly different so we change the recipe slightly every November. It’s usually just a mild adjustment in hydration, sometimes in hydration, salt and flour ratios,” he says.

這是最古老而傳統的麵包製作方式，而由這些簡單材料製成的麵包，幾乎是世界各地菜系中的主食。然而，焗製麵包似易實難，要烤一條完美的麵包受到許多因素影響。

躋身2018年James Beard傑出麵包師決賽名單的Zachary Golper，是紐約麵包店Bien Cuit的麵包師兼老闆，他說：「我總是不斷在尋求酸度恰如其分的麵包，即是醋酸和乳酸平衡，讓人吃起來心情愉快的麵包。因為這樣的麵包質感柔滑，酸味明顯但不過分強烈；分量恰到好處的鈉可以令麵糰的發酵時間延長；烤焗的時間和火候也要掌握好，才能做到外脆內軟而不會烤焦的。這就是我心目中的完美麵包，我花了很長時間才知道如何才能做出我想要的麵包味道。」

Golper雖然已找到箇中訣竅，但他仍然需要不斷作出調整。他指出：「每年的小麥都會略有不同，所以我們每年11月都會稍微改變配方。通常只是微調水的分量，但有時則需要調整水、鹽和麵粉的比例。」

This page: Gregoire Michaud works his magic

Opposite page, from left: Strawberry and Ricotta Tartine made with toasted sourdough; and the bread selection, both at Bakehouse

本頁: Gregoire Michaud 正在施展魔法

對頁左至右: Bakehouse的士多啤梨芝士烤酸種麵包; Bakehouse的麵包款式

“Scientists have not yet found all the evidence and dynamics behind natural yeast and the flavour it creates according to the different factors, like the air, the soil, the wheat, the salt, the interaction of each of them inside the bread,” says Michaud.

Perhaps this is part of the reason why artisanal bread making has experienced something of a renaissance in recent years, despite the prevalence of gluten-free propaganda and low-carbohydrate diets. There’s a certain element of the unknown inherent in bread making, even though knowledge is also required.

“There is no formula for the perfect bread,” says Alan Or, Chief Baker at the Ritz-Carlton Hong Kong. “I think that’s what makes baking challenging and interesting. For example, in different weather conditions we need to adjust the way we make bread. We also need to develop a connection with the starter, to try to sense what it needs. We do not only use scientific methods to do this, but also smell and taste.” There’s something basic and human to bread making.

“Every bread has its own personality, like a human being. There won’t be two identical breads unless they are mass-produced in a factory. Even if bakers make the same breads using the same recipe, the bread will not be the same because different bakers have different techniques. Every single artisanal loaf is like a piece of artwork, unique for its shape, texture, size and flavour,” says Or.

Scientists have not yet found all the evidence and dynamics behind natural yeast and the flavour it creates

科學家還未能完全了解天然酵母背後的所有運作和活動，以及它如何影響麵包的味道
— Gregoire Michaud



Michaud說：「科學家還未能完全了解天然酵母背後的所有運作和活動，也未能掌握空氣、土壤、小麥、鹽和彼此的相互作用等如何影響麵包味道。」

或許正是這個原因，使手工麵包在近年無麩質和低碳水化合物飲食大行其道的潮流中，仍能逆流而上，再次興起。雖然焗製麵包必須具備一定的知識，但有些事情卻是無法掌握的。

香港麗思卡爾頓酒店的糕餅總廚Alan Or表示：「沒有焗製完美麵包的方程式，正因如此，麵包製作才會如此引人入勝和有趣。舉例說，我們必須因應不同的天氣，調整製作麵包的方式。我們還要跟酸種建立某種連繫，嘗試理解它的需要。焗製麵包不只講求科學方法，還要利用嗅覺和味覺。」製作麵包有其基本和人性化的一面。

Or續道：「就像人類，每個麵包都有自己的個性。如非在工廠大量生產的話，沒有兩個麵包是完全一模一樣的。即使是以相同配方製作的麵包也會有分別，因為不同的麵包師技巧也各不相同。每條手工麵包都像一件藝術品，其形狀、質感、大小和味道都是獨一無二的。」



Aside from this aspect, people are becoming more conscious of what they eat, especially as supermarket breads are often filled with sugar, additives and preservatives. As such, there's nothing better than creating your own bread from scratch with just three simple ingredients: flour, water and salt, and allowing the natural microorganisms to work their magic.

Many believe that breads like sourdough are actually better for you, too, particularly when made from high quality ingredients such as organic, stone-milled, and therefore more flavourful, flours. Fermented for an extended period of time, the breads not only have more depth but are more digestible as the enzymes have had time to fully break down the complex carbohydrates.

"I think sourdough is the way humans have been eating bread since it was first created and I think it is the most compatible to the human digestive system and I think for that reason, to our palate, it tastes the best," says Golper.

There's something about the process of making bread, too, and the time and patience required. "Making bread had become a mostly silent meditation for me," wrote Chad Robertson, co-owner of acclaimed San Francisco bakery Tartine in the introduction to his book of the same name – the bread bible that revealed to the world the secrets of making sourdough and launched the hobbies of a new generation of home bread bakers.



Opposite page, from left: Sardine and Hummus on bread at Tartine; Bien Cuit Bakery in New York

This page, from left: Zachary Golper of Bien Cuit; the various bread flours he employs

對頁左至右: Tartine 的沙丁魚及鷹嘴豆蓉麵包; 紐約的 Bien Cuit 麵包店

本頁左至右: Bien Cuit 的 Zachary Golper; 他採用的各種麵粉



除了上述觀點，人們對吃進肚子裡的東西也愈來愈注重，而超市出售的麵包通常都含有糖分、添加劑和防腐劑。因此，沒有比自己從零開始製作麵包來得更健康。只需要麵粉、水和鹽這三種基本食材，然後靜待自然界的微生物施展魔法。

許多人相信酸種麵包對身體有益，尤其是採用優質食材，如有機、石磨這些風味更佳的麵粉等製作的麵包。長時間發酵的麵包不僅味道質感更豐富，也更容易消化，因為酶有足夠時間完全分解複雜碳水化合物。

Golper指：「我認為人類最早食用的麵包就是酸種麵包——這款麵包最容易消化，因此是我們應該覺得最美味的。」

麵包製作的過程需要時間和耐心。三藩市麵包店Tartine的東主之一Chad Robertson也是知名麵包師，他在自己撰寫的麵包烹飪書的序裡寫道：「製作麵包的過程基本上已成為我的冥想時間。」這本與其麵包店同名的書，被譽為麵包聖典，它公開了製作酸種的秘訣，使一整代人愛上了自己在家裡焗製麵包。

Michaud agrees with the mindfulness aspect of the bread-making process. "I have been living in Hong Kong for 20 years and I have come across many people in stressful business environments who tell me they want to make bread because it feels purposeful and it has a kind of psychological stress relief to it; the whole process of the making, the shaping, the mixing, the baking makes them relaxed." Indeed Michaud currently has a retired CEO volunteering in his bakery, simply because making bread makes him content.

Bread making, however, is not without its challenges, and technical knowhow is essential.

The most important aspect is the starter, and taking care of it. This living ingredient requires nurturing. The first thing Or does when he gets into his baking laboratory at 7am every morning is to feed his flour-and-water starter. "We have more than six types of starter in the hotel which need to be fed in different ways," says Or. These each contribute to different final baked products.

It's the same for Michaud whose starters are kept in a humidity- and temperature-controlled room to ensure their consistency for each type of dough.

Once the starter is secure, there are other important techniques that contribute to bread making. Practice, of course plays its part, but there is an instinct to the process too, and to knowing when and how to make any adjustments necessary to ensure a prime final product can be achieved.

Michaud也同意製作麵包的過程能令人心平氣和，他說：「我在香港生活了20年，見過許多工作環境非常緊張的人，他們告訴我想做麵包是因為做麵包是一心朝著最終目的而進行的活動，可以舒緩他們的心理壓力。整個製作過程，包括混和材料、擀揉、烘焙等，都能讓他們放鬆。」Michaud表示，他的麵包店也有一位退休行政總裁純粹因為做麵包能給他滿足感而自動請纓來當義工。

不過，製作麵包其實充滿各種挑戰，必須具備相關知識才能應付。

最重要是照顧酸種：它是「活」的，需要悉心培養。Or每天早上7點來到烘焙室，首要做的就是給酸種餵麵粉和水。「我們酒店有超過六種酸種，每一種的餵養方式都不同。」不同的酸種會用來製作不同種類的麵包。

Michaud也是如此，他將酸種存放於可調控濕度和溫度的房間，確保每個酸種的狀態都能夠保持穩定。



This page, from left:
Freshly baked bread;
Alan Or of Ritz-Carlton
Hong Kong

Opposite page: Chad
Robertson of Tartine

本頁左至右：新鮮出爐的
麵包；香港麗思卡爾頓酒
店麵包師Alan Or

對頁：Tartine麵包店的
Chad Robertson

☞ Making bread had become a mostly silent meditation for me
製作麵包的過程基本上已成為我的冥想時間 ☞
– Chad Robertson

"One of the challenges is teaching people how to mix and to knead the dough and to handle the high hydration level, and then the folding. It is not something we can write on paper, because it's about feeling and to pass on this feeling is a challenge," says Michaud. "It is never fixed because every human is different. Some people get it very quickly and it's natural and for some the method seems strange and it takes more time."

Once mastered, though, bread is perhaps one of the most fulfilling things you can create. Its creation is rhythmic, repetitive, meditative, and innovation can be applied once the basic techniques are acquired. It takes time and patience, too, but the rewards are nurturing to body and soul.

"Grain and bread is the very thing that began civilisation," says Golper. "And I think when people want to have that experience of a tactile human relationship with an organic substance, in this time of technology there's nothing really on Earth more satisfying than making bread because at the end of the process you eat it." 🍞

當酸種進入穩定狀態後，便需要注意製作麵包的其他重要技巧。練習當然不可或缺，但製作過程亦需要依靠直覺，需要知道何時及如何進行必要的調整，以確保最終烘焙出最佳的麵包。

Michaud表示：「其中一個挑戰是教人如何揉混麵糰及處理高水分含量的情況，然後還有折疊麵糰。這些不是可以用白紙黑字傳達的東西，而是要憑感覺，要如何讓人明白這種感覺是困難的事。每個人都不一樣，所以不可能永遠一成不變。有些人可以很快掌握箇中技巧，有些人卻覺得這種方法很奇怪，需要更多時間才能領悟。」

不過一旦掌握得法，做麵包或許是能讓你獲得最大滿足感的事情之一。這是有節奏、不斷重複、平靜、沒有雜念的過程。掌握了基本技巧之後，還能自行發揮創意。雖然做麵包需要時間和耐心，但能獲得滋養身體和靈魂的美妙成果。

Golper說：「穀物和麵包出現於人類文明建立之初。我認為在這個科技時代，當人們想要透過有機物質感受能實際接觸得到的人際關係時，沒有什麼比做麵包更能帶來滿足感，因為最後你還可以把它吃進肚子。」 🍞