UK Baking Industry Code of Practice for the Labelling of Sourdough Bread and Rolls

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Acknowledgment of stakeholders

The Association of Bakery Ingredient Manufactures (ABIM) would like to thank the stakeholders who have had an input into the development of this document. This continual support over the years has been instrumental in developing this code of practice (CoP) which supports the bakery industry to implement the best possible practice in relation to the labelling of sourdough bread and rolls.

1. What is sourdough?

As demonstrated by the definitions of sourdough below, you can see that with time and scientific advances, that this has allowed for a better understanding of how sourdough works:

"Sourdough is both a technique and a microbial system" *(E.J Pyler, L.A. Gorton; Baking Science and Technology, 4th Ed. Vol 1, Ch. 2; pub. Sosland 2008)*

"Sourdough is 'a mixture of wheat and/or rye flour and water, possibly with added salt, fermented by spontaneous (from flour and environment) lactic acid bacteria and yeasts which determine its acidifying and leavening capability. These activities are obtained and optimized through consecutive refreshments (or re-buildings, replenishments, backslopping)'" *(A. Corsetti, Handbook on Sourdough Technology Ch. 4, Ed. Gobbetti & Gänzle; pub. Springer 2013)*

As mentioned above, sourdough is both a bread making process and an ingredient. It is the name given to a mixture of flour and water that has been allowed to spontaneously ferment: the fermentation activity being caused by lactic acid bacteria and yeasts that are naturally present in the flour or derive from the environment, the so-called "house microbiota". This fermentation is encouraged and sustained by regulating the fermentation conditions and making further additions of flour and water at regular intervals, so that a

stabilised consortium of lactic acid bacteria and yeasts is maintained within the fermenting dough. It is the synthesis of lactic and acetic acids by the fermenting bacteria that gives the sourdough its characteristic flavour, aroma and rheological properties. The bacteria also produce a small amount of carbon dioxide during fermentation that, given sufficient time, will leaven the dough. Sourdough fermentation may also be initiated by inoculating the flour and water mixture with a starter culture.

Sourdough may be used as the sole leavening agent to create bread products that have distinctive characteristics, including:

- A crust characterised in appearance by the presence of very small fermentation blisters
- A crumb texture that is open, with irregular shaped holes and waxy appearance
- A crumb texture that is relatively firm to the touch
- A highly fermented aroma with distinctively acidic notes

In addition to the production of characteristic breads, sourdough has other very useful applications in the manufacture of baked goods. For example, the addition of sourdough can improve the laminating properties of pastry for the production of Viennoiserie (croissant, Danish Pastries, etc.). It can also improve the texture and enhance the flavour of enriched breads such as Brioche. Sourdough can also be used to enhance the mould-free shelf life of some products.

2. Producing sourdough

The main raw materials for producing a sourdough are flour and water, with the optional addition of a culture: the further key element is time. From a production point of view a baker also has to consider the space required for fermentation of the sourdough; and the necessary critical controls in order to ensure that it remains viable, stable and uncontaminated. In addition, a certain degree of skill in dough production and handling is required for successful sourdough bread manufacture.

Where space and skills are lacking, bakers have recourse to an increasing number of ingredients and raw materials to allow them to offer bread products that include an element of sourdough to their customers. However, it is important that some differentiation should be made between methods of production so that due recognition may be given to the skilled craftsman, and that the integrity of the term ‘sourdough’ may be maintained as a product descriptor.

It is in the context of the wide range of applications and available ingredients that this Code of Practice for labelling is being proposed.

3. Regulations and codes of practice in other countries

According to the information paper issued by FEDIMA (Federation of the European Union Manufacturers and Suppliers of Ingredients to the Bakery,

Confectionery and Patisserie Industries), few European countries have existing regulations or Codes of Practice relating to the composition of sourdough[1],[2]. FEDIMA also states the position of its members regarding the use of the term 'sourdough' as follows:

"FEDIMA members agree on using the denomination "sourdough", or the local name as set out in the annex 1, only for products to which no additional additives, e.g. acids, bases and their salts, have been added to artificially adapt the acidity. This is to properly inform customers and consumers". FEDIMA members also agree to comply with any local regulations or Codes of Practice of the countries into which they may sell their products.

One of the clearest and most often cited sourdough regulations is the French Décret Pain 93-1074 of 13th September 1993 in which the constituent parts of a sourdough starter are specified along with the necessary levels of acidity it must contain. Furthermore, adding baker's yeast *(Saccharomyces cerevisiae)* is allowed when the dough reaches its last phase of kneading, to a maximum amount of 0.2% relative to the weight of flour used up to this point.

There are, as yet, no regulations or Codes of Practice in the UK that govern the nature, production and labelling of sourdough products in the UK market. A unique opportunity exists for the industry itself to agree on terms and definitions that are mutually beneficial to producers and consumers alike, thus militating against potentially misleading labelling information whilst preserving the integrity of the definition of 'sourdough' and 'sourdough bread' and the methods by which they are produced.
To that end, this proposal suggests the following definitions and terms for labelling purposes:

4. Ingredient definitions for the purposes of labelling

Sourdough: a mixture of water and one or more flours milled from cereals or pseudo cereals; to which salt may or may not be added; which has been allowed to spontaneously ferment due to the metabolic activity of the naturally occurring lactic acid bacteria and yeasts contained within these raw materials or coming from the house microbiota, and containing a live and active culture of those micro-organisms; or fermented by means of inoculation with a starter culture.

Starter culture: a live culture of lactic acid bacteria and yeasts usually found in sourdough.

[1] https://www.fedima.org/images/resources/informed-customers-consumers/ICC_-_information_paper_on_sourdough_in_eu_final.pdf

[2] https://www.fedima.org/images/resources/informed-customers-consumers/FEDIMA_Position_Paper_Sourdough_in_Europe_2019.pdf

Inactive/deactivated/devitalised sourdough: liquid or dry sourdough in which the microbial culture is no longer live or active so that it can no longer be used for leavening purposes.

Sourdough-based preparation or ingredient: a sourdough prepared with additional raw materials, which are present to increase the shelf-life of the sourdough and specifically enhance the acidity, flavour and/or aroma of the finished product**.**

5. Suggested definitions for labelling and marketing purposes

Marketing terms must not mislead the consumer as to the true nature of the product. Unless the product meets the sourdough definition below, labelling and marketing terms should be restricted to describing the sourdough ingredient and should not imply that the product has been made using a sourdough process.

i. **"Sourdough (product name)":** a product in which live/active sourdough is used as the principle leavening agent; which may be made with the addition of a maximum of 0.2% compressed bakers' yeast, or the equivalent level of cream, liquid, dried or frozen yeast, as calculated on the total flour weight of the final dough. Additives or flavourings in the final dough must not be used with the exception of the mandatory flour fortificants required by the UK Bread and Flour Regulations 1998[3]. Products labelled in this way must not contain inactive/deactivated/devitalised sourdough.

   Marketing terms may describe both the process and the typical sensory characteristics achieved, such as crumb structure and flavour.

ii. **"(Product name) with sourdough":** a product made with live/active sourdough, and/or inactive/deactivated/devitalised sourdough, where commercial bakers' yeast has been used as the principle leavening agent in the final dough and which may also contain permitted additives. The product must NOT contain additives which are added specifically to impart a sourdough type acidity, flavour or aroma to the finished product (e.g., acids or their salts).

Marketing terms may only describe the flavour characteristics imparted by the sourdough and should not imply that the product has been made using a traditional sourdough process.

[3] At the time of writing, Defra is seeking views on proposed amendments to the Bread and Flour Regulations 1998 and the Bread and Flour Regulations (Northern Ireland) 1998.

iii. ‘Sourdough flavour (product name)’[4,5,6]:

- A product made with live and/or inactive/deactivated/devitalised sourdough, where the sourdough itself contains raw materials that have been added specifically to:
  I. Increase the shelf life of the sourdough
  II. Enhance the sourdough type acidity, flavour and/or aroma of the finished bread
- All sourdough flavour products in this category may contain bakers’ yeast and other permitted additives.

Marketing terms should not imply that the bread characteristics have been achieved without the use of additives.

6. Worked Example: Bloomer Loaf

i. “Sourdough Bloomer”:

Purpose of definition: to indicate that the bread has been made using a sourdough process, i.e., with long fermentation; and principally leavened by the action of the sourdough. The sourdough used **MUST** be live/active to provide the leavening activity necessary to raise the dough. The addition of yeast is optional, but the permitted level is restricted to ensure that the bread has been leavened using a long fermentation process.

- Must be made with live/active sourdough as the **PRINCIPAL** leavening agent
- The final dough must **NOT** contain more than 0.2% of ‘commercial’ compressed bakers’ yeast; or the equivalent level of cream, liquid, dried or frozen yeast; calculated on the total flour weight contained in the final dough.
- The product must **NOT** contain inactive/deactivated/devitalised sourdough.
- The final dough must **NOT** contain chemical leavening agents.
- The final dough must **NOT** contain any additives; with the exception of those flour additives and treatment agents that are required by, or permitted in, the UK Bread and Flour Regulations 1998[3].
- The final dough must **NOT** contain any ingredient designed to specifically add/enhance the sourdough flavour of the bread

[4] Users of this definition must ensure compliance as per the retained EU Regulation (EC) No 1334/2008.

[5] The register of flavourings sets out a list of flavourings permitted for use in Great Britain. This register does not replace retained EU Regulation 1334/2008 or retained EU legislation on the common authorisation procedure which are the legal basis for the placing on the market and use of flavourings.

[6] The supportive partners of this CoP recognise that other product(s) could be legally created with a ‘sourdough flavour’ being added on to the final dough without the use of a sourdough-based preparation or ingredient during the production process. However, these products must not be marketed with the term ‘Sourdough’ on the front of the packaging. The term ‘Sourdough flavour’ must be included in the ingredient declaration on back of pack as per the current labelling regulations.

- The final dough must **NOT** contain artificial preservatives/flavourings

Suggested label descriptors for marketing purposes include:

- "Traditional Sourdough Bloomer"
- "Made using long fermentation process"
- "Made using traditional sourdough method"
- "No added yeast" may only be used when the product has been leavened **SOLELY** by the activity of the sourdough and no commercial bakers' yeast has been added
- No artificial preservatives/flavourings

ii. "Bloomer with Sourdough":

Purpose of definition: to indicate that sourdough has been used in the process for flavouring and/or rheological benefit rather than principle leavening purposes. The sourdough in this case may be live/active, and/or inactive/deactivated/devitalised.

- The final dough **MAY** contain inactive/deactivated/devitalised sourdough, whether liquid or dry
- The final dough **MAY** also contain live/active sourdough
- The final dough **MAY** contain additional 'commercial' bakers' yeast, whether cream, compressed, dried or frozen
- The final dough **MAY** contain permitted additives/preservatives
- The final dough must **NOT** contain natural organic acids from fermentation, or their salts, that are specifically added to enhance the sourdough flavour of the product

Suggested label descriptors for marketing purposes include:

- "Made with sourdough"

DISALLOWED:

- "Sourdough Bloomer"
- "Made using traditional sourdough method"
- "No additives/preservatives": unless this is actually the case

iii. "Sourdough Flavour Bloomer":

Purpose of definition: to indicate that the sourdough-base used in production includes raw materials or additives that specifically enhance the sourdough type acidity, flavour or aroma of the finished product.

The final dough **MUST NOT** contain additional raw materials which are added specifically to enhance sourdough-type acidity, flavour and/or aroma to the finished product, **unless those raw materials** are an integral part of a sourdough-based ingredient.

DISALLOWED:

- “Sourdough Bloomer”
- “Bloomer made with sourdough”
- “Made using traditional sourdough method”
- “No additives/preservatives”

7. Decision Tree