

A different flavor

WHY USE SOURDOUGH WHEN RYE BREAD CAN BE MADE WITHOUT IT AND CONSUMERS EAT LESS RYE PRODUCTS ANYWAY? **DR. HANS-CHRISTIAN FECKE** AND **WILKO QUANTE** OF DR. SUWELACK NACHF. GMBH & CO KG FROM BILLERBECK, GERMANY, ARE DISCUSSING THESE AND OTHER QUESTIONS WITH HILDEGARD M. KEIL, EDITOR-IN-CHIEF OF BBI



++ Dr. Hans-Christian Fecke



++ Wilko Quante

+ **bbi:** Dr. Fecke, Mr. Quante, the Association of German Food Technologists (GDL) is organizing a sourdough forum in May which we will cover in our next issue. But before we approach this subject from the scientific point of view, we would like to know what the market looks like and what you have to say about the practical aspects of using sourdough. The rye proportion in bread is on the decrease. Is sourdough still an interesting product for bakeries?

+ Dr. Fecke: It is a very important product, but the downgrading of the term to rye sourdough alone is not appropriate anymore. When talking about fermented doughs in general, we are talking about sourdough and sponge doughs made from rye and wheat.

+ bbi: Let's start with rye sourdough which may still have the largest share among the fermented doughs. However, there are now rye breads that can be baked completely without sourdough. Is the demand for sourdough diminishing?

+ Quante: This again does not go far enough. It is not correct that the only technological purpose of using sourdough is to turn rye into a product that can be baked. Today, this aspect takes a step back behind two other pur-

Dr. Suwelack



Dr. Suwelack, the company located in Germany near the city of Münster, employs 400 people and has an annual turnover of € 90 m, 60% of which is from exports. The high-tech company is active in five technology fields:

- + Biotechnology: cultures and fermentation
- + Extraction
- + Freeze drying
- + Spray drying
- + Vacuum belt drying

Dr. Suwelack Nachf. GmbH & Co KG is the largest producer of dried sourdough in Germany and supplier to the international food industry. Dr. Hans-Christian Fecke heads the biotechnology department, Wilko Quante is sales director.

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poses, namely to contribute flavor to the dough and to make the bread easier to digest.

+ bbi: Sour is not a very popular taste anymore – do you agree?

+ Dr. Fecke: We are experiencing today that the trend is going clearly towards mild sourdoughs and at the same time to higher dosages. Only higher amounts can provide a completely rounded aroma profile. They are the result of fermentation that has been controlled in all aspects.

+ Quante: Even in countries where the tradition of sourdough production is not ingrained into the culture such as in Great-Britain or the US, we are seeing an increasing interest in controlling the flavor profile of the bread via the addition of fermented doughs.

+ bbi: Is it by chance that your company is one of the few that is capable of mastering the precise control of the fermentation process?

+ Dr. Fecke: No, not at all. Almost anybody can do that as long as he has a selection of bacterial strains available and knows their respective profiles. We have about 200 different strains in our reference stock. Furthermore, the fermentation must be done under controlled conditions with temperature, mother sponge, substrate and time being only a few of the parameters. Hygiene is another aspect: contamination with foreign microorganisms and wild fermentation must be prevented. Then the process must be stopped at the right state of maturity. The sourdough must be properly stored, and much more. All this is not a problem, but a process with very many variables.

+ bbi: Therefore the traditional three-phase method in the bakery yields only accidental results?

+ Quante: Not accidental, but you will certainly not get the same result every time, even if there is the right expertise in operating these machines, which unfortunately is not always guaranteed. Almost certainly no bakery can achieve and maintain with its own sourdough a number of different aroma profiles consistently for the different types of bread, even if hot soaker dough or sponge dough is additionally used.

+ bbi: OK. Agreed. But we would still like to know how you create so many different flavor profiles.

+ Dr. Fecke: As already mentioned, we have more than 200 different bacterial strains that work for us and we know the results of their work because we define the conditions. We are capable of designing technological parameters which are much more varied and complicated than a bakery could achieve. Furthermore, we have the chance to select from and combine a broader variety of raw materials needed as substrate for the fermentation than any bakery could for economical reasons.

+ Quante: In practice, the properties of a sourdough are classified by pH and acidity. But this is an unbalanced view which does not do justice to the comprehensive performance a sourdough will deliver. We experience now that the aroma profile becomes more and more important and the analytical reference numbers take a step back. For example in Italy and France much emphasis is placed on the flavor. Our developers have the most advanced analysis methods and sensory evaluation panels at their disposal.

+ Dr. Fecke: Of course, we can vary taste or aroma profiles by creating combinations with other fermented raw materials.

+ bbi: Can you give us an example?

+ Dr. Fecke: The combination of sourdough and yoghurt for example is highly suitable for baguettes. Even the combination with traditional balsamic vinegar might sound exotic but is nevertheless achievable. ▶



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+ bbi: Is it an open field for health and wellness products?

+ Quante: Certainly, even a combination with green tea is possible. Together with our customers, we have implemented a number of exciting ideas and we will keep on doing this, according to our customer's requirements. We have a broad technological profile. A lot is possible, for example even the utilization of non-cereal raw materials as a basis for sourdough.

+ bbi: Rye breads with hemp sourdough, green tea and yogurt. Would this be possible?

+ Dr. Fecke: Well, this is going a bit too far. But in general something like that is probably possible. Most important to me, however, is that the consumers today require a clean label. I can meet this demand by using fermented doughs, sourdough, as well as sponge doughs. At the same time, a broad selection of reproducible flavor profiles must be offered. And all this combined with process safety which – considering the personnel situation in many bakeries – is not a secondary aspect any longer.

+ Quante: It does not necessarily have to be the exotic creation you suggested. But lately we have experienced a significant increase in demand for organic sourdough as well as for whole-grain sourdough. The latter is not only used for whole-grain breads but is mainly used because they provide a nutty flavor.

+ bbi: Is there anything that a dried sourdough, sorry I meant to say fermented dough, can not do?

+ Dr. Fecke: Of course, it cannot work wonders and it can not deliver a pre-swelling. But apart from that, a sourdough can do everything a baker's heart desires and the consumer enjoys.

+ bbi: You prefer to talk about fermented doughs instead of sourdough and sponge dough. On the other hand, sourdough is a popular subject for disputes about a proper definition. Do you see the need for a precise definition?

+ Quante: No, not at this time, because there is a gradual transition. The different aroma profiles deserve more attention because they are the key parameters in this field.

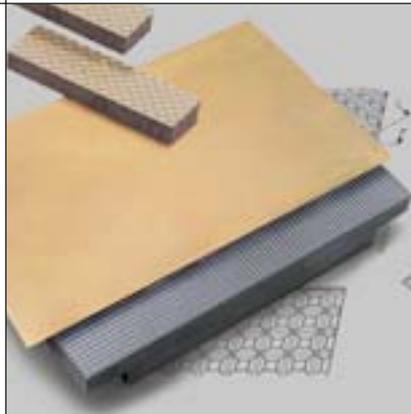
+ bbi: And how do you answer this question: does it live or not?

+ Dr. Fecke: This also belongs to the category of academic shadow boxing because first of all a broad spectrum of conditions must be defined before this question can be answered. In practice this is of no relevance because nobody will use dried sourdough as starters.

+ bbi: Dr. Fecke, Mr. Quante, thank you for the interview. +++



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