

The Public Analyst and The Baking Industry

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This article is adapted from a lecture delivered on 13th November, 1973, to the British Chapter of the American Society of Bakery Engineers, to whom the author is indebted for permission to publish. Legal aspects of the functions and duties of Public Analysts are discussed with some regard to difficulties arising from the Bread and Flour Regulations 1963, and to principles applied to labelling problems.

In the days before the 1939-45 war, there were, with few exceptions, no quantitative requirements of composition for specific foods. Butter and margarine had to contain not more than 16 per cent. of water; there were compositional standards for condensed milk; and there had been presumptive minimum standards for the fat and non-fatty solids of liquid milk ever since 1901. In other respects the Public Analyst, when trying to decide whether a sample was genuine or not, had to make up his own mind in the light of his knowledge and experience. He worked very largely under the principal provisions of the Food and Drugs Act itself, and particularly under Section 2 of the Act. This reads as follows:

"If a person sells to the prejudice of the purchaser any food or drug which is not of the nature, or not of the substance, or not of the quality, of the food or drug demanded by the purchaser, he shall, subject to the provisions of the next following section be guilty of an offence."

This is the foundation of a Public Analyst's work when deciding whether or not a given sample of food is adulterated. There has always been some controversy regarding the exact meaning of the words "nature", "substance" and "quality", but with one or other as a basis, it is usually possible to characterise the offence committed. Although the use of the word "demanded" makes it appear that purchasers of foods are aggressive in their habits, it is normally held that the word simply means "expected".

It must be emphasised, because there seems to be so frequently a complete misunderstanding of the position by manufacturers and retailers, that the duty is laid firmly on the Public Analyst to decide, as regards each and every sample submitted to him, whether it is of the nature, substance and quality that the ordinary purchaser—not an expert, but an ordinary reasonable housewife—would expect to receive if she asked for the food by the name under which it is submitted to the Public Analyst. He cannot evade the issue by saying to himself "there is no quantitative standard of composition for this product and therefore anything goes". It is obvious, for example, that marzipan containing only 1 per cent. of ground almonds, or even none at all, is not of the quality expected; it is equally obvious that marzipan containing 50 per cent.

of ground almonds mixed with sugar is of very good quality (though a hundred years ago it would have been of normal average quality). Somewhere in between these two extremes, the Public Analyst has to draw a line which separates marzipan sheep from marzipan goats, so to speak. This type of decision is forced upon him every time he is faced with a sample for which there is no quantitative standard laid down by the law.

This necessity of decision making can sometimes put the Public Analyst in considerable difficulty, particularly when the sample is what is usually referred to as a "complaint" sample, that is to say, one that has been submitted to the Public Analyst because an ordinary purchaser has complained to the Local Authority that the food purchased is not what it ought to be. Many such complaints can be dealt with readily because the offence is clear-cut—a finger bandage in a bun or a mouldy meat pie—but others are not so simple. Some time ago, I had occasion to report against a sample of blackcurrant pie; the purchaser had alleged that the fruit content was too low and I found myself in agreement with him. The manufacturer took strong objection to the idea that I should criticise his product on this ground at all, because there was no regulation governing the fruit content of a pie. In a letter he wrote to the Local Authority he said "one might just as well ask the Public Analyst to decide how many currants there should be in a currant bun". He presumably thought this was a crushing rejoinder and that his argument constituted a *reductio ad absurdum*, but in fact it was the manufacturer who was being absurd. If I had a complaint from an aggrieved housewife that the article she bought as a currant bun did not contain sufficient currants to justify the term, I should then be forced to consider and answer the very question that the manufacturer had so scornfully posed.

FOOD STANDARDS REGULATIONS

Fortunately, since the 1940's, the Public Analyst has been relieved to a large extent of the necessity for making standards for himself by the enactment under the Food and Drugs Act of regulations governing the composition of foods. For example, it is no longer necessary for a Public Analyst to have to decide how much meat there should be in a meat pie; the law now requires that at least 25 per cent. of meat shall be present in an article sold under that name. There are many regulations of this kind, and this has the great advantage that the situation cannot arise, as it did occasionally at one time, that the Public Analyst in one area would adopt a different standard from the Public Analyst somewhere else, so that what it was legal to sell in Yorkshire could be sold only illegally in Essex. Again, the manufacturer now knows exactly where he is when deciding on formulations for his products. Regulations do lead to difficulties and I shall come back to this point shortly, but on the whole, consumers, manufacturers and enforcing authorities are all much better off with regulations than without them.

DESCRIPTIONS THAT DECEIVE

Section 6 of the Act is almost as important to the Public Analyst as is Section 2. It makes it an offence to label or advertise a food sold or exposed for sale in a manner which "falsely describes the food or drug, or is calculated to mislead as to its nature, substance or quality". Once again, the legal draughtsman does not always use words with their ordinary meaning and in this context the word "calculated" merely means "likely".

There was always the difficulty, when Section 6 of the Food and Drugs Act was the only guide to correct labelling, that the Public Analyst had to decide for himself the point at which a label becomes misleading. Section 6 was undoubtedly inserted in the Act primarily for the purpose of dealing with statements that were misleading in themselves. For example, the phrase "Rich in Vitamins", if applied to a product containing only negligible amounts thereof, is obviously misleading in any size of type. When one has to consider whether a label is misleading not because of what it says but because of the size of type in which it says it, one requires more detailed guidance, and an attempt to provide it was made by the Labelling of Food Order, 1953. Experience showed that this was not sufficiently detailed, and it has now been superseded by the Labelling of Food Regulations, 1970, which came into force on 1st January, 1973.

LEGAL DIFFICULTIES

The Public Analyst is thus enabled to deal successfully with the unscrupulous or ignorant or careless manufacturer who commits an offence that would be regarded as such by every reasonable person. The great majority of food manufacturers have every wish to comply with the law and do their best to do so. Unfortunately they then frequently have great difficulty in deciding what the law is in relation to the product they are considering, because of obscurities in the wording, not so much of the Act as of the Regulations. Both as a Public Analyst and also as a consultant, I have often had great difficulty in advising a manufacturer how he should comply with the law, and an appeal to the Ministry by either the enforcing authority or the manufacturer frequently produces a non-committal answer. One must admit that it is extremely difficult to word a legal document that will contain no ambiguities and that will provide for every kind of food product covered by the Regulation in question, even including new products that were not on the market when the Regulation was published. The fact remains that in my opinion many Regulations could have been drafted very much better. The Bread and Flour Regulations offend in this respect in more than one way. The worst offence, because it is so fundamental, is the definition of the word "bread".

WHAT IS BREAD?

The definition in the Regulations begins as follows: "'Bread' means bread in any form intended for sale for human consumption". This leaves us precisely where we were before we started, except perhaps that it excludes bread intended

for sale for non-human consumption, which does not seem in this context worth saying. It then goes on "and includes the following, and any part of any of the following, that is to say, rolls, baps, fancy loaves and speciality bread but does not include potato bread". This does answer a few questions about "near-breads", provided, that is, that everyone is quite sure what is meant by baps, fancy loaves and speciality breads, because these are not defined further. The definition says nothing about any other articles that might be considered as in the fringe area between bread and non-bread, which is just the area in which a good definition is essential.

For example, a product that appeared on the market a few years ago had the shape of a loaf of bread, a similar appearance, texture and taste, and was intended to be used instead of bread. But it had a very different composition from ordinary bread. It was eventually agreed between the manufacturers and the Local Authorities that provided the word "bread" was not applied to the product on labels and advertisements it would be accepted that it was outside the scope of the Regulations; but the point was never tested in the Courts.

Again, I had submitted to me as Public Analyst some time ago an article described as a "bread mix". The ingredients included baking powder but no yeast. The label bore the words "Simply add water and bake. Makes 2 delicious bread loaves". The question immediately arose, can bread be made by a process that does not involve panary fermentation? I decided that the best approach to the problem would be by a practical test. The contents of the packet were processed according to the instructions and the final baked product was then examined by myself and other members of my staff. The product looked and tasted more or less like bread and was quite pleasant to eat. We all agreed that if the loaf had been handed to an ordinary housewife and she had been asked what it was, she would have replied at once that it was bread and would wonder why there was any doubt about it. I therefore accepted the product as correctly described; but many orthodox bakers would stoutly deny that any article produced in this way could possibly be described as bread without qualification, and I am still wondering why the Ministry did not foresee this problem when they originally drafted their so-called "definition" of the word "bread".

It is curious that although bread is defined so vaguely, *white bread* is defined as "dough, made from flour, yeast and water, which has been fermented and subsequently baked". The word "fermented" is not defined further, but aeration by means of chemical substances is certainly not fermentation. Consequently, although the do-it-yourself product described above can properly, in my opinion, be described as bread, it cannot legally be described as "white bread", even though this is an accurate description of its colour!

WHEATMEAL OR WHOLEMEAL

Brown bread or wheatmeal bread has a definition (Reg. 6) that begins with the same words as the definition of white bread, but continues "and shall contain wheatmeal and not less than 0.6 per cent. of fibre (calculated

by weight on the dry matter of the bread)". The word "fibre" is defined (Reg. 2) as "the organic matter contained in the dry de-fatted residue obtained by digesting a sample of flour or of bread successively with boiling acid and boiling alkali". Even those whose knowledge of food chemistry is only basic will appreciate that this definition is completely ridiculous, because there is no reference whatever to the strength of the acid, the strength of the alkali, the time of boiling, and so on. The words quoted are apparently intended to imply the use of the analytical method, employed by chemists all over the world, which is specified in great detail in the Fertilisers and Feeding Stuffs Regulations; and it would have been very much better if the Ministry had either said so or omitted a definition of the word "fibre" completely from the Bread and Flour Regulations, because then all chemists would have accepted the word as having a defined meaning elsewhere. As it is, it would be quite easy for several chemists working on the same sample of brown bread to obtain results for the fibre content anywhere between nil and 1 per cent. or more by applying different analytical processes, all of which would nevertheless fulfil the requirements of the definition of fibre quoted above.

"Wheatmeal flour" is also undefined except in terms of its "fibre" content, the requirement being exactly the same as that for wheatmeal bread. Even if we accept that everyone will interpret this term in what we may call the orthodox sense, the fact remains that there must be a great number of ways of re-combining the various fractions from the milling of wheat so as to produce a mixture complying with the specification. There is no such doubt about the definition of "wholemeal", which states, simply and clearly, that it "shall contain the whole of the product derived from the milling of cleaned wheat".

This leads me, however, to a matter that is currently causing me some concern. One Local Authority recently decided to survey the wholemeal bread sold in its area, so that I received half a dozen samples from as many different shops. The fibre content of the samples (calculated on the dry matter) was found to vary from 1.17 to 1.87 per cent. Now the fibre content of wholemeal flour is given by Kent-Jones and Amos in "Modern Cereal Chemistry" as 1.6 to 2.1 per cent. at 13 per cent. moisture, which is equivalent to 1.84 to 2.41 per cent. of the dry matter. It is closely correct to say that 1 lb. of the dry matter of bread contains 1 lb. of the dry matter of the flour from which it was made; so there is a clear inference that at least some of my samples were not made from wholemeal flour.

It may be that some of the purchasers of these misdescribed loaves are neither prejudiced nor defrauded. I was told by a retail baker that the person who asks for a wholemeal loaf often merely wants a brown loaf and accepts a wheatmeal loaf without question. He added that people who know the difference between a brown or wheatmeal loaf and a wholemeal loaf, and want to buy the latter, almost always go to a Health Food Stores and get one with a well-known proprietary name. The fact remains that to sell one thing in response to a request for another is a *prima facie* fraud, and those who do it are at risk of prosecution.

TRADITION AND PROGRESS

The primary duty, imposed by Parliament on Public Analysts, of protecting the ordinary consumer against being led into purchasing food that is "not of the quality demanded" has frequently led to controversy with manufacturers who do not agree with our opinion of what the housewife expects to get when she asks for an article of food under a certain name or sees that name on a packet. In forming our opinion we always try to adhere to certain principles that have been fought for by Public Analysts ever since they came into existence, and which can be illustrated by examples.

First, then, if a compound food derives its essential character from an ingredient that is expensive relatively to the others, we strive to maintain a satisfactory content of that ingredient. In many cases, our task is made easier by the existence of a Statutory Instrument that prescribes what the minimum requirement shall be. The fruit content of jam is controlled in this way, the actual figure varying with the variety, and meat pies must contain at least 25 per cent. of meat. But when there is no official standard, we have to make one for ourselves, and the difficulty of doing this is made worse by the continual degradation brought about by competition in this highly competitive field.

As an illustration, consider the story of marzipan. Sixty or seventy years ago, all the cookery books agreed that this was a mixture of ground almonds and sugar in about equal parts, and the housewife who wanted marzipan as a cake coating or filling bought these two ingredients and made it herself, perhaps adding white of egg as a binder. But then two things happened. After the first World War, almonds became increasingly more expensive; during the second World War, they disappeared altogether, so that "marzipan" became a mixture of sugar and soya, with almond flavouring! When almonds came back after the war, they soon became five times more costly than sugar. Further, in line with the general move towards pre-packing everything, pre-packed marzipan had appeared on the market before 1939, and early specimens thereof were of reasonably good quality, the percentage of almond substance being about 40 per cent., which is in agreement with a recipe in "Mrs. Beeton" in an edition of the 1930s. But these were soon undercut in price by products containing less almond, and by the late 1940s, some of these so-called "marzipans" contained less than 20 per cent. of almond substance while others, containing none at all, were made with peach kernels and even peanuts. The Association of Public Analysts realised that if this process of degradation were permitted to continue, marzipan of traditional type would never return, and we opened negotiations with the leading manufacturers of pre-packed marzipan, who were themselves concerned at the position. We were unable by this time to persuade them to accept a minimum almond content of 40 per cent., as we would have liked. This attempt to put the clock back to before 1939 was regarded by them as quite unrealistic with almonds at their post-war price, and we had to agree that events had overtaken us. We eventually compromised by accepting a minimum of 25 per cent. almond substance and no other nut. Then, armed

with a Code of Practice embodying these requirements, it became possible to prosecute some of the worst offenders, knowing that the reputable traders would be with us and not against us, and so the Code of Practice became accepted. But if an agreement had been negotiated before 1939, the quality of pre-packed products sold as marzipan could have been pegged at a higher level and the housewife would have been assured of a product nearer to what her grandmother made.

This brings me to my second principle, which is almost a corollary of the first. If a traditional product or recipe has become expensive because of the high cost of certain ingredients, there can be no objection to the marketing of a less expensive substitute containing a smaller proportion of the costly ingredients, or even made from other cheaper substances in place of the traditional ingredients; but the substitute must be so labelled and described as to make its nature quite clear to the prospective purchaser and avoid any suggestion of "passing off". A mixture of ground peach kernels and sugar, for example, is sold as "Persipan" on the Continent and may also be available in Britain. This is, of course, quite legal and unobjectionable. But if the product were sold as marzipan, this would be as much a fraud as selling margarine under the name of butter.

THE "LAW" OF FIRST IMPRESSION

Finally, there is the principle, which is embodied nowadays in the Labelling of Food Regulations, 1970, not only that the description under which a food is sold must inform the prospective purchaser of the true nature of the food, but also that the label as a whole, including any illustrations, must convey to the purchaser a reasonably accurate and honest idea of what the food is. Moreover, this idea must be conveyed by what the purchaser sees on the front label, at a reasonable distance, within the first few seconds, or in short, under normal conditions of purchase. This is what in the United States is called "the law of first impression"; it is not a law in the strict sense at all, but numerous cases taken by the Food and Drugs Administration of that country have established it as a guide-line for judges who have to decide whether a product is mislabelled.

This attitude towards labelling has developed over the last thirty years or so because of the enormous increase in the production and sale of the pre-packed foods and the accompanying—indeed, the consequent—enormous increase in self-service food retailers. The modern housewife has to decide for herself what she will buy entirely on the evidence presented by the labels on the goods before her, without consulting the vendor as her grandmother would have done. Moreover, the latter would never have dreamed of buying a ready-prepared Irish Stew or Christmas Pudding, or even a Cake Mix; she would have bought the raw ingredients and made the compound food herself, and if the ingredients were wrongly proportioned it was her own fault, whereas her grand-daughter does not even know what the ingredients are, unless she is the exceptional sort that reads all the small type. The vague and non-

quantitative wording of parts of the Labelling of Food Regulations, requiring, for example, only that certain important words shall be "conspicuous" without defining that word, causes discussions and indeed disputes between manufacturers and Local Authorities following criticisms of labels by Public Analysts; but if all manufacturers would accept and conform with the *spirit* of the Regulations by looking at their labels in the light of the "Law of first impression", a great deal of time and trouble would be saved by all concerned and the consumer we all want to serve would be much benefited.

CONCLUSION

In principle, the Public Analyst's duty is easy to define—it is to examine and report on all samples submitted to him under the Food and Drugs Act, whether it be by the authorised officer of a Local Authority or by the private citizen, and thereby to protect purchasers and consumers from attacks upon either their health or their pockets. In practice, in spite of the wide powers provided by the Act and a host of Regulations made thereunder, the task leads him into consideration of many complicated and subtle problems and forces him to make many difficult decisions, which are made no easier by imperfections in the wording of the laws he has to try to interpret. I am not in a position to form an impartial judgment, but I think that a review of the work of Public Analysts over the last hundred years, and in particular—coming down to modern times—since the passing of the Food and Drugs Act, 1955, will show that on the whole they have made a good job of it.