

# DEVELOPMENTS IN BAKERY FATS

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If we look at the trends and changes that have taken place over the past year or so with regard to fats they can generally be divided into two categories - reduction or elimination of trans fats and reduction of fat levels in general. Not surprisingly these have been the main areas of recent innovation and development in bakery fats.

## Reduction and elimination of trans fatty acids

The replacement of hydrogenated fats by fats containing almost zero trans fatty acids has long been a major target for many manufacturers. A recent report published by the Consumers' Association has highlighted that, despite efforts by the industry to reduce levels of trans fats there are still areas in both bakery products and foodservice products where high levels of trans fats are present. Progress is being made - trans fat consumption has almost halved between 1985 and 2000. We should remember that even eliminating hydrogenated fats completely from products will not reduce trans fat consumption to zero because these fats are also naturally present in dairy products. Nevertheless, the oils and fats manufacturers have made great strides in developing alternatives which are effectively free of trans fatty acids.

The replacement of partially hydrogenated frying oils is fairly easy to achieve and, in many foodservice areas this has already happened. There is a potential cost to this, however, in that the non-hydrogenated oils which are being used have a lower oxidative stability and potentially, therefore, a shorter fry-life. However, oils such as *Durkex LC-200* from **Loders Croklaan** are an excellent compromise by being non-hydrogenated and having some 5-10 times higher oxidative stability than simple liquid oils.

In bakery products, one of the main requirements is that the fat, be it a dough fat, pastry fat or cream fat, should have some structure and solidity. Without the use of hydrogenation, this can only be achieved by using oils such as palm oil, palm kernel oil and coconut oil. Of these palm oil is the most important and the most versatile. **Loders Croklaan** have responded to this by beginning construction of Europe's largest palm oil refinery in Rotterdam. This is due to come on stream in 2005 and will be a major source of trans-free fats for the bakery industry. Recognising, however, that the industry also needs products now, **Loders Croklaan** have made significant developments to their well-known *Biscuitine* range of products by including non-hydrogenated alternatives which have a broad use in bakery applications, especially as filling creams. They have also developed low-trans versions of their *Couva* confectionery and bakery coating fats. They have also recently rebranded their range of bakery inclusions as *SensoryEffects* whilst, at the same time, replacing the fat base by a non-hydrogenated fat and ensuring that the colours and flavours used are all-natural. *Presdough*, also from **Loders Croklaan**, is a non-hydrogenated dough fat which

is used especially in chocolate coated bakery products because it imparts anti-fat bloom properties to the chocolate.

**Aarhus United** have responded to the need to reduce trans fats by launching the *Cisao* range of products as baking margarines for use in puff pastry, sponge cake and cookies. A range of products with different melting profiles for different applications is available. This range is in addition to the non-trans bakery fats already produced by Aarhus United such as *Vegao NT*, an all-purpose shortening for bread, cakes, biscuits and crackers. *Filcao NT* and *Filcao W NT* are both non-trans filling cream fats from Aarhus United. *Filcao NT* is normally used in biscuit fillings having quick melting characteristics and good temperature stability at higher ambient temperatures; *Filcao W NT* gives a lighter, yet firm, cream more suitable for cake applications such as Swiss Rolls.

**Karlshamns** have recently launched *Akobisc R* for use as an alternative to normal trans-containing bakery margarines. Not only is *Akobisc R* non-hydrogenated but it is easier to handle than a normal bakery margarine in that it is pumped directly from the storage tank, thus eliminating much of the manual handling and waste disposal associated with boxed bakery margarines. Its composition is such that oil exudation from, for example, a biscuit produced with *Akobisc R* is greatly reduced. As much of the fat bloom found on chocolate coated biscuits is a result of fat migrating from the biscuit, Karlshamns claim that the product gives a built-in protection against such bloom formation.

### Reduction of total fat

With manufacturers under pressure from the UK Government to reduce total fat levels the use of fat replacers is becoming an area of interest. It is quite timely then that the EU have given approval to **Danisco** for the use of salatrim in bakery and confectionery products. Salatrim is a generic name for ingredients with short and long-chain acid triglyceride molecules. The short chain acids are acetic, propionic and butyric acids; the long chain acid is mainly stearic acid. Whilst the stearic acid is derived from a fully hydrogenated vegetable oil, the product itself is trans-free. The range of products produced by Danisco is branded *Benefat*. Unlike traditional fats which contain 9 kCal/g energy, *Benefat* contains only 6kCal/g energy whilst still maintaining the same taste, texture and mouthfeel as full-fat products.

### What of the future?

Clearly the trends of trans fat reduction and total fat reduction are still going to be with us and so there will undoubtedly be further development in these areas. A possible area of future development could be in the incorporation of plant sterols into bakery fats. At present these are mainly used in consumer products such as spreads, yoghurts with Unilever Bestfoods (with Flora pro-activ and Becel pro-activ) and the Finniah company, Raisio (with Benecol) leading the way. However another Finnish company, Teriaka, has had a favourable opinion from the EU on its product, Diminicol which also contains plant sterols. The benefit of including products such as these in the diet is that they have been clinically shown to significantly reduce cholesterol. Coupling these with the beneficial effects on cholesterol of moving from trans fats to non-trans fats could pave the way for a whole new range of healthier bakery fats.

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