

Taste meets functionality

INCREASING PRICES FOR BUTTER AND RISING CONCERN ABOUT LOW TRANS FATS HAVE MOVED FAT MÉLANGE PRODUCTS INTO THE FOCUS

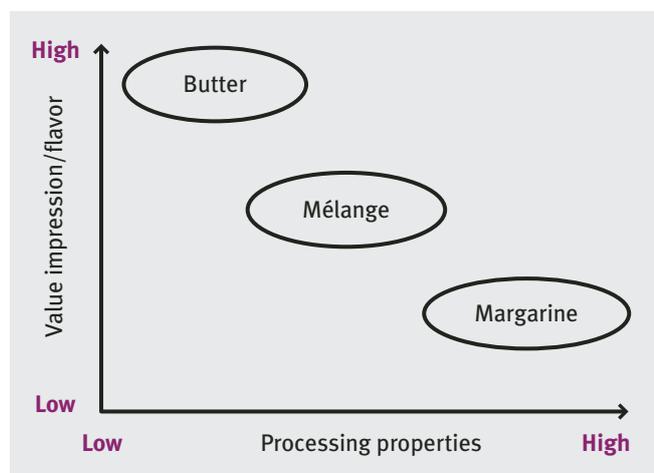
++ author Sonja Strauch, Market Manager Industrial Solutions at BakeMark Deutschland GmbH; e-mail: Sonja.Strauch@bakemark.de



✚ Mélange products are mixed fat preparations consisting of butter fat, vegetable oils and vegetable fats. Most of the commercially available mélange products have a fat content of about 80%. The ratios of butter fat and vegetable fat components vary depending on the application, the product and the producer. Mélange products combine the good processing properties of margarine with the typical butter flavor. There are an adequate number of products available on the market to meet all technological needs.

tive products. The decreasing availability of butter was compensated by the use of mélanges. The final products still have a distinct butter flavor. If required, butter could also be labeled as a value-adding compound.

Mélange products evolved from their market niche and displayed their strengths.

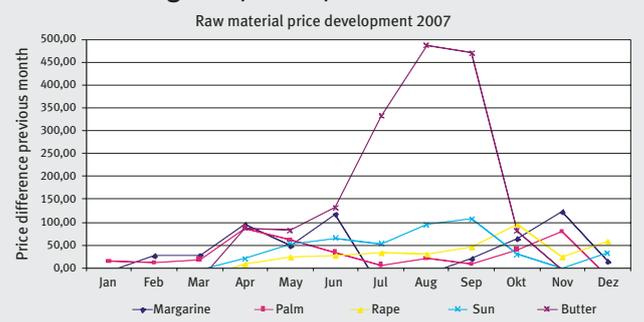


Market development

In 2007, a wealth of mélange products was launched. Economical reasons were the governing factors behind the increasing use of mélanges.

Prices for butter and concentrated butter soared in 2007 and as a result the producers and users had to look for alterna-

Comparison of raw material prices in 2007 for margarine/butter/different crude oils



Raw materials and processing of mélange products

Raw materials and processing steps needed for mélange products are:

For the production of butter:

- + raw milk
- + centrifugation
- + separation of cream and skimmed milk
- + pasteurization of cream
- + cooling down to 13-16 °C
- + addition of lactic acid bacteria

- + ripening time of 19-25 h at pre-set changing temperatures (8-22 °C)
- + separation of buttermilk (milk proteins dissolved in water) to yield fat globules (grains).
- + kneading of the grains in churning machines to yield butter

For the production of margarine:

- + breaking and milling of the initial raw materials such as oil palm fruits, rape seeds, soy beans or sunflower seeds
- + pressing or extracting of the puree
- + refining and filtration of the crude oil
- + steaming of the raffinates
- + selection of adequate raffinates/oils
- + mixing of water and fat phase with functional ingredients
- + crystallization process and shaping
- + packing and ripening

Special margarines are used for a lot of different applications:

- + laminated baked goods
- + batters
- + yeast-raised pastries
- + crèmes

Product properties

Margarine and butter differ significantly in their product properties. Mélange products using a combination of both



types of fats have the advantage of delivering the typical butter flavor and allowing the use of the processing properties of special margarine in the production of baked goods (see table on next page).

Mélanges market

The requirements have been determined within the scope of market research including surveys among users and final consumers. Based on these results, the mélange products have been developed. To the users of mélange products, the following properties are important:

- + Mélanges must be easy to process.
- + Mélanges must deliver high performance.
- + Mélanges must show a tolerant processing behavior, similar to margarine.
- + Mélanges must provide a flavor similar to that of butter.
- + Mélanges must yield convincing end products.
- + Mélange products must add value to the company. ▶

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Comparison of butter and margarine in bakery applications

	Butter	Margarine
Delivery temperature	7°C	15°C
Storage temperature	7°C	15°C
Minimum shelf life	12 weeks	18 weeks
Melting range	varies, depending on season	defined (fixed melting curve)
Viscosity	varies, depending on season	defined
Processing	laborious, specific handling required	easier due to standardization

+ The product formats mostly desired by the users are sticks or blocks which are easy to handle on their respective production lines.

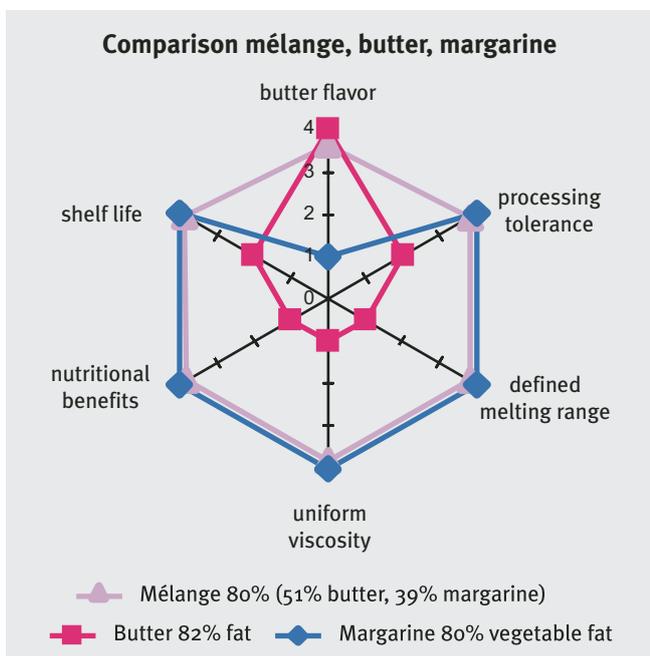
The final consumer, on the other hand, considers butter to be a superior flavoring agent but one that is a source of animal fats. Such fats are considered to be less healthy than vegetable fats and oils due to the high portion of saturated fatty acids and the low share of unsaturated fatty acids. Consumer polls revealed that, in general, margarine is considered to be the healthier product over butter.

Consumers ask for luxury bakery products with an adequate price-performance ratio.

Mélange products meet the consumers' requirements of economical pricing for high quality baked goods.

For the producer of the baked goods, it is important to note that a mélange product with 20% butter in the fat phase only costs about half that of butter. A mélange product with 51% butter in the fat phase is still 1/3 cheaper than butter.

The following figure shows the differences between butter, special margarine and mélange with all three used for laminating of dough.



When using a mélange product, the butter portion can be labeled and therefore results in a higher added value of the final product. The targeted selection of vegetable fats and oils determines the functionality. Similar to special margarines, different fat compositions and tailor-made formulations are provided for use on industrial lines.

Summary

Mélange products combine the sensory and functional benefits of butter and margarine. They have a higher processing tolerance and are easier to process than pure butter products. Added to that, the consumer appreciates the products more that are made with mélanges because of the higher content of mono- and polyunsaturated fatty acids. Mélange products offer a more favorable combination of raw materials. Furthermore, economically priced end products without shortcomings in terms of flavor can be offered to the final consumer. Mélange products are an alternative to butter and margarines. They can be used for a broad range of applications and support the production of premium products which are in high demand by the final consumers. +++

Mélange products by BakeMark

BakeMark, a subsidiary of CSM, is one of the suppliers of mélange products. The company offers a new generation of mélange products. The amount of trans-fatty acids is below 2% for all products. Typical mélange products for industrial applications are for example:

- + Sélection 20 Rouge: 20% butter in the fat phase. Ideal for doughs and batters.
- + Sélection 20 Bistre: 20% butter in the fat phase. Ideal for all Danish pastry doughs.
- + Sélection 20 Bleu: 20% butter in the fat phase. Ideal for all puff pastry doughs.
- + Sélection 51 Rouge: 51% butter in the fat phase. Ideal for doughs and batters.
- + Sélection 51 Bistre: 51% butter in the fat phase. Ideal for Danish pastry dough.
- + Sélection 51 Bleu: 51% butter in the fat phase. Ideal for all puff pastry doughs. +++