

9 Do CBEs affect the taste of chocolate ?

No, not at all. Differences in taste and texture of chocolate are dependent on the relative proportions of cocoa, milk and sugar, the type of cocoa beans used, the particle size and upon how the ingredients are processed. CBEs themselves are neutral in taste.

10 Are there any health aspects to the use of vegetable fats other than cocoa butter ?

None whatsoever. As explained above, CBEs are vegetable fats, both physically and in terms of molecular structure, identical to cocoa butter. Thus the claim, for example, that the saturated fat in cocoa butter does not raise blood cholesterol applies equally to CBEs. In general, vegetable fats form part of a balanced diet and are used in a wide variety of food products such as, in addition to confectionery, margarines, bakery products, soups and cereals.

Facts about *FEDIOL*:

FEDIOL is the Seed Crushers' and Oil Processors' Federation in the EC.

It represents an industry that:

- crushes about 27 million tonnes of oilseeds per year,
- produces more than 7 million tonnes of edible oils and fats as well as 17 million tonnes of oilseed meals per year,
- imports large quantities of tropical nuts and crude oils which are processed into a range of speciality products for other food industries,
- employs about 20,000 people in approx. 150 production facilities in the EU,
- has an annual turnover of more than 10 billion ECU.

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Vegetable Fats in Chocolate

THE FACTS

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1 What are the fats that can be used in chocolate ?

The fats that are suitable for use in chocolate are vegetable fats such as cocoa butter and cocoa butter equivalents (CBEs). Of course, in milk chocolate milk fat is also used.

2 What are cocoa butter equivalents ?

Cocoa butter equivalents are combinations of other vegetable fats that have physical properties and a molecular structure that are virtually identical to those of cocoa butter.

3 What fats or "combinations of fats" are used to make up cocoa butter equivalents ?

The main fats that are combined in CBEs are produced from shea, illipe, sal and palm. All of these have a tropical origin:

Shea nuts come from the shea tree which grows wild in West Africa. Illipe comes from illipe nuts which grow in Borneo. Sal nuts grow in India. Palm oil comes primarily from Malaysia and Indonesia.

The CBE manufacturer uses combinations of fractions of these oils and fats to produce CBEs.

4 But can't any fat, such as soya or rape, be used to make up a CBE ?

No, because the fats used have to match cocoa butter in order to be compatible with, and to perform in the same way as, cocoa butter. Soya and rape are not suitable in this respect.

Of course, as with all food ingredients, new processing methods are being developed to produce the fats that the food industry re-

quires. The use of enzymes as processing aids is one method which has been traditionally popular in many industries such as those for baking, brewing, wine, juices and dairy products. Specific types of sunflower oil can be processed in this way and the resulting fats are used to advantage in dietetic products. Similar fats can be used as components in CBEs but, on present evidence, the economics strongly favour the fats mentioned above under point 3.

5 Do CBEs affect the quality of chocolate ?

Certainly not in any negative way. Consumers in the UK and Scandinavia have enjoyed chocolate containing CBEs for decades. As ingredients, CBEs are nutritionally equivalent to cocoa butter so there is no effect on the quality of chocolate from this point of view. However, CBEs can improve the quality of chocolate in the ways described in the answer to question 8 below.

6 Are these fats a lot cheaper than cocoa butter ?

Since shea, illipe and sal are all wild crops, the availability can vary significantly from year to year. The price is largely determined by supply and demand as it is with cocoa beans. Palm oil in its crude form is approximately 15% of the price of crude cocoa butter.

However, in order to achieve the required physical and compositional characteristics (i.e. similar to those of cocoa butter), all these fats have to be fractionated and, in the case of palm oil, the process has to be repeated twice. Subsequently they undergo a refining process. The expensive nature of these processes brings the costs much closer to cocoa butter.

7 What are the prices of CBEs in relation to cocoa butter ?

They can vary from approximately 30% cheaper than cocoa butter for some products to up to 10% more expensive than cocoa butter for CBEs with special qualities.

8 What sort of special qualities can CBEs have ?

In particular blends they:

- enable the chocolate manufacturer to make more consistent products by levelling out the variable hardness of cocoa butter
- improve the stability of the fat phase of chocolate products, thereby combating undesired fat migration from fillings to "coatings" of chocolate.
- prevent the formation of fat bloom, a white discolouration generated, for example, by heat. Fat bloom, common in summer, is a major source of consumer complaints.
- improve hardness and "snap", especially in chocolate products with a high milk content. Dairy fats are soft and a small amount of CBE can correct this.
- help to maintain texture and "gloss", thereby enhancing consumer appeal.
- facilitate the efficient manufacture of chocolate by influencing such parameters as tempering behaviour, viscosity and the rate of crystallization.