19.7 Environmental aspects

Both CBS fats and CBR fats require palm or palm kernel oil for their manufacture. Many other consumer products, such as soap and soap powders, personal care products, margarine and biodiesel for example, also use large quantities of palm oil for their manufacture. The demand for palm and palm kernel oil has resulted in vast plantations in south east Asia, primarily in Malaysia and later in Indonesia. This has caused large areas of deforestation resulting in the loss of rain forest; the loss of habitat for many species, in particular the Orang Utang, and a dependency on palm and the commodity trading price for palm for income amongst the local populations. As people become aware through social media, the pressure for palm cultivation to be sustainable has grown. The Roundtable on Sustainable Palm Oil (RSPO) was formed involving palm growers, palm oil processors, environmental groups, social non-government organisations, consumer goods manufacturers, retailers, financiers and investors in 2004. The RSPO vision states; "RSPO will transform markets to make sustainable palm oil the norm". As of 2014, 16% of world palm oil production is certified as sustainable by the RSPO. As consumers become more aware, it is essential for the manufacturers of chocolate compounds to ensure the CBR and CBS fats they use are sustainable.

Similar concerns exist with cocoa but these are not unique to chocolate compounds and exist for chocolate too. Sustainable cocoa is becoming more prevalent; however, the certification is spread across several independent bodies. Cocoa can be certified as sustainable by UTZ, the Rainforest Alliance and Fairtrade, and some major manufacturers run their own sustainability programmes. Cocoa powder is the main cocoa ingredient used in chocolate compounds and it is significantly harder to source cocoa powder that is certified sustainable than it is to source cacao beans or cocoa mass. It is advisable to ensure the cocoa used is certified as sustainable (see Chapter 2).

19.8 Summary of the properties of compound coatings

There are advantages and disadvantages to each of the different types of compounds and these are summarised in Table 19.1.

19.9 The future of compound coatings

The need and desire to manufacture compound chocolate was initially driven by cost benefits which needed to be balanced against the compromise with flavour when comparing to chocolate. In the future these cost benefits are only likely to become greater as the demand for cocoa increases from developing markets and crops are depleted by disease. Unless cacao growers can produce varieties with

Table 19.1 Summary of the advantages and disadvantages of the different types of compounds.

	Type of chocolate compound		
	CBE "super" compound	**CBR compound**	**CBS compound**
Advantages	Most similar to chocolate in terms of flavour and texture. Can be used with cocoa mass. Can be used for any purpose that chocolate is also used, for example, moulding, enrobing, depositing.	Can be used with cocoa mass (non-lauric). Do not require tempering, hence simple to use and lower machinery investment. Higher usage temperature allows reduced fat content in comparison to chocolate. Can tolerate contamination from cocoa butter without blooming, can use same equipment as used for chocolate manufacture.	Good snap and sharp melting point similar to cocoa butter. Do not require tempering, hence simple to use and lower machinery investment. Can be used for any purpose that chocolate is also used for including moulding. Higher usage temperature allows reduced fat content in comparison to chocolate. Less likely to contain trans-fat than CBR compounds.
Disadvantages	Needs to be tempered. CBE is the highest ingredient cost of compound chocolate fat options. Needs greater investment in machinery as tempering is required. Usually contains palm oil, sustainable sourcing options are available.	Difficult to use for moulding due to poor contraction. Texture different from chocolate, poor snap. Often contain trans-fat. Usually contains palm oil, sustainable sourcing options are available.	Do not tolerate cocoa butter, will bloom if cocoa butter content above 5%. Cocoa mass cannot be used in manufacture giving inferior flavour. Must be made on separate machinery to that used for chocolate or machines must be thoroughly cleaned. Usually contain palm kernel oil. Sustainable sourcing options are available.

much greater yields than currently exist, then the prices will continue to rise or growers will turn to alternative tropical crops for greater income, depleting cacao crops further. As manufacturing methods and flavour of compound chocolates improve, the cost differential in comparison to chocolate will make them a more desirable option.

As the fat manufacturers develop healthier alternatives to the traditional CBR and CBS fats, *trans* fat issues disappear and saturated fat contents reduce; then the point is likely to come when they appear healthier than cocoa butter