ingredients

The quality of your finished soap is directly dependent on the quality of the raw ingredients used in making it as well as the equipment, your commitment and the standard of your workmanship. Good quality soap engages the senses, in that it looks, smells and feels wonderful. Always use the best and finest raw materials you can afford. Oils and fats should smell clean and fresh.

Clean fresh spring water is best but in the absence of this you can use distilled or tap water. You can get good quality sodium hydroxide (caustic soda) from any hardware shop, supermarket or corner shop. Do not use drain cleaner, please. Potassium hydroxide is a little difficult to obtain so it is best to buy direct from a reputable soap making supply outlet, see *resources* page 159.

Use only very good quality essential oils.

Personalise your soap with your own combination of oils, additives, scents and colourings.

the basic oils

fig 6: basic oils a) coconut oil, b) palm oil, c) olive oil

Any oil or fat can be used to make soap; however, the three basic oils I shall be using in the recipes in this book are coconut, olive and palm. The combination of these three oils as a base provides an excellent starting point because of their unique characteristics.

When formulating your own creations just remember to start with the end in mind. Give some thought to the type of soap you want and to whom it is to be presented and then select the oils and fats accordingly.

super fatting oils

Super fatting is a great way to ensure a creamy, moisturising and nourishing soap. It is best to use the highest-quality oils you can afford for this purpose. The oils are used in small quantities and added to the soap mixture at trace just before pouring the soap into the mould. Any oil can be used including:

jojoba
This is really a wax and should be used in small quantity. It is best to use the deodorised type.

hemp
This lovely green, nutty oil goes rancid very quickly. It is best to buy it in small quantities.

cocoa butter
Offers soothing and moisturising qualities to the soap.

shea butter
Has similar qualities to cocoa butter.

unsaturated oils

These are usually liquid at room temperature. They tend to be high in linoleic and oleic acids. Oils high in linolenic acid are prone to rancidity and care should be given to the storage of these oils. Always use fresh clean oils to enable your soaps to have a long shelf life.

almond (*Prunus amygdalus dulcis*)
This light and nourishing oil is used mainly for super-fatting. If using as a core oil in your recipe it is best to keep its proportion below 30 per cent of the total oils to ensure you produce a hard bar.

avocado (*Persea americana*)
Obtained from the pulp of the avocado pear it is used mainly for superfatting. It is nourishing and easily absorbed by the skin. A minimum of 5 per cent of your total oils will improve the mildness of your soap.

castor (*Ricinus communis*)
Castor oil is mild, thick and viscous and is easily absorbed by the skin. It is a peculiar oil, in that it is part alcohol and part oil. Castor has a long shelf life. The use of as little as 5 per cent of your total oils will ensure creamy fluffy bubbles. If used above 5 per cent it is best to include a higher proportion of saturated fats such as palm oil to balance the blend.

corn (*Zea mays*)
This light oil is good to use as a base oil. It is cheap and easily obtainable. Keep the proportion of corn oil below 20 per cent of your total oils. It can improve the quality of the lather in a well-balanced recipe.

olive (*Olea europaea*)
There are various grades of olive oil but the best for soap making is pomace. It can be used as the core oil in your recipe up to 100 per cent. It is a very good moisturiser.

sunflower (*Helianthus annuus*)
Sunflower oil is the non-volatile oil expressed from sunflower seeds. It is a light oil with good emollient qualities and a high vitamin E content. It is best to use at a maximum of 20 per cent of the total oil content of a recipe.

saturated oils

These are usually solid at room temperature.

cocoa butter (*Theobroma cacao*)
This butter is the pale yellow, edible natural fat of the cocoa bean. It is one of the most stable fats known with natural antioxidants that prevent rancidity giving it a long storage life of up to five years. It is a popular ingredient in skin care products, including soaps, giving a sweet fragrance, smooth texture, an emollient quality and produces hard soap. Use cocoa butter as a super fatting ingredient.

coconut oil (*Cocos nucifera*)
This core soap-making oil hardens and gives big bubbles to soap. Do not use more than 30 per cent of the total oils and fats as coconut oil as it tends to make the skin dry.

palm oil (*Elaeis guineensis*)
Palm oil is the edible oil obtained from the fruit of the palm tree. In its natural form the oil is red/orange in colour as a result of its high beta-carotene content. Palm oil is a core soap-making oil that gives hardness to soaps.

There is growing concern about deforestation of tropical rainforest in Central America and peatlands in South East Asia to provide land for palm oil plantations as a result of the huge demand for palm oil for food, cosmetics and biofuels. This growing demand, particularly for biofuels, will have severe environmental consequences in terms of biodiversity, local communities and climate change as palm oil plantations extend further into forested areas.

In view of this, efforts are being made to control deforestation through the Roundtable on Sustainable Palm Oil (RSPO) which was established in 2001 to set ecological and ethical standards for the production of palm oil.

As environmentally-aware soap makers we can do our bit to help by ensuring that we buy and use palm oil from suppliers who source their oil from a sustainable source.

palm kernel oil (*Elaeis guineensis*)
Palm kernel is the edible oil obtained from the seed of the palm fruit. It has similar properties to coconut oil.

shea butter (*Butyrospermum parkii*)
Shea butter is renowned for its cosmetic properties as an emollient and moisturiser. It is easily absorbed into the skin without leaving a greasy feeling. In soap making it is mainly used for super fatting the soap. It is gentle enough to use on babies and for people with sensitive skin. Melt and add the warm oil to the soap mixture just before pouring it into the mould.

soap characteristics offered by common fats and oils

Fats and Oils	Fatty Acids	Properties	Lather Characteristics	Cleansing Properties
Almond	Oleic 80 % Linoleic 20 % Palmitic 8 % Stearic 2 %	Very Mild. Conditioning and Moisturising	Close, Persistent and Stable	Good
Babaseu	Lauric 50 % Myristic 15 % Palmitic 11 %	Mild and Moisturising	Fluffy	Very Good
Castor	Ricinoleic 90 % Linoleic 4 % Oleic 7 %	Mild Conditioning Moisturising	Thick, Lasting, Fluffy and Stable	Fair
Cocoa Butter	Stearic 38 % Oleic 36 % Palmitic 30 % Linoleic 3 %	Moisturising and Conditioning	Stable	Fair
Coconut	Lauric 54 % Myristic 23 % Palmitic 11 % Capric 6 %	Drying when used in large amounts	Fluffy	Very Good
Corn	Linoleic 54 % Oleic 37 % Palmitic 14 % Stearic 3 %	Conditioning	Stable	Fair
Olive	Oleic 80 % Palmitic 14 % Linoleic 15 % Stearic 5 %	Conditioning and Moisturising	Close and Persistent	Good
Palm	Linoleic 11 % Myristic 1 % Oleic 39 % Palmitic 44 % Stearic 5 %	Mild and Moisturising	Lasting, Close, Stable	Very Good
Palm Kernel	Lauric 47 % Myristic 14 % Oleic 18 % Palmitic 9 %	Can be drying when used in large amounts	Fluffy	Very Good
Shea Butter	Linoleic 8 % Oleic 55 % Palmitic 7 % Stearic 45 %	Conditioning and Moisturising	Stable	Fair
Sunflower	Linoleic 74 % Oleic 40 % Palmitic 9 % Stearic 7 %	Conditioning and Moisturising	Close and persistant	Good

additives

fig 7: a) lemongrass, b) calendula petals, c) cinnamon sticks, d) satsuma peels, e) star anise, f) nutmeg, g) beeswax, h) shea butter, i) cocoa butter, j) oatmeal, k) lavender, l) Eucalyptus leaves

Using additives is a good way to personalise and add texture to your soap. The possibilities are endless. This includes oats, cornmeal, rice, flower petals, flours, honey, milk and other stuff you can find from your kitchen cupboard. These also add colour and scent to the soap.

colourings

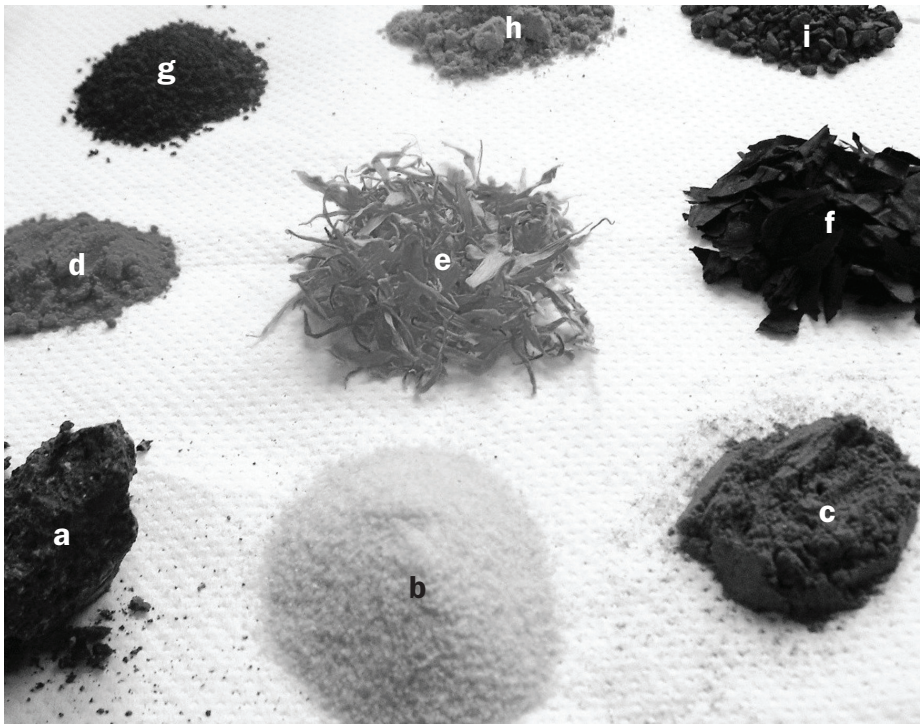

fig 8: a) chocolate sticks, b) corn meal c) cinnamon powder, d) turmeric powder, e) calendula petals, f) alkanet root, g) tea, h) ginger powder, i) madder root

Colours add life and dimension to your soap. Natural colourants do not offer the bright colourful hues you tend to achieve by using synthetic products but they are, nonetheless, beautiful. Natural oxidation and the alkalinity of handmade soap tend to change most bio-source colours. It is a good idea to experiment with powdered vegetable matter which you can buy or make yourself using a grinder.

Some natural colourants that can be used to colour soap are listed overleaf and may already be in your kitchen cupboard, or they can be easily obtained from a reputable supplier of soap-making materials.

- alkanet root – purple to muted blue to grey (depending on the pH of the soap)
- annatto – yellow to orange
- beetroot – muted pink to red to brown
- calendula (marigold) petals – yellow
- carrot powder – orange
- cocoa powder – brown
- coffee – brown to black
- curry powder – yellow
- dill – green
- henna – olive to drab green to brown
- kelp – green
- madder – pink to red
- olive leaf powder – olive green
- paprika – salmon pink with speckles
- poppy seeds – blue grey to light black specks
- pumice – grey
- spinach – green
- tea – tan to brown