Oils and butters are the heart of your soap and how you choose and combine them is crucial to the end product. As a crafter, you can follow the project recipes, but if you are a soap maker who is hungry for knowledge and who wants to create your own formulæ so that you can create a business from your hobby, a deeper understanding of oils and how they function is essential.

Don’t panic about the chemistry – I have simplified everything so as to be easy to understand and I will warn you when you can get off the bus and proceed to the fun parts – the projects -without the deeper knowledge. The information below is for you to dip into as and when you need it , depending on what oils and butters you are able to source easily and affordably.

Oils and butters or fats are different to each other only in that one is a liquid at room temperature and one is a solid. Usually fats are animal derived, butters are plant, vegetable or nut derived and oils are vegetable, but not always. Some oils are artificially induced to stay solid at room temperature – like margarine. This is done through a process of hydrogenation – which means the oils are pumped with hydrogen to change their molecular structure. I never use any hydrogenated fats in cooking or in soap making. I see them as artificial, foreign and harmful, with warped confused molecular structures that can only be bad for my body!

There are so many different types of oils and fats and virtually all of them (any you can imagine) can be made into soap or in chemistry speak – have the ability to saponify. They all have unique properties based on their molecular structure (their fatty acid chains) and how they behave, and hence the art and science of soap making rests in the careful selection and combination of various oils, bringing each one’s properties, benefits and features to the soap making party – some bring hardness of bar, some bring lathering ability, some hold the lather in place once it is formed , some bring great moisturising properties, some bring slip and glide, some bring various antioxidants, vitamins, omegas etc. I have a table for you of the broad properties, benefits and pitfalls of some of the more popular oils.

You may also chose an oil or fat based on it being easy to source, affordability or one which is grown and produced near you and which will offer you a low carbon footprint option with a clear environmental sustainability policy and/or benefits to local communities.

The oils that we use at RAIN, have been carefully researched to bring the best skin nourishing properties, but also purchased with a Fair Trade conscience and ethic. We use wild harvested African oils, not only because they are organic, pesticide and fertiliser free, but because they support impoverished communities and are hand harvested from wild trees by women who earn their livelihood from selling these oil bearing seeds. Our base oils also come from farms near us – giving us a low impact carbon footprint.
Sadly, we don’t have palm oil in South Africa, but we source our palm oil from a one hundred year old plantation in Malaysia, where firm environmental policies are in place and where the farmers are founder members of the Round Table on Sustainable Palm Oil Production (RSPO) which is an organisation devoted to sustainable palm oil production and are actively involved in rehabilitation of endangered species – especially the Orang-utans.

Research your sources and make sure that you are buying wisely and supporting global ethics when you spend your hard earned money, and if you want to sell goods with a clear conscience.

**TIP:** Soap CAN be made using only one fat or oil, but inevitably, the soap may lack certain qualities – for example delivering a good frothy fluffy lather, or be soft and sticky, or be drying to your skin.

**Tallow:**
A note on animal fat (tallow):  Tallow is rendered (boiled down) from the fat of dead animals. It is thoroughly disgusting and stinky repulsive process.
Rain is Beauty without Cruelty accredited and I as the founder have been a vegetarian for 35 years.

**WE AT RAIN DO NOT USE TALLOW!**

I personally abhor the thought of washing my body with the fat of a dead animal, and so, in this book, I am not even going to include tallow as an option in soap making. If you want to know how to work with tallow – I am sorry, but please Google it!
Below is a list of the most commonly used oils in soap making. There are many others. In order to be able to use them in your soap formula, you will need to find out your oil’s SAP value.
Check on the Saponification table (another link) or ask the oil supplier for a Material Safety data sheet. SAP values can vary according to regions where the oils are harvested and their fatty acid contents. But don’t worry – the table I have included is enough detail for you to be able to make excellent soap. If your chosen oil is not on the table, it does not mean it can’t be used. Research its saponification value for both sodium hydroxide and potassium hydroxide, so that you can use it for both solid and liquid soap making.
I have stated the suggested use for each oil, in one of three categories:

**Core Oil** – forming a large portion of your formula
**Supplementary Oil** – forming a small portion of your formula
**Super fatting** – used as an additive.
This is where you don’t allow for the weight of that particular oil when you calculate how much lye you are going to need. It is not factored into your lye calculator at all. It gets added in a small quantity – usually around 15-20ml per kilogram of oils - at the end of the trace when the lye is at its least aggressive – thereby preserving the oils properties fully, and technically allowing it to remain in the soap as an unsaponified oil. This is done to carry properties through to the end soap and also to make it extra creamy and moisturising – giving you a much milder soap, as it cleans but does not strip the skin of its protective hydrophobic film barrier.
The chosen ingredient for super fatting should be in a melted form before adding and cooled to roughly room temperature of 24 degrees when you add it at trace. Add together with the fragrance oils.

You can also super fat your soap by taking a 5% lye discount on the lye calculator for the initial formula, rather than adding the extra fats at the end. This means you have 5% less lye particles to marry with your soap particles during saponification, which will leave some of them floating around unattached thereby adding creaminess and moisture to your bar, instead of a fully saponified bar which could be on the harsh side.

You can also choose to do both – take a 2-5% lye discount (which I always do), as well as super fat at trace, as long as you don’t exceed an overall total of 6-8% discount. Remember that this will affect the shelf life of your soaps, as the unsaponified oils, while delivering a superbly rich, creamy moisturising mild bar, will also eventually turn rancid and begin to smell like old stale oil, and show browny orange spots where the oil is going rancid. Fully saponified soaps can last for decades, but super fatted soap only a year or three – depending on the oils used and degree of super fatting.

Most Commonly Used Oils

Coconut Oil - INCI NAME: Cocos nucifera (coconut) oil
Suggested Use:

Core Oil – use at 20-30% of your formula
The coconut palm produces coconut oil which is pressed from the dried flesh of coconuts – the copra – this is one of the core oils in soap making. Keep to the One Third rules. No more than one third of your formula should consist of coconut oil, or it will be quite drying to the skin. (Yes – coconut oil is an anomaly – a little is moisturising and too much is drying to the skin!)

It can typically be found at speciality delicatessen stores, Asian supermarkets, wholesale bakery suppliers and even pharmacies - although the latter, at a premium price.

Coconut oil comes in quite a few various types:

Virgin - this is similar in fatty acid profile to the other versions of coconut oil, but it comes from the pressing of the wet coconut meat rather than from the dry coconut kernel. This may or may not use heat – if not, it is cold pressed. It has a real coconut smell and taste

Fractionated - a fraction of the coconut oil in which the long chain triglycerides are removed, resulting in an oil with a longer shelf life and higher relative concentrations of Capric acid and Caprylic acid – making it lighter and more effective as an antioxidant and a disinfectant. It ‘s lightness makes it more easily absorbed into skin and hair without adding heaviness, and the deeper penetration means it is more deeply moisturising. Commercial companies use this version of coconut oil to make a claim that the product is oil free. It has its own INCI name: Caprylic/capric triglyceride

Organic - no pesticides and chemicals used in the growing of the coconuts

Cold Pressed - the oil is extracted without the use of heat – preserving the properties of the oil. Usually quite expensive
Refined - has been bleached and deodorised and the taste and smell of coconut is no longer present. Different melt points - 76 degrees (24 degrees C), 92 degrees (33 degrees C), 110 degrees (43 degrees C). The one you’re most likely to find is the 76 degrees version. All are acceptable.

Soap Making Benefits:

• Low cost oil
• Good fluffy lather – even in cold water
• Quick to lather
• Whiteness of finished soap
• Good cleansing ability
• Adds excellent hardness to the bar
• Very long shelf life -2-4 years if stored properly
• Easy to source
• Highly stable oil
• Traces quickly
• Highly saturated, so soap does not go rancid quickly
• Use in combination with highly emollient oils to compensate for drying effect
• Strong odour but odour does not follow through into the end soap

Skin Benefits:

• Moisturising but becomes drying in high doses
• Helps repair radiation damage
• antibacterial
• Good for hair follicle penetration in shampoos and conditioners
• Aids skin elasticity
• Its lauric acid content is an antibacterial
• Contains ferulic acid which is a powerful antioxidant, and which reduces signs of ageing
• Reduces itching and inflammation, but it can clog pores and should not be used for acne skin
• Use the fractionated or virgin cold pressed for maximum skin benefit

INTERESTING FACT: in 2008, Virgin Atlantic Airways flew a Boeing 747 in a bio fuel trial powering one of its engines on a Coconut oil/Babassu oil mix!
Palm Oil (Malaysian) – INCI NAME: Elaeis guineensis (palm) oil

Suggested Use:

Core Oil - use at 20-40% of the formula

Palm Oil comes from the fruit pulp of a different kind of palm tree to the coconut palm. Palm oil is a core soap making oil. It grows in Malaysia but is controversial oil as it surrounded by emotional environmental impact issues. Growth in Malaysian palm oil production has decimated the habitats of many endangered species, the most emotive one being the Orang-utan. It is important to fully research your source of palm oil. Buy only from very old plantations (not new companies who are deforesting to get on the palm oil bandwagon), where the farmers have environmental policies in place and who are members of the RSPO (the Roundtable on Sustainable Palm Oil Production) – Google RSPO.org

Also bear in mind, those palm oil plantations provide much needed employment opportunities in a very poor region. Employment reduces poverty and improves social well being. There is always the flip side of the coin to consider when making a purchase.

It is available in various forms:

- Organic – no fertilisers or pesticides used in the growing of the palms
- Refined – processed to deodorise and bleach
- Unrefined – crude, unprocessed
- Partially Hydrogenated – pumped with hydrogen to get it to stay solid at room temperature. Not a natural or advisable option

Soap Making Benefits:

- Using only palm oil will produce a crumbly soap – is at its best performance when used in combination with other oils
- It is inexpensive
- Good shelf life – 12 months plus
- It is relatively easy to source
- Hardens the bar
- Gives body to the soap
- Produces a low to medium lather, but is slow to lather
- Traces quickly
- Vegetarian substitute for animal tallow

Skin Benefits:

- Mild cleanser
- Rich in antioxidants, Vitamin A and E
- Protects skin cells
Red Palm Oil (African Palm Oil) – INCI NAME: Elaeis guineensis (palm) fruit oil

Suggested Use:
Core Oil – use at 15-30% of the formula
This oil is red in colour, is pressed from the fruit pulp of the African Palm. Its red colour comes from its high beta carotene content. Palm kernel oil comes from the same tree but is pressed from the kernels within the fruit, and is not red in colour. As for the Malaysian Palm Oil production issues, there are also environmental issues around Red Palm Oil production, but less so than in Malaysia. Investigate your source before purchasing.

Soap Making Benefits:
• Using only red palm oil will produce a crumbly soap – is at its best performance when used in combination with other oils
• It is inexpensive
• It is not easy to source
• Hardens the bar
• Gives body to the soap
• Produces a mediocre lather
• Slow to lather
• Traces quickly
• Vegetarian substitute for animal tallow
• Medium shelf life – 12 months
• Not as saturated as palm kernel oil and coconut oil

Skin Benefits:
• Mild cleanser
• High vitamin E and antioxidants
• Essential fatty acids, Omega 6 and 3
• Free radical scavenger
• One of the richest sources of carotenoids due to its extremely high beta carotene content. Carotenoids offer some of the best protection from UV ray damage and hence premature ageing.
• High in Vitamin E which helps reduce fine wrinkle lines with continued use. Also helps reduce skin scarring
• It has 15 times more Vitamin A than carrots and 300 times more than tomatoes.
Palm Kernel Oil – INCI NAME: Elaeis guineensis (palm) kernel oil

Suggested Use:
Core Oil – use at 15-30% of the formula
This oil comes from the kernels within the fruit of a species of palm different to coconut oil palms.

Soap Making Benefits:
• Unlike palm oil, palm kernel produces really great lathering abilities
• Whiteness of the bar
• Contributes excellent hardness to the bar
• Unpleasant odour which can transfer to the final bar in higher percentages
• Lathers quickly and easily to a creamy lather
• For use in seawater increase the concentration to 60% of the formula
• High glycerine yield
• More saturated than palm oil
• Good shelf life – 12 months plus
• High in lauric and myristic fatty acids – making it perfect for soaps

Skin Benefits:
• Similar to coconut oil – highly moisturising in small doses and drying in large doses
• Humectant properties due its high glycerine yield

Sunflower Oil – INCI NAME: Helianthus annuus (sunflower) seed oil

Suggested Use:
Core Oil – use at 10-25% of the formula
Pressed from the seeds of those beautiful sunflowers with heads that look up at the sun. (the flowers do not follow the sun – by the way !)

Soap Making Benefits:
• Very inexpensive oil – one of the cheapest
• Slow to saponify
• Longer curing and hardening times for the soaps
• Blends very well with other oils
• Rich creamy lather
• Very light oil
• Poor shelf life of 3-6 months only – needs preservation
Skin Benefits:
• Nicely moisturising
• Contains natural vitamin E tocopherols – preservatives
• Natural antioxidants
• Vitamins A, D and E
• Forms a protective germ resistant barrier on the skin.
• Helps skin retain water
• Good for acne skins and can be used on the face

INTERESTING FACT: Studies were done on low birth weight premature babies who were susceptible to infection as a result of under their developed skin. It showed that if they smeared daily with sunflower oil, they were 41% less likely to develop infections.

Olive Oil – INCI NAME: Olea europaea (olive) fruit oil
Suggested Use:
Core Oil – use at 10-100% of your formula
Olive oil comes from the fruit and pips of the olive tree. Pure Castile soap is made entirely from olive oil with no other oils in the recipe, and Marseilles soap at 72% with other oils and seawater.
Olive oil is classified according to the stages of the pressing. The first pressing is extra virgin and is the purest clearest of the grades. The next pressing is virgin – both done without heat or solvents, then pomace Grade A (which includes pips) and lastly pomace Grade B which use a solvent like Hexane to extract the last of the oil from the olive fruit and pips. Each grade of olive oil behaves differently when making soap, and results in a different colour. A super white bar needs to be made from the extra or virgin grade – the one that looks as clear gold in colour as possible. Pomace will give you anything from a creamy off white colour to a pale green olivey colour. The unsaponifiables in the pomace promotes a better reaction with the lye to speed up saponification.
Pomace olive oil can react violently with some essential oils – especially the spice ones, or with fragrances which contain di-propylene glycol in their formula, causing the soap to seize or begin to harden prematurely – so be prepared to think on your feet, be fully ready with all hands on deck and rush the soap into the moulds before it is too late.
Olive oil is really a one-stop-shop of soap making oils. It has everything the soap maker is looking for.

Soap Making Benefits:
• Produces a very creamy mild soap – safe for babies
• Contributes to the hardness of the bar
• Easy to source
• Relatively inexpensive if you use pomace grade
• Provides a stable but disappointing lather – the higher the percentage olive oil in the formula
• Considered a medium – heavy oil
• the higher the percentage olive oil the poorer the lather
• Pomace is high in unsaponifiables which is superb for soap making, leaving behind it tocopher-
• the higher the percentage olive oil the poorer the lather
• Pomace is high in unsaponifiables which is superb for soap making, leaving behind it tocopherols and squalene which is naturally found in our sebum
• Has a good shelf life – 12 months plus (more for extra virgin)
• Can be temperamental and unpredictable in soap making
• Best used in conjunction with coconut and palm oils and at 30-40% of the formula
• Takes long to cure
• If using pomace grade, add preservation

Skin Benefits:
• Highly moisturising and hydrating
• Does not block normal pore functions, allowing the skin to sweat and breathe as normal
• Very mild and gentle soap – ideal for babies and highly sensitive skin
• The high level of unsaponifiables is what makes olive oil so good for the skin as it includes tocopherols and squalene which is naturally found in our sebum
• Not for use on acne skin

Canola/Rapeseed Oil – INCI NAME: Brassica napus (canola) seed oil
Suggested Use:
Core Oil – use at 10-25% of the formula
Canola or Rapeseed oil comes from the cabbage smelling plants that produce beautiful fields of yellow flowers all around our home town of Swellendam in August.

Soap Making Benefits:
• Slows down your trace time – good for special pouring techniques
• Low but creamy lather
• Almost entirely unsaturated (only 6% saturated fats), so needs to be combined with saturated oils to get it to trace
• Very easy to source
• Inexpensive oil – can be added into formula to reduce costs
• Medium shelf life – 12 months

Skin Benefits:
• Good skin penetration
• Moisturising
Avocado Oil - INCI NAME: Persea gratissima (avocado) oil

Suggested Use:
Core Oil – use at 10-20% of your formula

Pressed from the fruit of the Avocado tree, it is superb oil with intensely moisturising properties. Cold pressed and unrefined is best. It is one of my favourite oils, and in the RAIN stores, we sell it as a crude oil in our scrub deli bar, where you can use it to make up your own body scrubs.

Soap Making Benefits:
• high in unsaponifiables means it produces a really creamy rich soap bar which leaves your skin feeling as though you washed with a body lotion
• unimpressive lather
• does not add to the hardness of the bar
• traces quickly
• long shelf life – 12 months plus
• high in tocopherols which helps retard rancidity
• medium – heavy weight oil

Skin Benefits:
• Vitamins A, B and E
• Highly moisturising and conditioning for skin
• Helps heal dry and damaged skin
• Regenerates skin cells
• Excellent for eczema and extremely sensitive skin
• Easily absorbed into the skin
• Ideal for hair and scalp care as it is easily absorbed by hair strands
• Soothes sunburnt skin

Shea Butter – INCI NAME: Butyrospermum parkii (shea) seed butter

Suggested Use:
Core Butter – use at 5-30%

Shea butter comes from the seeds of the Karite tree found in West Africa. Made famous by my competitors L’Occitane.

Soap Making Benefits:
• Extremely high in unsaponifiables (11 percent) makes it ideal for soap and skincare
• Tricky to source
• Expensive
• Traces quickly
• Stable lather
• Adds some hardness to the bar
• Can feel a bit sticky if high proportions are used – use in conjunction with cocoa butter to offset this
May be too oily for some skin types
- Good shelf life – 24 months

Skin Benefits:
- Highly nourishing
- Intensely moisturising
- Use for extremely dry skin and conditions such as psoriasis, eczema, dandruff

Soybean Oil – INCI NAME: Glycine Soja (soybean) oil
Suggested Use:
Supplementary Oil - on its own, it is unremarkable oil adding little to the pot. Use at 5-10% of the formula to reduce costs, as it is an inexpensive oil. Use it as you would sunflower oil, but add preservation.
Soybeans are commercially grown to make vegetable shortening.

Soap Making Benefits:
- Stable mediocre lather
- Does not trace quickly
- Light – medium weight oil
- Short shelf life 6-9 months
- Relatively inexpensive
- Easy to find
- Gives a mild creamy soap bar

Skin Benefits:
- Nourishing
- Vitamin E softens skin
- Softens hair and prevents fly away hair
- Moisturising especially for inflamed skin
- Easily absorbed

Hemp Seed Oil – INCI NAME: Cannabis sativa (hemp) seed oil
Suggested Use:
Supplementary or Super fatting Oil - add at trace at a rate of 15-20ml (1 heaped tablespoon) for every kilogram of oils, but with added preservation as this oil has a very short shelf life, or use at 5-10% of the formula if supplementary oil.
Pressed from the seeds of the cannabis bush or dagga plant. Use cold pressed if you can find it.

Soap Making Benefits:
- Light silky lather
- Not easy to find
- Takes time to saponify
• Very expensive
• Very mild soap ideal for sensitive problem skins and babies
• Extremely short shelf life due to high linoleic content – especially if it is unrefined ~3 months. Needs preservation and a short expiry date on the label
• A dry oil, so non greasy

**Skin Benefits:**
- GLA increases skin barrier repair
- Super mild for problem skins
- Free radical scavengers in the carotenoids
- Cell regenerating properties
- Easy absorption

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**Macadamia Nut Oil- INCI NAME: Macadamia ternifolia (macadamia) seed oil**

*Suggested Use:*

**Supplementary Oil** - Use at 5-10% of the formula

Pressed from the fatty rich nuts of the macadamia tree.

**Soap Making Benefits:**
- Low - medium lather
- Good shelf life – 12 months plus
- Light- medium weight oil with a non greasy feeling
- Inexpensive oil
- Relatively easy to source in the Lowveld region where Macadamia nuts are grown

**Skin Benefits:**
- Nourishing and skin conditioning
- Contains catechins which are antioxidant
- Moisturising
- Reduces trans epidermal water loss
- Emollient
- Squalene helps chapped cracked skin
- Close to the sebum of the skin
- Good for ageing skin
- The palmitoleic content helps with wounds and burns
- Antimicrobial and antibacterial
- Phytosterols help reduce redness, irritation and itching
Peanut Oil- INCI NAME: Arachis hypogaea (peanut) oil

Suggested Use:
**Supplementary Oil** - use at 10-15% of the oils in the formula
Pressed from shelled peanuts.

**Soap Making Benefits:**
- Low-medium lather
- Many people have peanut allergies
- Inexpensive oil
- Easy to source
- Short-medium shelf life 6-9 months
- Non drying oil
- Unimpressive lather
- Produces a soft soap – so needs to be added together with coconut and palm oils.

**Skin Benefits:**
- Nourishing
- High in vitamin E
- Moisturising
- Easily absorbed

Hazelnut Oil- INCI NAME: Corylus avellana (hazel) seed oil

Suggested Use:
**Super fatting Oil** - add at trace at 1% of the formula. It is expensive oil. (if you have an inexpensive source, use as a supplementary oil at 5-10% of the formula)
Pressed from the flesh of the oil rich nuts.

**Soap Making Benefits:**
- Low - medium lather
- Expensive
- Sourced from speciality shops, health shops or direct from the nut farmers
- Good shelf life due to the high Vitamin E content – 12 months plus
- Light dry oil
- Takes a long time to reach trace

**Skin Benefits:**
- Nourishing
- Contains potassium, magnesium and calcium
- High in vitamin E
- Highly skin conditioning
- Non greasy moisturising oil
Jojoba Wax- INCI NAME: Simmondsia chinensis (jojoba) seed oil

Suggested Use:
Supplementary or Super fatting Oil – use at maximum 5-10% of the formula or at 1-2% at trace as a super fatting oil.

Jojoba is technically a wax not an oil or a fat– this is apparently because it has 40-42 atoms and a weird upside downside fatty acid profile! That chemistry is too advanced for me – so I take what the experts say as is. When whaling became outlawed, it stepped in to replace the oil from the sperm whale in cosmetic applications.

Soap Making Benefits:
• Low to medium stable lather
• Expensive
• Not easy to source
• Very stable
• Very long shelf life – 24 months
• Contains substances which don’t saponify – so use sparingly

Skin Benefits:
• Easily absorbed through hair follicles – it just slides into your skin without blocking anything along the way
• It mixes with our natural sebum as a perfect hand-in-glove fit allowing the skin to breathe
• Nourishing
• Moisturising and softening
• Anti inflammatory
• Dry emollient
• Good for hair care because of the way in which it glides into hair follicles
• Antioxidant
• Helps with moisture retention, damage repair and flexibility

Castor Oil- INCI NAME: Ricinus communis (castor) seed oil

Suggested Use:
Supplementary or Super fatting Oil – add at trace at a rate of 15-20ml (1 heaped tablespoon) for every kilogram of oils. This oil is one of the best options for super fatting to boost lathering at 30ml per kilo of oils. If used as a supplementary oil, use at 5-10% of the formula.

Castor oil comes from the beans of the Palm Christi tree. The first pressing is used for medicine (the oil makes a great laxative - can you remember your granny making you drink castor oil for constipation?) Make sure you have the detoxified version and not raw unprocessed castor oil. It is high in ricinoleic acid (87 percent) which makes it highly viscose. Just a comparison on viscosity for interest –

Soy bean Oil – 29
Olive Oil – 47
Castor Oil - 293
Soap Making Benefits:
• Excellent lathering ability
• Helps bind fragrance
• Excellent for hair care and men's shaving products
• At too high a percentage it will make the soap bar soft
• The strong odour may carry through to the end bar if too high a percentage is used.
• Traces fairly quickly
• Fairly inexpensive
• Easy to source
• Very thick oil
• Good shelf life – 12 months plus

Skin Benefits:
• Provides slip in shaving soap due its emollient viscosity
• It is a shiny greasy oil used a lot in lipsticks and lipgloss
• Penetrates skin easily due to low molecular weight
• Highly moisturising as it is a humectants – drawing moisture to the skin
• Antifungal and antibacterial

Rosehip Oil- INCI NAME: Rosa rubignosa (rosehip) oil

Suggested Use:
Supplementary or Super fatting Oil – add at trace at a rate of 15-20ml (1 heaped tablespoon) for every kilogram of oils, or at 1-5% of the formula if using as a supplementary oil.
Rosehip oil is pressed from the seeds which are found in the hips of the rose flowers.

Soap Making Benefits:
• Short shelf life – 3-6 months
• Prone to rancidity – so preservation essential
• Not often used in soap making
• Costly
• Not easy to find

Skin Benefits:
• Fades pigmentation and scarring
• Nourishing
• Easily absorbed into the skin
• Moisturising
• Good for extremely dry damaged skin, dermatitis, psoriasis, eczema
• High Retinol Vitamin A
• Vitamin C
• High GLA profile
• Omega 3 and 6
• Omega 3 and 6
• Reduces the signs of ageing

**Wheat Germ Oil - INCI NAME: Triticum vulgare (wheat) oil**

Suggested Use:
**Core Oil** – use at a maximum 5-15% of the formula

Pressed from one of the three parts of the ear of wheat – the germ which contains 25% of the goodness of the plant.

**Soap Making Benefits:**
• medium stable lather
• adds hardness to the bar
• low-medium shelf life 6-9 months
• Very stable oil
• Fairly inexpensive
• Sticky heavy oil
• Easy to source

**Skin Benefits:**
• High vitamin E content giving it a good shelf life
• Moisturises and softens
• Antioxidant properties and free radical scavengers
• Improves circulation
• Helps form new cells
• Repairs sun damage
• High Vitamin E
• Good for very dry inflamed skin
• Wheat allergy sufferers may exhibit allergic reactions to high levels of wheat germ oil

**Rice Bran Oil - INCI NAME: Oryza sativa (rice bran) oil**

Suggested Use:
**Core Oil** – use at 10-35% of the formula

The oil is pressed from rice husks. Use interchangeably with olive oil and sesame seed oil

**Soap Making Benefits:**
• Good lathering ability
• Medium weight oil
• Not easy to find unless you are in Asia
• Inexpensive in rice growing regions
• Medium shelf life due to high linoleic content – 12 months
Skin Benefits:
• Nourishing
• High in unsaponifiablies
• High Vitamin E
• Ferulic acid – antioxidant properties
• Mild and suitable for babies
• Creamy and moisturising
• Can help reduce signs of ageing and diminish age spots

Lanolin - INCI NAME: Lanolin
Suggested Use:
Supplementary or Superfatting - use at a rate of 30ml for every kilogram of oils if used as superfatting.
Or 2-5% of the oils in the formula if used as supplementary. Add to the melting oils and NOT at trace
Lanolin is a fat which comes from the wool fleece of sheep. It is high in allergens.

Soap Making Benefits:
• does not lather
• traces quickly
• contributes hardness to the bar
• good shelf life – 12 -18 months
• contains substances which do not saponify – so use sparingly

Skin Benefits:
• highly nourishing
• highly emollient
• repairs cracked broken skin
• intensely moisturising
• high allergens – often causes skin allergy or reactions in sensitive skins

Apricot Kernel Oil – INCI NAME : Prunus armeniaca (apricot) kernel oil
Suggested Use:
Core Oil – use at 10-15% of the formula

Soap Making Benefits:
• Low- medium lather
• Good shelf life – 12 months
• Very light oil
• Interchangeable with Sweet Almond Oil
• No scent
• Brings oleic acid into the mix without olive oils’ heaviness
Skin Benefits:
• Nourishes, softens and regenerates cells
• Absorbs easily due to its lightness
• Offers barrier repair support
• Moisturising – good for dry itchy skin
• Anti-inflammatory
• Reduces redness and itchiness
• High Vitamin E

Cocoa Butter - INCI NAME: Theobroma cacao (cocoa) seed butter
Suggested Use:
Supplementary or Super fatting – add at trace at a rate of 15-20 ml (1 heaped tablespoon) for every kilogram of oils, or at 5-15% of the formula if used as a supplementary butter
Pressed from the beans of the Cocoa Tree, which delivers cocoa and chocolate all at the same time. Definitely a one stop shop option for your garden!
You can get it in brown or creamy white like milk chocolate and in a deodorised or un-deodorised form. In the deodorised form, you can still smell chocolate – only less so. Best used with unsaturated oils like avocado and olive.

Soap Making Benefits:
• traces quickly
• helps harden the bar but the bar will become too hard and crack if used at over 10% of the formula
• medium lather
• The fat is very hard and is highly saturated.
• some people have allergies to cocoa butter
• strong smell of chocolate, but does not carry through to the soap
• very good shelf life – 24-36 months

Skin Benefits:
• highly nourishing and enriching to the soap
• easily absorbed
• intensely moisturising and conditioning
• fairly expensive

Sesame Seed Oil - INCI NAME: Sesamum indicum (sesame) seed oil
Sesame Seed Oil - INCI NAME: Sesamum indicum (sesame) seed oil

Suggested Use:

Supplementary Oil – use at 1-5% of the formula

Pressed from sesame seeds, it has a strong smell which becomes overwhelming when used in large quantities. Keep to a 5% dosage to avoid odour.

Soap Making Benefits:

• low-medium lather
• has an odour which can carry through to the end soaps
• won’t stain linen
• light – medium weight oil
• medium shelf life – 9-12 months

Skin Benefits:

• regulates sebum production
• high in antioxidants
• high in vitamins
• moisturising and moisture regulation properties
• Good for eczema, acne skin and psoriasis
• Contains a polyphenol called lignan which forms a platform for antioxidants

Safflower Oil - INCI NAME: Carthamus tinctorius (safflower) seed oil

Suggested Use:

Supplementary Oil – use at 5 - 10% of the formula

Safflower oil is pressed from the seeds of the safflower plant. The flowers are often sold as false saffron and used as a tea in Asia. I don’t particularly like this oil. I find it has a strong odour and adds little in the way of benefits. No bells and whistles to bring to the soap making party.

Soap Making Benefits:

• Short shelf life 3-6 months – needs preservation
• Low-medium lather
• Slow to trace and slow to cure

Skin Benefits:

• Nourishing
• Makes a mild soap
• Moisturising
**Evening Primrose Oil - INCI NAME: Oenothera biennis (evening primrose) seed oil**

**Suggested Use:**

*Super fatting Oil or Supplementary Oil - use at 5-10% if a supplementary oil or at 1% trace for super fatting to preserve all the goodness this oil has to offer*

Pressed from Evening Primrose seeds, this oil has something unique and special to offer your body. It has high linoleic content, but also an essential fatty acid known as gamma linoleic fatty acid – GLA. This is also known as Vitamin F. Our bodies don’t produce Vitamin F and so we need to source this vitamin from outside of our bodies. This oil is one of the oils that deliver this, and as it easily absorbed by the skin, it carries right into our blood stream.

**Soap Making Benefits:**

- Expensive
- Easy to find in health shops
- Medium shelf life – 9-12 months

**Skin Benefits:**

- Unique essential fatty acids found in few other oils
- For extremely dry damaged skin

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**Grape Seed Oil - INCI NAME: Vitis vinifera (grape) seed oil**

**Suggested Use:**

*Core Oil - use at 10-20% of the formula, but with preservation*

Pressed from the pips present in grapes.

**Soap Making Benefits:**

- Low-medium lather
- Short shelf life of 3-6 months, so needs preserving
- Oil has a slightly dry feel
- Inexpensive
- Light dry oil
- Easy to find in grape growing and winemaking regions

**Skin Benefits:**

- Helps with barrier repair
- Moisturising
- Anti-inflammatory
- Produces a mild soap
Sweet Almond Oil - INCI NAME: Prunus amygdalus (almond) oil

Suggested Use:

Core Oil – use at 10-20% of the formula

Almond Oil is pressed from the nuts of the almond tree.

Soap Making Benefits:

- Low-medium lather
- Medium shelf life – 12 months
- Very light oil
- Interchangeable with Apricot Kernel Oil
- Odourless

Skin Benefits:

- Nourishing
- Absorbs easily
- Moisturising, softening
- Helps with dry itching flaky skin

Kalahari Melon Oil - INCI NAME: Citrullus lanatus (melon) seed oil

Suggested Use:

Supplementary or Superfatting Oil – add at trace at a rate of 15-20ml (1 heaped tablespoon) for every kilogram of oils or at 5 – 10% of the recipe

This is one of our very favourite oils at RAIN. These wild melons grow on the desert floor in the Kalahari Desert – home to the Bushmen. They are filled with life giving moisture and are packed with anti oxidants and nutrients which help this plant to sustain itself in the extremely harsh desert environment. Tribal people typically chew the seeds to release the oils, and rub their skins with a combination of the seed oil and their saliva as a sun protecting moisturiser. A person can live for six consecutive weeks off the water, seeds and fruit of these melons alone, and the Bushmen would not dream of crossing the desert when the melons are not in fruit.

The melons are harvested by a fair trade cooperative of around 3000 women, who depend on the income from these precious seeds for their livelihood.

Soap Making Benefits:

- Medium shelf life – 9-12 months
- Slight hardening of the bar
- Poor lathering ability
- Not easy to source
- Expensive
- Wild harvested – so organic
- Not cultivated
- Fair Trade
Skin Benefits:

- Helps the skin retain moisture
- Regenerates the epidermis
- Very high in antioxidants
- Contributes to the integrity of the cell wall
- Enables suppleness and elasticity
- Cell restructuring properties
- Skin conditioner

Marula Oil - INCI NAME: Scelrocarya birrea (marula) seed oil

Suggested Use:

Supplementary or Super fatting Oil – Use at 10-15% of the formula or add at trace at a rate of 1% of the formula

The marula tree grows wild in southern Africa and is famous for the wonderful creamy liquor known as Amarula which is made from its fruit. Elephants tend to favour the overripe fruit and become mildly intoxicated from eating it. Used traditionally by the Tsonga tribe to moisturise their bodies and massage their babies.

The oil rich seeds are pressed without solvents to yield light golden oil which is extremely rich in antioxidants. It is one of the Fair Trade wild harvested oils favoured by our RAIN formulation team.

Soap Making Benefits:

- High oleic content gives it a long shelf life – 18-24 months
- Expensive
- Light oil
- Mostly wild harvested
- Fairly easy to source
- Stable
- Nutty aroma

Skin Benefits:

- Highly nourishing
- High in antioxidants – catechins, tocopherols and flavinoids
- Revitalises skin
- Procyanidin content makes it excellent for hair
- Procyanidins also work as scavenging free radicals before they cause damage to cells
- Moisturising and conditioning
Mafura Butter - INCI NAME: Trichila emetic ( mafura ) seed butter
Suggested Use:
Supplementary or Super fatting Oil – use at 5-10% of the formula, or add at trace at a rate of 15-20ml (1 heaped tablespoon) for every kilogram of oils
This is another favourite oil of the RAIN formulation team as it is a wild harvested organic butter which has a Fair Trade status in South Africa.
It comes from the seeds of the Natal mahogany tree as was traditionally used by Zulu people as a wound healer and a hair conditioner. The seeds produce a light nutty butter.

Soap Making Benefits:
• non drying oil
• long shelf life – 24 months
• produces a stable lather
• makes a hard soap bar
• not easy to source
• expensive
• Fair Trade
• Organic wild harvested
• Slight nutty aroma

Skin Benefits:
• Liminoids – specifically Trichilan A make it anti inflammatory
• intensely moisturising and nourishing
• high in essential fatty acids
• does not clog pores
• regenerates cells
• alleviates itching
• nourishes cracked skin
• highly emollient
• easily absorbed

Mongongo/Manketti Nut Oil - INCI NAME: Schinziophyton rautanenii ( manketti ) seed oil
Suggested Use:
Supplementary or Super fatting Oil – Use at 5-10% of the formula, or add 1% of the formula
The Mongongo nut or Manketti tree grows in the very dry arid regions of southern Africa and the Kalahari Desert - surviving intense heat of over 40 degrees Celsius, and years of drought. This hardy resilient tree produces fruit which are highly favoured by elephants and kudu. The nuts inside the fruit are left undigested, and are later regurgitated into neat little piles by the buck, and are collected in the dung of the elephants for pressing to obtain the oils.
Soap Making Benefits:

- not easy to source
- very stable oil with a shelf life of 18 months
- wild harvested
- fair trade
- organic
- expensive
- contributes little to the integrity of the soap bar, but is rich in skin benefits

Skin Benefits:

- very high in eleostearic acid which polymerizes in the presence of UV light to create a film of protection on hair and skin
- High in Vitamin E - tocopherols
- Moisturising, hydrating and nourishing
- Reduces inflammation and redness
- Regenerates and restructures cells

Baobab Oil - INCI NAME: Adansonia digitata (baobab) seed oil

Suggested Use:

Supplementary or Super fatting Oil – Use at 5-10% of the formula, or add at 1% of the formula at trace

Also known as Monkey Bread Tree, this is our most favourite oil in the RAIN formulation laboratory. The tree is the icon of southern Africa and some specimens are a few thousand years old. They take hundreds of years to grow and their ubiquitous shape of an upside tree with roots in the air – has come to symbolise the continent of Africa. The tree is home to many species of wild life and is the subject of folklore and traditional stories.

The oil is cold pressed from the seeds inside the cream of tartar fruit.

Soap making Benefits:

- Non drying oil
- Long shelf life 18-24 months
- Produces a hard bar
- Stable lather
- Mild bar
- Highly emollient
- Wild harvested
- Fair Trade
Skin Benefits:

- Contains β-sitosterol at 80% which is a powerful antioxidant and which reduces DNA damage in the cells
- Highly nourishing and moisturising
- Vitamins A,D3,E
- Best suited to dry damaged skin and intensive hair applications
- Omega 3,6,9
- Does not clog pores
- Regenerates epithelial tissue
- Improves skin elasticity
- Easily absorbed
- Renews cell membranes
- For eczema, psoriasis, dandruff relief

TIP: If you are making soaps for resale, then you will be forced to choose some of your oils according to their costs, otherwise you may land up with extremely expensive unsalable soaps.

TIP: Remember that weight and volume is not the same thing. We always work with weight when soap making, not volume. For example – one litre of oil weighs very roughly 830-910 grams and not 1 kilogram. Don’t be fooled. Also bear in mind when you do your soap costing, One litre of sunflower oil costs X in the supermarket, but your recipe is in grams (weight) not litres (volume). There are 883 g of sunflower oil in 1 litre. You will have to weigh out the oil you need for your recipe, and then pour it into a measuring jug to see its volume. Then take the litre price, divide by 1000 millilitres, and times by the millilitres you are using in your recipe – to obtain an accurate cost. See table below on weight to volume ratios of some of the common oils

<table>
<thead>
<tr>
<th>Oil Type</th>
<th>Volume (litre)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pomace Olive Oil</td>
<td>1 litre</td>
<td>870 g</td>
</tr>
<tr>
<td>Extra Virgin Olive Oil</td>
<td>1 litre</td>
<td>885 g</td>
</tr>
<tr>
<td>Sunflower Oil 1 litre</td>
<td>863 g</td>
<td></td>
</tr>
<tr>
<td>Rosehip Oil 1 litre</td>
<td>890 g</td>
<td></td>
</tr>
<tr>
<td>Jojoba Oil 1 litre</td>
<td>833 g</td>
<td></td>
</tr>
<tr>
<td>Sweet almond Oil 1 litre</td>
<td>873 g</td>
<td></td>
</tr>
<tr>
<td>Grape seed Oil 1 litre</td>
<td>875 g</td>
<td></td>
</tr>
<tr>
<td>Avocado Oil 1 litre</td>
<td>874 g</td>
<td></td>
</tr>
<tr>
<td>Macadamia nut Oil 1 litre</td>
<td>910 g</td>
<td></td>
</tr>
<tr>
<td>Coconut oil 1210 ml</td>
<td>1 kilogram</td>
<td></td>
</tr>
<tr>
<td>Palm Oil 1200 ml</td>
<td>1 kilogram</td>
<td></td>
</tr>
</tbody>
</table>
Colours of Oils

Remember that your oils lend colour to your soap and you may want to choose oils that either deliver a colour of their own or do not distract from the colour effects that you wish to create.

For example:
Rosehip Oil = peachy pink tones
Unrefined Avocado Oil = olive green tones
Coconut Oil = white
Virgin and Extra Virgin Olive Oil = white
Pomace Olive Oil = off white
Wheat germ Oil = yellowy orange
Unrefined Palm Oil = yellowy orange
Red Palm Oil = red
Hemp Seed Oil = sludgy green
Skin Benefits:

- Contains β-sitosterol at 80% which is a powerful antioxidant and which reduces DNA damage in the cells
- Highly nourishing and moisturising
- Vitamins A, D3, E
- Best suited to dry damaged skin and intensive hair applications
- Omega 3, 6, 9
- Does not clog pores
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Pomace Olive Oil 1 litre - 870g
Extra Virgin Olive Oil 1 litre - 885g
Sunflower Oil 1 litre - 883g
Rosehip Oil 1 litre - 890g
Jojoba Oil 1 litre - 833g
Sweet almond Oil 1 litre - 873g
Grape seed Oil 1 litre - 875g
Avocado Oil 1 litre - 874g
Macadamia nut Oil 1 litre - 910g
Coconut oil 1210 ml - 1 kilogram
Palm Oil 1200 ml - 1 kilogram