

Redesigning our Enterprise Culture with Soap



Rozie Apps finds out how ZeroSoap in Devon is encouraging entrepreneurship and helping to create organic farms



All photos © Ellie-Rose O'Carroll

PREVIOUS PAGE The soap in refillable containers. This helps reduce plastic waste.

LEFT One of David's guerilla workshops

Three generations of the O'Carroll family (David, Daniel and Ellie-Rose) from Devon are initiating great change across the UK through Zero20-1 Soap.¹ David and his family manage the 4.45 hectares (11 acres) of Ballagh Micro Farm, four miles from Totnes. Their plot of land has been designed using permaculture and agroforestry principles, following local training with Martin Crawford of the Agroforestry Research Trust. David's initial aim was to bring Korean Natural Farming (KNF) techniques to the UK, which uses indigenous microorganisms (IMO) to produce fertile soils that yield high output without the use of chemical herbicides or pesticides. David applies these techniques to his farm and holds workshops to teach others. The work with IMO is fascinating, and I'll be exploring more of David's techniques in the next issue.

To fund the agroforestry project, David and his family needed an income and this led to making natural, organic soap, which is integral to the success of low cost, large scale integrated pest management (IPM). "We wanted our entire manufacturing process to be cheap and ecological – from the 'factory' to the distribution of the soap," David explains.

ZeroSoap uses a range of permaculture and KNF principles to create a two ingredient, natural and organic product. Water and seed oil are combined, along with lye, which is used as a catalyst to the saponification process. The lye is neutralised (think: spark to create fire)

and is not present in its original form in the final product. The seed oil becomes a triglyceride. In cosmetic terms, hemp seed oil becomes Potassium Hemptedate.

This soap is chemical free, which means it isn't harmful to the skin. It also isn't harmful when washed down the drain. The soap is sold as a refill only (bring your own bottle) making it zero waste. David spent time looking into the soap manufacturing industry and realised it was a carbon heavy process: transporting water for miles, shipping in ingredients and then being packaged in plastic. He looked at his local environment and realised his ingredients were on his doorstep. Seed oil (rapeseed, hemp and sunflower) could be found from farms within a 50 mile radius of his home, and the water, he could harvest himself. The soap has already helped people suffering from eczema and psoriasis because it has no additives, and David and local farmers are using it alongside local plants to create natural pesticides.

"Our manufacturing process is zero waste because we follow the principle 'the good and bad are one'. We utilise the excessive heat generated naturally (for plants) in our walipini² and we are able to make soap with no power costs. We simply 'do as nature does'." David also explains that their walipini is built using hyper-adobe (earth) and recycled wood and plastic giving it a low carbon footprint, and the solar panels also generate excessive power which is used in the soap making process.

Just Add Water

Alongside having health benefits for people and plants, the main aim of ZeroSoap is to bring positive change. David holds soap making workshops on his farm to share knowledge and encourage others to start making the soap in their own areas from their local plants and crops, so that people value their local harvests and create low carbon products. It also helps enrich the local economy. 'Value what is near and cheap, not expensive from afar' is another principle David follows. He encourages these new soap makers to donate their products to local food banks, so that a multitude of people will benefit. 'I and others are one' is the main principle guiding how ZeroSoap operates. It's a ripple effect, creating wide spread awareness for simple organic products and small changes we can all make. ZeroSoap share their knowledge but also their products, as they donate some of their soap to the Refugee Community Kitchen in Calais.

Their latest product, 'Festival Soap' is a solid soap in a reusable aluminium bottle. For every one sold, another is donated to the Refugee Community Kitchen. The soap comes as a hard product, which just needs water adding to it (BYOH₂O – Bring Your Own H₂O). You simply shake the bottle to make a soapy water that can be easily used. The soap also helps eradicate the need for babywipes, which is often high up on the 'festival shopping list' and is a major waste product. David is passionate about reducing carbon footprints and felt that



LEFT The end result of blending lye, seed oil and water

RIGHT The refugee soap.

CENTRE It costs much more to ship soap with water in it, so ZeroSoap created the refugee soap, where water can be added when it's used.

BELOW Because the soap is free from toxic chemicals, it can soak away into the ground. It also helps feed indigenous microorganisms.





A field of organic hemp.

instead of people buying soap with water in it, and then transporting that around, they could just add their own water at the time they need it.

The idea behind the Festival Soap was to save the soil and be the solution to getting cleaning products to refugees in a camp setting. Every time we wash chemicals into the soil, we're damaging it. ZeroSoap is not only chemical-free, but it is also a microbe nutrient. So if that festival field is going to be farmed at a later date, it will be healthy.

Bioremediation

When David and his family moved onto their plot, they found soil that was damaged with engine oil spills from equipment/machinery and they experimented with using soap to bioremediate the land by recovering the waste oil. They found that the soap acts in the same way as when washing the dishes – it de-greases. The biosurfactant properties of the soap mean the waste oil is more easily broken down as the soap acts as a dispersant. The waste oil binds to the soap particles and, with the addition of an organic anti-caking agent, a solid foam is suspended above the water. This can then simply be scooped out. Instead of throwing this waste oil away, it is made into something useful, such as firelighters, by adding sawdust. The foam is simply dehydrated in the walipini and mixed with sawdust.

The Oceans

ZeroSoap also benefits our waterways and the ocean, because it is chemical-free it's not toxic to the water ecosystems – the soap is 100% biodegradable within seven days. David's team are also in talks with organisations to keep testing the soap's bioremediation abilities, as it could

TOP RIGHT ZeroSoap also work with The Hemp Trading Company to create hemp soaps for washing their clothing.

RIGHT Excess heat from the soap making process is used to heat the plants in the walipini.



be used to clean up oil spills, of which we've all seen the damaging effects of.

Local Farmers

Traditionally we always cleaned with organic soaps, there were no chemical soaps. ZeroSoap believe that organic soaps will replace chemical soap when it can compete on price and availability. ZeroSoap has a mission to replace high cost chemical soaps with low cost organic soap – this is true of farming and food too.

While encouraging consumers to transition towards organic soap, ZeroSoap is working with farmers to do the same. David is also working with oil producers to transition to hemp, as it is naturally more pest-resistant. David only wants organic plant oils for his soap, and is working with several hemp and rapeseed farms locally and across the UK to transition their farms from chemical to organic.

These farmers originally saw their rapeseed as a single product to sell, but by going organic it extends their product range and gives their harvests a higher value. The additional money they make from the soap helps pay for their farm to move towards organic in all other areas. Some of the farms choose to sell their seed oil directly to ZeroSoap, whereas others choose to learn the soapmaking process from David. This helps expand their product range and also helps to

make organic soap cheap and available across the country.

Once they've learned about the soap, farmers are then taught about natural farming techniques such as using local plants, herbs and 'weeds' to include with the soap to make natural pesticides, as well as the huge benefits of using IMO, so that the soil is being fed, and the plants remain toxic-free. They can reduce their costs of chemical inputs because their pesticides can be sourced from their own crops and local environment – the whole process creates a closed-loop system. Once these farms have moved towards being organic, local communities will then benefit from organic food. David's dream is to make organic food cheap and accessible.

ZeroSoap and the O'Carroll family are an inspiration as to how small actions can create big and positive change. By creating a product that needs organic local ingredients, they are able to encourage organic farming across the country, whilst also encouraging people to start their own businesses, reviving local economies and creating jobs.

¹ www.zerosoap.info

² An earth sheltered/underground greenhouse

For more information on ZeroSoap visit www.zerosoap.info

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