

Sustainability Assessment:
Dr. Bronner's Magic
18-in-1 Hemp Lavender Pure Castile Liquid Soap

By: Ryan Donnelly, Devon Byrne, Paul Eberts, Dan Murphy, Tyler Hall
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I. Introduction

Our group has chosen to analyze the life cycle of Dr. Bronner's Magic 18-in-1 Hemp Lavender Pure Castile Liquid Soap. We have come to this decision on the basis that soap/body wash is an extremely popular product for personal hygiene. Each day, millions of people around the world make use of hygienic products to maintain a healthy functioning immune system. Body wash and soaps are a key component to maintaining that balance.

In recent years, rising cancer rates and other serious health issues have drawn concern from the public. Consumers are becoming more aware of the correlation between body care products and human health. There is concern that mainstream body care manufacturers are putting harmful chemicals into everyday consumer products. With so many different brands and varieties of cosmetics and hygienic products, it can be extremely difficult for the average consumer to differentiate between a quality, healthy product and a product that is potentially very dangerous to their health. Consumers are largely uninformed about product ingredients and their overall effects on human health. The growing amount of body care products on the market it has been difficult for monitoring agencies, such as the Food and Drug Administration, to keep up with the influx of ever-changing products and their potentially harmful characteristics.

In 1938, the Federal Food, Drug, and Cosmetic Act was passed, introducing a feeble structure of regulation that allowed cosmetic products to hit the shelves. Interestingly, even with such statues available in implement product regulations, highly toxic chemicals are included in numerous consumer goods. As maintained in Section 601[21 USC S361] of the Adulterated Cosmetic amendment, any product that “bears or contains any poisonous or deleterious substance which may render it injurious to users,” (FDA, 2009) should be barred from sale. However, many of the items which are available for purchase have ingredients linked to skin disease, reproductive impairments, and in certain instances, cancer. Moreover, with the use of questionable ingredients increasing, conventional body products are a testament to the faults linked to the 1938 Act that should be addressed.

Companies like Dr. Bronner’s and Nature’s Gate claim to be on the forefront of creating environmentally sound body care products and market their goods to an target audience of environmentally conscious consumers. A number of factors, including product sourcing and the environmental impacts of the ingredients influence a consumer’s decision of which product to buy. Often times, the reality of these factors is masked behind claims of how environmentally

friendly a product is, otherwise known as “green washing”. With consumers being bombarded with so many different claims constantly, we have decided to conduct our own investigation in to a product that is largely considered the gold standard in soaps/body wash, Dr. Bronner's Magic 18-in-1 Hemp Lavender Pure Castile Liquid Soap. It is our hope that this project can provide consumers with a full life cycle analysis of this product in order to assist in decision-making when it comes to choosing a body wash product for every day use.

II. Raw Materials for Dr. Bronner's 18-in-1 Hemp Lavender Pure Castile Liquid Soap

When research began to investigate the ingredients used in this product, our group chose to contact Dr. Bronner’s main office located in Escondido, CA, as well as e-mail Erin Trudeau-Bronner, the customer service manager for the company. Quickly, a company representative was reached who directed the phone call to Shawna Olmos, Dr. Bronner’s sales and customer service representative. During the conversation, Ms. Olmos gave a verbal tutorial on the companies website, provided us with methods of domestic shipping from product suppliers, and further, attempted to connect us with Michael Bronner, the company’s Vice President who unfortunately was unavailable. Dr. Bronner’s has no issue eliciting product and business information, which allows the public a full transparent view into their practices. Our e-mail to Erin Trudeau-Bronner was successful in identifying the supplier of essential oils to the company. While we were easily able to obtain specific data regarding the Dr. Bronner’s ingredients, Nature’s gate does little to make information surrounding their ingredient sources accessible. An e-mail to Nature’s Gate representative Natalie Wallach left our group feeling really skeptical about the information we were receiving after being told that all of the certified organic materials in the product “come from the local farm” (Wallach, 2010). Below is a comprehensive list of the ingredients found in the Dr. Bronner’s Lavender Soap.

Organic Coconut Oil

The organic coconut oil found in the Dr. Bronner’s soap comes from the country of Sri Lanka. Coconut oil is the largest food crop for the country and is used in many cosmetic products because it gives soaps a rich lather. The coconut oil production that supplies Dr. Bronner’s has been named the “Serendipol Project”. It was started by Dr. Bronner’s and has had significant social effects that have benefited the country. It is now the world’s largest supplier of certified organic and Fair Trade virgin coconut oil (Dr. Bronner’s, 2010). The Serendipol Project is located in Sri Lanka’s “coconut triangle” and renovated a desiccated coconut mill with updated processing technologies. In the past, poor land maintenance has eroded soil fertility and farm profitability in the region. All of the farms associated with the project, some 500, were converted to organic practices. The total area covered by all the farms totals near 8,000 acres. Today, the operation supplies cosmetic and food-grade coconut oil for Dr. Bronner’s and other socially responsible firms in the United States and Europe (Dr. Bronner’s, 2010).

Potassium Hydroxide

The potassium hydroxide found in the soap, otherwise known as caustic potash is an extremely basic chemical that is corrosive in nature. A white, odorless substance, the potassium hydroxide has a pH of 13.5. It is used to make soap require less water for the soaps to liquefy and also makes them feel softer. The production of potassium hydroxide has a number of adverse effects on the environment. Hydrogen and chlorine gases are released as by-products of its manufacture. Dr. Bronner's states that none of the potassium hydroxide remains in the final product after saponifying the oils into soap (Dr. Bronner's, 2010). We found it comforting that Dr. Bronner's would go so far as to inform its customers about an ingredient involved in the manufacture of the product, and were relieved to learn that there was no potassium hydroxide remaining after the soap-making process.

Lavandin Extract

Lavandin Extract, another ingredient in the Dr. Bronner's soap, originated in France and is now commercially grown all across Europe (Essential Oils, 2001). The plant is a genetic cross of Lavender *Officinalis* (true lavender) and Spike Lavender. The Lavandin plant exhibits a number of unique properties that make it beneficial to use in soaps. First, the Lavandin Extract is highly antiseptic, antifungal and antibiotic, making it a great hygienic tool (Essential Oils, 2001). In addition, Lavandin's scent last longer than true lavender, making it an effective natural fragrance for the soap (Essential Oils, 2001).

Organic Olive Oil

Ninety percent of the organic olive oil in the soap is supplied by Palestinian producers in the West Bank town of Jenin. For this operation, Dr. Bronner's is partnered with a broker, Canaan Fair Trade, a company founded by Palestinians (Dr. Bronner's, 2010). The olive oil is collected from 1,700 individual growers who are guaranteed a minimum price for their crop (Dr. Bronner's, 2010). Olive oil has a number of internal and external health benefits that have been used throughout history for cosmetic purposes. Cosmetically the oils acts as a skin moisturizer and cleanser and can also be used to reduce earwax buildup and for shaving. In a study on mice, olive oil helped to prevent the formation of tumors and skin cancer (Budyanto et al., 2000).

Hemp Oil

Hemp, originally cultivated on a large scale in European countries is one of the essential moisturizing components of Dr. Bronner's body wash. Derived from the plant *Cannabis*, hemp produces fibers similar to that of a tree. For sustainability purposes, this plant is the ultimate choice. Hemp, like trees, can be grown on a large scale, cut down, and used to manufacture goods. The difference is, however, the length of regeneration. A field of hemp can be grown in a few short months, whereas a forest could take hundreds of years for mature trees to regenerate if clear-cut forestry practices were used. Further, hemp is produced domestically in large quantities

by our neighbors to the north in Canada and arrives via ground transportation. Although Dr. Bronner's would choose to purchase a cultivated crop from the United States, for legal purposes it is not allowed (Dr. Bronner's, 2010).

Hemp oil is comprised mainly of essential fatty acids (efa), specifically omega-3 poly-unsaturated acids which are needed to maintain normal, healthy moisturized skin. This essential nutrient helps to resist the skin's natural tendency to become dry. In addition, hemp oil because of its natural occurrence causes minimal, if any irritation to sensitive skin types. Chemically enhanced moisturizers can often deplete the skin of naturally produced oils, and further can result in minor skin irritations. Moreover, hemp oil as compared to non-organic moisturizers has a noticeable less greasy texture and is known for its anti-aging skin properties.

Jojoba Oil

Cultivated in the southwest, jojoba oil is the product of the nut-bearing evergreen plant *Simmondsia chinensis*. Interestingly, this product is a replacement for sperm oil secreted by the endangered species sperm whale. Sperm oil, which is a natural lubricant, was banned during the 1970's when sperm whales were placed on the Endangered Species list. Whales were hunted heavily for this naturally occurring oil, as it was a vital component to a variety of lubricants needed for industrial use. Once banned, a search began to locate a product that contained the unique properties only found in sperm oil (United States Patent, 1978).

Jojoba is a naturally occurring, sustainably farmed plant grown in semi-desert areas, most notably, Arizona (Olmos, 2010). The nut produced by this plant contains a significant amount of oils that can be extracted and further, forms a compound that is nearly identical to the properties found in sperm oil. Because of this naturally occurring process, jojoba is now the preferred alternative for hygiene products for a variety of reasons. Benefits of this alternative include no pungent fishy-odor, whales are no longer hunted, and most importantly, the product as compared to a chemically enhanced oils, requires little if any treatment to extract its natural properties (United States Patent, 1978). Lastly, the oil produced from jojoba nuts absorbs well into the skin and is resistant to evaporation, a property not associated with chemically enhanced products.

Lavender Oil

Discovered thousands of years ago in ancient Egypt and India, lavender is said to be one of the first essential oils used for medicinal purposes. The flowers of this herbaceous plant exude a fragrance that is most widely used for aromatherapy. Specifically, medicinal herbalists claim that lavender reduces stress, provides a calming sensation to relieve anxiety, and its calming scent when inhaled can combat symptoms associated with headaches. In addition to aromatic properties, this herb is also used for its antibiotic features that increase the strength of one's immune system (Lavender, 2006).

Like Jojoba and hemp, lavender can be grown on a large, sustainable scale. The plant *Lavandula stoechas L.* has cross-pollination tendencies, which creates a variety of species. Common names of this herb used in consumer goods include Common Lavender, English

Lavender, and *Lavandula latifolia* (Lavender, 2006). This woody, herbaceous shrub, grows best in dry, arid climates, and further, requires little maintenance during propagation. Listed under both Fair Trade and Organic ingredients, this product is free from fertilizers and artificial growth hormones. Dr. Bronner's sources their herbs from two companies, Lebermuth Company, LLC based out of Indiana and Citrus and Allied LTD located in New York. However, after contacting Dr. Bronner's, information about where the companies purchased their lavender was unavailable. In addition to minimal maintenance, Lavender is tolerable of dry, gravelly soils which tend to cause issues for many other plants due to the lack of ability of water to remain present. Upon harvest, a steaming technique is used to extract the oils needed for the fragrance (Lavender, 2006).

Citric Acid

One claim to fame of Dr. Bronner's Magic Soaps is their ability to be used as both a shampoo and body wash. One ingredient in particular, citric acid, is an organic acid that is needed for optimal effects when soap is used to cleanse skin or hair. When a variety of ingredients are combined to formulate a cleansing product, the acidity of the item increases, which can have adverse effects on the body. For shampoo use, citric acid is used to balance the pH levels of the soap, which when applied to hair create the desired shiny, smooth texture (Dr. Bronner's, 2010). When skin becomes dry, citric acid in combination with other natural vitamins and minerals has been proven to replenish weakened skin areas back to normal, healthy conditions.

Naturally occurring, citric acid is extracted from various citrus fruits. Lemons and limes having the highest concentration, the acid can be found in its natural form in the liquid of compressed fruits, and further, holds properties that can be used as a preservative as well. The basic chemical structure, $C_6H_8O_7$, creates an acid that is highly water soluble, and when used in conjunction with other compounds, citric acid can be used as a buffering agent to balance pH levels of water (Soccol et al., 2006). Dr. Bronner's citric acid is derived from the raw material tapioca. Tapioca is a naturally occurring plant that can be grown on a large scale used for the production of citric acid. After speaking with Dr. Bronner's national sales and customer service representative, their company receives this product from Thailand, the largest exporter in the world of tapioca based products.

Another key component as to why Dr. Bronner's chooses citric acid over other higher acidic-based chemicals is that the structure which forms citric acid has comparatively lower toxicity levels. This in turn allows this naturally forming acid to be used inside or out, and can be flushed down the toilet or stream without fear of environmental repercussions. Moreover, what was first separated in an experiment by Swedish scientist Carl Wilhelm Scheele, citric acid is now the most widely used form of organically produced acid in industrial products for over one hundred years and counting (Soccol et al., 2006).

Tocopherol (Vitamin E)

Tocopherol is one of the eight main forms Vitamin E can be found. Vitamin E since its discovery has been studied for its effects on the dermatitis. In particular, this vitamin is highest concentrated soluble antioxidant found in the skin. Vitamin E is typically used by civilians and physicians alike for its tendencies to reduce inflammation, moisturizing properties, and healing almost every type of skin lesion or wound. For elder individuals, vitamin E has been shown to help combat the effects of a thinning epidermis, which in turn will slow the effects of aging (Jiang et al., 2001).

Two main types of tocopherol are available for use, gamma and alpha. Gamma-tocopherol is the vitamin E compound found in many food items. This essential vitamin has been linked to combating heart disease and having anti-inflammatory properties, but is not currently listed as a recommended dietary necessity. Alpha-tocopherol found in cosmetic products is the other type (Jiang et al., 2001). Dr. Bronner's in particular uses this vitamin in their products that is naturally derived from sunflower oil. Sunflower oil is used as an emollient in Dr. Bronner's Magic Soap that acts as a skin softener and moisturizer. Moreover, the company purchases this product from a wholesaler located in Spain. The name of the entity was not available after speaking with a Dr. Bronner's representative.

III. Environmental and Social Impacts of Product Life-Cycle

A. Environmental Impacts

A life cycle assessment is a tool used by conscientious consumers to evaluate the environmental and social impacts of a product. It allows for more informed decisions through a better understanding of the human health and environmental impacts of products, processes, and activities. In this way, consumers have a clear picture of what inputs and environmental releases are associated with the product and this information is used to evaluate the associated potential environmental impacts. This section of the sustainability assessment will examine the life cycles of our two products (Life Cycle, 2010).

First the raw ingredients that go into each product need to be examined. It is important know where all the materials originated, if they were recycled, and how they were obtained. Dr. Bronner's Magic 18-in-1 Hemp Lavender Pure Castile Liquid Soap is packaged in 100 % post-consumer recycled cylinder bottles and paper labels. By using 100% post-consumer bottles, Dr. Bronner's is able to keep discarded bottles from a landfill while also increasing the overall demand for recycled plastic bottles. Increasing the demand for recycled bottles helps promote economic systems that eliminate waste and curb raw extraction of petroleum in the case of plastic bottles. Furthermore, Dr. Bronner's liquid soap is three times more concentrated than most liquid soaps, which also reduces the amount of packaging destined to landfills by decreasing the frequency of purchase and consumption (Dr. Bronner's, 2010). There has also

been a push at some co-ops and stores to offer Dr. Bronner's in the bulk section where people can refill their used bottles rather than purchasing new bottles. This completely eliminates the problem of waste created by packaging or energy use in the recycling process. The refillability factor has massive environmental benefits, and is also cheaper for retailers and consumers.

On the contrary, Nature's Gate Aloe and Lavender body wash is packaged in new plastic but is fully recyclable. Despite being recyclable, there is still a considerable ecological impact. The petroleum used to make the plastic first needs to be extracted from the ground, shipped to a processing center for distillation, mixed with catalysts and finally melted down into preforms to be shipped to bottling companies (Freudenrich, 2010). This entire process requires a large amount of energy and produces waste that negatively impacts the environment.

Dr. Bronner's Liquid Soap is composed fully of certified organic oils, with no synthetic foaming agents, thickeners or preservatives. Dr. Bronner's Liquid Soap is composed of water, potassium hydroxide, lavandin extract, a number of organic oils, citric acid and tocopherol. Federal standards state that such products have to be at least 70% organic by non-water, non-salt weight. Organic products not only support sustainable farming, but also the health of farm workers and ecological processes (Dr. Bronner's, 2010).

Nature's Gate is also made up of a number of organic extracts. Aloe Barbensis leaf extract, Juniperus Communis Fruit extract and Equisetum Arvense (Horsetail) Leaf extract are a few of the organic substances in Nature's Gate Liquid Soap. At first glance, Nature's Gate, advertised as an organic herbal blend would appear to be a great choice for an environmentally conscientious consumer, however; there are a number of non-organic synthetic compounds incorporated in the body wash (Natures Gate, 2010). Three of these synthetics compounds found in Nature's Gate will be assessed for their potentially harmful environmental impact and negative effects on human health in the coming paragraphs.

Secondly, knowing the physical origin of the raw materials is crucial for a successful life cycle assessment. During our investigation we experienced two different responses from the two respective companies. Dr. Bronner's was highly receptive to our inquires into where their extracts were grown, while Nature's Gate lacked the capacity to answer our questions or refer us to someone who could. As noted in earlier paragraphs, Dr. Bronner's consists of coconut oil from Sri Lanka, lavandin commercially grown across Europe and olive oil from the West Bank Palestinian producers from the town of Jenin. Also, Dr. Bronner's is made up of hemp oil from Canada, jojoba oil is grown in the Southwest near Arizona, citric acid grown in Thailand, and tocopherol (Vitamin E) comes from sunflowers grown in Spain. We were unable to access this type of information from Nature's Gate so it is unknown where their raw materials are grown. It is difficult to accurately calculate the miles traveled by each of these ingredients due to the nature of global transportation methods. As much as Dr. Bronner's would prefer to obtain all their ingredients from domestic sources, there is simply no way because some plants have specific growing needs.

Finally, evaluating the potential environmental impacts associated with identified inputs and releases of Dr. Bronner's Liquid Soap and Nature's Gate Body Wash are necessary. Dr.

Bronner's body wash is fully biodegradable and by using all natural ingredients poses no threat to the environment. On the other hand, phenoxyethanol, a chemical component of Nature's Gate body wash has been proven to, "produced locomotor agitation and an irritation-like reaction of the respiratory system" in common carp (Dziaman, 2010). Also, 2-phenoxyethanol showed toxicity in a dose-response relationship and exposure time combinations among nonfunctional swim-bladder fish, lordosis fish and normal fish (Basaran, 2007). Finally, according to the European Union of Classification & Labelling phenoxyethanol is an eye, ear, and lung irritant and harmful if swallowed (Environmental Working Group, 2010). Based off this information, phenoxyethanol should be restricted due to being a potentially harmful environmental and immune system toxin. Cocamidopropyl Betaine is another chemical that rated a five out of eight for being a possible immunotoxin and environmental toxin (Environmental Working Group). Additionally, Cocamidopropyl Betaine was noted to be an allergy irritant when used as a cosmetic in the *Cosmetic Dermatitis* journal (De Groot, 1995). Because many commonly used chemicals in cosmetic products have large information gaps and have yet to be fully studied, it is difficult to guarantee that they are harmful, but equally difficult to ensure they are safe. Airing on the side of caution, as the precautionary principle advises, it would be beneficial for governmental agencies such as the FDA to test all products before they are allowed to be put on the market.

B. Social Impacts

From the beginning, we hoped to determine how the human health effects from the ingredients in Dr. Bronner's 18-1 all-purpose soap compared to those ingredients in more mainstream or potentially 'greenwashing' body wash products such as Nature's Gate. By merely comparing the length of the ingredients lists, we hypothesized that Dr. Bronner's would be the overall healthier choice as it has less than half the number of chemicals than Nature's Gate.

On the Skin Deep cosmetics database, Dr. Bronner's scored a 2 out of 10 of the hazard scale with 1 being the least hazardous (Environmental Working Group, 2010). Nature's Gate scored a 6, which makes it "moderately hazardous" according to the Environmental Working Group who publishes the database. None of the ingredients in Dr. Bronner's are linked to cancer, developmental/reproductive toxicity, or allergies. On the other hand, the Nature's Gate ingredients can be linked to all three, although there is limited evidence to support these claims. Another consumer database, GoodGuide.com, awarded Dr. Bronner's a 10 out of 10 in both the 'Human Health Impacts' and 'Health Hazards of Ingredients' categories, meaning there were no products that indicated the need for concern. Nature's Gate received an 8 out of 10 in these same categories, indicating that at least one ingredient presented a health concern (Good Guide, Inc., 2010).

One of these red flag ingredients is 'fragrance'. By FDA law, companies are not required to disclose the specific chemicals that make up the 'fragrance' ingredient, and there has been much controversy over whether or not these chemicals cause allergies and adverse respiratory

effects. Other chemicals in Nature's Gate Body Wash that can cause allergic reactions are attributed to PEG-120 Methyl Glucose Dioleate, a surfactant, or emulsifying agent. PEGs as a group contain impurities including 1,4-dioxane and ethylene oxide, which are probable carcinogens according to the Environmental Protection Agency (Fruijtier-Pöllöth, 2005). 1,4-dioxane is a byproduct of the ethoxylation process cleansing products undergo to enhance foaming during usage, and "unless removed under precise conditions, small amounts of 1,4-dioxane are produced during ethoxylation" (Columbia Analytic Services, 2010). 1,4-dioxane is readily absorbed in water and the skin, making it more of a concern due to its presence in body wash (Columbia Analytic Services, 2010). However, according to the EPA, there is no larger than a one in a thousand chance of getting cancer as a result of regularly drinking water that contains 3×10^{-1} mg/L of dioxin (EPA, . As mentioned above, Nature's Gate also contains phenoxyethanol, which is a popular antibacterial and chemical preservative, and has been restricted in Japan due to its suspected cause of reproductive toxicity (GoodGuide.com).

Although both Nature's Gate and Dr. Bronner's body washes boast organic ingredients, "An ingredient's source does not determine its safety", according to the Food and Drug Administration, "For example, many plants, whether or not they are organically grown, contain substances that may be toxic or allergenic" (2010). Take for instance lavender oil which is found in both products. In the FDA Poisonous Plant Database lavender is cited several times as causing contact dermatitis (FDA, 2010).

If we were to practice the precautionary principle, Dr. Bronner's would be the better choice in body wash products as it does not contain the potentially long term damaging chemicals found in alternatives like Nature's Gate.

Not only does Dr. Bronner's place great importance on the effects their products have on the consumer, but also on the effects they have on provider of their ingredients. Among Dr. Bronner's primary activism efforts is their involvement in Fair Trade certification, meaning that proceeds from the product are justly returned in the form of livable wages and development projects to the communities who harvest the ingredients. The Canaan Fair Trade firm in Palestine sources ninety percent of the 'Organic Olive Oil' in Dr. Bronner's body wash. By trading with Canaan Fair Trade, who works closely with the Palestinian Fair Trade Association (PFTA), Dr. Bronner's is supporting the viability of the Palestinian olive oil industry that is threatened by subsidized European Union olive oil, which can afford to export its olive oil at a much lower price. The PFTA promises their growers a minimum price to cover production costs as well as guaranteeing a 25% premium on organic and Fair trade products (Dr. Bronner's, 2010). Furthermore, the funds generated from Dr. Bronner's products and other participating corporations in the PFTA and Canaan Fair Trade organization go toward education programs, technical assistance, tree planting projects, and restoring traditional community livelihoods (Dr. Bronner's, 2010). A similar organization, Sindyanna, provides the remaining ten percent of fair trade olive oil from Israel for Dr. Bronner's body wash. The work of Dr. Bronner's in the Palestinian region is supported by the Fair World Project that affirms "the role that companies like Dr. Bronner's Magic Soaps play in the lives of people...is not a small one" (Sansour, 2010).

With the help of Dr. Bronner's as their largest buyer, Canaan Fair Trade exports \$4 million of olive oil per year (Sansour, 2010). Furthermore, according to a 2009 Press Article published by Canaan Fair Trade, "More than \$8 million in sales have come back to the farmers and the Palestinian economy in the last three years thanks to Canaan customers like Dr. Bronner's Magic Soaps..." (Canaan Fair Trade, 2009).

Another success project spearheaded by Dr. Bronner's is the Serendipol project in Sri Lanka that is the world market's primary source for fair trade Virgin Coconut Oil. Unlike the exploited labor in most large factories, the workers in Dr. Bronner's coconut oil factory in Sri Lanka "enjoy superior compensation and working conditions, have opportunities for growth, and a constructive relationship and dialog with the management" (Dr. Bronner's, 2010). Among the customary benefits of Fair Trade programs mentioned above, i.e. educational funding and increased economic livelihood, Dr. Bronner's relationship with fair trade firms and funds in Sri Lanka, helped end the civil war that recently plagued the region (Dr. Bronner's, 2010).

Because of Dr. Bronner's commitment to purchasing their main ingredients from Fair Trade certified sources only, they have created new markets for ingredients that were previously unavailable commercially (Dr. Bronner's, 2010). For example, the supply chain for the above-mentioned coconut oil from Sri Lanka as well as the palm oil from Ghana (another main ingredient in Dr. Bronner's Liquid Soap body wash) began with the recruitment of small, local farmers to join a synergy of stakeholders involved in Fair Trade production. Furthermore, the Fair Trade projects initiated with the support from Dr. Bronner's provide equal employment opportunities for women in these communities (Dr. Bronner's, 2010).

For the North American providers of hemp used in Dr. Bronner's 18-1 soap, the company works with the fairDeal program, which assures adequate profits return to the farm that at least cover production costs including labor and also extra funds to be reinvested to organic family farming and local community development.

Although Nature's Gate is labelled organic, this does not guarantee that their products contribute to the welfare of the farmer or the community from which they harvest the ingredients. In conclusion, Dr. Bronner's Fair Trade initiative has helped hundreds of farmers increase their standard of living. By establishing markets for their ingredients in these developing areas, Dr. Bronner's products contribute to a greater cause of social well-being and equality rather than corporate inequality and socioeconomic immobility.

Lastly, Dr. Bronner's liquid soap advertises as having eighteen uses that range from body wash, shampoo, laundry, to even brushing your teeth. This is unique to other hygienic products on the market that specialize in one or two uses. As mentioned above, this can help reduce the volume of plastic that is consumed and discarded, which will ultimately shrink the size of our ecological footprint as consumers. A smaller ecological footprint would mean cleaner air due to less plastic production and smaller landfills due to less plastic waste.

Overall, Dr. Bronner's Liquid Soap is a socially and environmentally sustainable product.

IV. Corporate Practices

Dr. Bronner's has a great record when it comes to corporate responsibility. As a company, Dr. Bronner's has taken the lead to ensure that cosmetic products being labeled as natural or organic are not getting away with false labeling. Dr. Bronner's has joined forces with the grassroots non-profit Organic Consumers Association to spearhead the Coming Clean Campaign (Organic Consumers Association, 2010). The campaign is focused on getting rid of body care products with misleading labels and achieving a higher level of regulation around labeling, and making all organic claims meet the USDA standards. It has taken a number of actions that are working towards achieving these goals.

The USDA standards for organic labeling of cosmetics are as follows. All organic agricultural ingredients must be certified by an accredited third party certifier. Products labeled "USDA Organic" must have 95% organic ingredients (not including salt and water). Any product labeled "Made with Organic ____" means that it must contain 70% or more USDA certified organic ingredients (USDA, 2008).

In January 2010, the Organic Consumers Association in conjunction with Dr. Bronner's filed a legal complaint with the USDA National Organic Program (Cummins, 2010). The complaint, according to the Organic Consumers Association website, "argues that, because of USDA inaction, products such as liquid soaps, body washes, facial cleansers, shampoos, conditioners, moisturizing lotions, lip balms, and make-up are advertised, labeled and marketed as 'organic' or 'organics' when, in fact, the products are not 'organic' as understood by reasonable consumers" (Organic Consumers Association, 2010). The complaint itself lists several specific companies and the products and specific ingredients that do not meet legal organic standards. The USDA has not addressed the complaint. The Coming Clean Campaign also submitted a similar document in petition form (Cummins & Rangan, 2010) to the FTC but the FTC has yet to respond.

Although no major action has been seen on the federal level, the Coming Clean Campaign has seen some success in working directly with retailers. In 2010 Whole Foods and the National Cooperative Grocers Association agreed to adopt the Organic Cosmetics Integrity Policy introduced by the Coming Clean Campaign (Organic Consumers Association, 2010). The policy that these businesses have adopted names a specific date, after which all products that do not comply with the USDA certifications will be removed from the shelves. The policy also includes a date which producers of these products must submit their plans for changing the labeling on their products (Organic Consumers Association, 2010). This is a huge step in the right direction when it comes to the regulation of cosmetics. With Whole Foods and the member retailers of the National Cooperative Grocers Association being massive players in the sale of organic cosmetics, the adoption of these policies will make decision making much easier and more transparent for the consumers that buy cosmetics from these retail outlets.

Not only is Dr. Bronner's helping to increase regulation of labeling, they are leading by example in their own line of products. All of Dr. Bronner's products do indeed match up to USDA standards for labeling. The classic line of liquid soaps (including the product being evaluated in this assessment) are labeled as "Made with Organic Oils". These products contain 70% or more USDA certified organic ingredients, and Dr. Bronner's products are certified by USDA-accredited Oregon Tilth. (Dr. Bronner's, 2010) Dr. Bronner's also has a line of USDA certified soaps and other products that meet the 95% organic ingredients standard. They are a company that is not only outspoken in what should be done in this situation, but also a magnificent example of transparent business and labeling practices.

Dr. Bronner's also exercises corporate responsibility by refusing to use any animal testing in the creation of its products. In order to fully ensure that consumers are aware of this, the company is working with the Coalition for Consumer Information on Cosmetics (CCIC), a group of eight different animal rights/ safety groups (CCIC, 2010). Dr. Bronner's includes the CCIC's Leaping Bunny label on their packaging. This standard, according to the CCIC website, "is short for the Corporate Standard of Compassion for Animals, a voluntary pledge that cosmetic, personal care, and/or household product companies make to clear animal testing from all stages of product development. The company's ingredient suppliers make the same pledge and the result is a product guaranteed to be 100 percent free of new animal testing." (CCIC, 2010) By having this labeling, the company also agrees to openly release audits that ensure no animal testing is occurring on any level of production.

In conclusion, the Dr. Bronner's company goes above and beyond in covering the important aspects of corporate responsibility.

V. Recommendations for Consumers/Policy Makers

After analyzing Dr. Bronner's 18-1 Pure Castile Liquid Soap and comparing it to Nature's Gate Lavender Body Wash, we have formulated recommendations for consumers and policy makers. If a consumer were to have to decide between Dr. Bronner's and Nature's Gate, Dr. Bronner's would be the better choice. From source to sink, Dr. Bronner's does all they can to create a quality product with as little negative impact as possible.

On a large scale, there needs to be an increase in awareness concerning the real meaning of "organic". Nature's Gate could be leading consumers astray through "green washing" and thus negatively effecting the credibility of the organic movement. USDA labelling needs to have a stronger presence in the industry to monitor goods and ensure consumers that these products are indeed organic. Retailers also need to do their part to ensure they are not selling falsely labeled "organic" products. We also hope that all retailers begin stocking fair trade, organic, sustainable products as the mainstream choice for shoppers.

The creation of a policy mandating the Food and Drug Administration to regulate the ingredients of all cosmetics would vastly help the health issues associated with dangerous

cosmetics. With chemicals in everyday products that are probable carcinogens, there needs to be much stricter monitoring of consumer hygienic products entering the market. While there are cosmetic databases available, consumers need to be aware that these resources exist and make use of them when buying personal products. Furthermore, companies should be required to disclose all chemicals used in the making of the “fragrance” ingredient to avoid unsafe chemicals entering popular products. Lastly, the FDA and EPA should conduct further tests that can provide more conclusive and definitive information of the effects of chemicals in everyday hygienic products. Until then, we can not be sure if we are lathering ourselves with completely benign body wash.

Dr. Bronner’s has proven to be a great choice for addressing sustainable consumerism in terms of usage behavior. We recommend that more companies consider creating products that have multiple uses, like Dr. Bronner’s 18-1 Pure Castile Liquid Soap. We also hope to see more grocery stores offer options where everyday products can be refilled in a “bulk” section without having to buy new plastic bottles each time the product runs out.

While the majority of Dr. Bronner’s are not sourced locally, besides the North American Hemp, we understand that these plants require certain growing conditions that can only be found abroad. However, we ask Dr. Bronner’s to consider ways to source these ingredients on home soil to reduce transportation miles. On the other hand, the fair trade work being done in these far regions is achieving social sustainability that can be measured against a large carbon footprint.

Overall, Dr. Bronner’s should be the choice in body wash products. With increased awareness of the benefits that fair trade, natural/ organic, and multipurpose products offer to the health of our environment, our bodies, and social welfare, Dr. Bronner’s should find themselves at the top of the body wash industry.

VI. Works Cited

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