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Subject: This would help the S.C.  
Citizens achieve jobs and small  
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## **Hemp, the sober cannabis cousin to marijuana, is making waves in SC**

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While a 2014 amendment allows for growing hemp by “licensed” growers in South Carolina, it didn’t establish what entity performs the licensing. Provided by Greg Bayne

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Walk along the aisles of Whole Foods Market, Trader Joe’s, Earth Fare or health food and supplement specialty stores and you’ll see hemp seeds, hemp protein powder, hemp milk and hemp oil.

**Hemp versus marijuana**

Both hemp and marijuana come from the same plant *cannabis sativa*, but the difference between the two basically lies in its level of tetrahydrocannabinol, or THC, which in higher concentrations produces a euphoria or high.

In Colorado, where marijuana and hemp are legal but regulated, it defines industrial hemp as having a THC concentration of no more than 0.3 percent on a dry weight basis. Cannabis with a percentage of THC above 0.3 percent is considered marijuana. The state's agriculture department registers growers of industrial hemp and samples crops to make sure the plants don't exceed the concentration limit.

Meanwhile, hemp tends to produce more a noneuphoric compound, cannabidiol or CBD, that is showing promise in easing seizures and other conditions. In July, researchers from the University of Minnesota published the results of a study that confirmed the difference between hemp and marijuana by identifying a genetic basis for it.

While the market for hemp seed and fiber in the United States surpassed \$600 million in 2014, nearly all the hemp products such as food, personal care products, clothing and construction material are imported into the United States.

*SOURCES: Colorado Department of Agriculture and University of Minnesota*

Similar to its nutritional powerhouse seed food cousins, flax and chia, the health benefits of hemp seed are increasingly promoted by some health professionals.

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ref=email#> Taking matters into her own hands, Janel Ralph started Palmetto Synergistic Research and worked with an organic grower in Kentucky to create Palmetto Harmony, a CBD oil product named for her daughter, Harmony, now age 6. Provided by Janel Ralph

"I'm high on hemp," says Dr. Ann Kulze, a local physician turned national wellness guru, author and speaker, in an obvious pun on hemp's cannabis cousin, marijuana. "What's remarkable about hemp is that it's so nutritionally complete."

Kulze says hemp seeds provide a high quality "complete protein," meaning it has all of the essential amino acids, which she adds is rare for a plant. Additionally, she says it has a "whopping dose" of fiber, essential fatty acids, vitamins B, D and E, and a "blast of antioxidant phytochemicals."

Those health benefits of hemp are in addition to "industrial uses," such as wax, resin, rope, cloth, pulp, paper and fuel and a growing number of cosmetic products. Environmentally, the plants are an ideal rotational crop, returning nutrients to the soil and not requiring chemical pesticides and fertilizers.

More controversially, the cannabidiol oil extracted from hemp is considered by some holistic health practitioners to have an benefits for an array of conditions and afflictions, most notably relieving epileptic seizures.

Researchers on working on proving that now, but the verdict is still out, despite the anecdotal accounts of parents desperate to find help for their children.

The long-held controversy stems from hemp's physical similarities to marijuana,

even though hemp doesn't have the levels of the intoxicating, psychoactive compound, tetrahydrocannabinol or THC, of the latter.

Tony Bertauski, a horticulture instructor at Trident Technical College and a Post and Courier gardening columnist, said the two plants have different genetics. "My understanding of the differences is the content of THC, the psychoactive ingredient, and fiber content," he said, "Hemp cannabis contains very little THC, not enough to produce a chemical high. Hemp cannabis also has stronger fibers similar to bamboo that, under intense cultivation, can be harvested for various textiles such as ropes, blankets, etc. Marijuana fibers tend to break easier and shred if applied to similar uses."

Despite the array of products sold in the United States, hemp couldn't be grown legally in the United States without a permit from the Drug Enforcement Agency until the last two years. Sources for hemp products in the U.S. came primarily from Canada, France and China.

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Mary Louise Swing, now 8, of Charleston has been taking Palmetto Harmony CBD oil and another hemp oil since last fall to control seizures. Her condition has improved so much that she started playing with toys. Provided by Jill Swing

Efforts to ease hemp growing restrictions continue nationally and in several states, including South Carolina, even as some law enforcement agencies are urging against it.

## **Moms vs. researchers?**

Beyond its health benefits as a food, the more questionable aspect of hemp includes the use of the plant-derived cannabidiol oil, otherwise known as CBD oil.

Some claim the oil relieves the severity of seizures in children and adults, while researchers say it's too early to claim that.

Dr. Jonathan Halford, associate professor at MUSC's Comprehensive Epilepsy Center, is working on a double-blind trial on children with epilepsy using a "super pure" CBD extract, manufactured by United Kingdom-based GW Pharmaceuticals. MUSC is one of nearly 30 sites in the world participating. Halford says, to date, the verdict on the effectiveness of CBD oil for easing severe epilepsy is not known.

Open label studies, which don't make use of a placebo, have shown evidence, but when the studies move on to double-blind, it fails.

"That happens all the time, constantly," says Halford, adding that he anticipates the results of the study he's working on to be reported at the American Epilepsy Society's meeting in December 2016.

As for parents who can't afford to be patient and report that CBD oil works to

ease epilepsy in children, Halford says the flaw is who is reporting success. Parents may have a bias.

That assertion burns up Janel Ralph, whose daughter Harmony has a genetic condition called lissencephaly that was causing her to have thousands of seizures a week. Expensive drugs failed to provide much relief and they still ended up with regular, expensive trips to the emergency room.

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Eucalyptus in Mount Pleasant started selling Palmetto Harmony, along with other hemp and CBD oil products, in May. Co-owner Janice Emplit says, "We have had a tremendous amount of interest in the product." David Quick/Staff

Harmony's condition degraded to the point where the Ralph family actually had started planning her funeral.

Ralph sought out CBD oil on the black market with mixed results, in part because many sources were not reliable. So the resourceful mother, who lives in Myrtle Beach, hit the ground running after the General Assembly approved the hemp amendment. She founded Palmetto Synergistic Research and worked with a grower in Kentucky to develop a "whole plant" CBD oil, which she called Palmetto Harmony.

"I had two choices," recalls Ralph in deciding to get into the business of CBD oil.

"I could get into the industry or sit back and continue to be taken advantage of."

Ralph says Harmony, now 6, started taking the oil a year ago and her seizures have eased to the point where she's been weaned off two drugs, is taking substantially lower doses of three others, ceased visits to the hospital and is actually starting to develop as a child.

"It's shocking to me to see the improvements," says Ralph.

Local advocate Jill Swing also saw a major turnaround in her daughter, Mary Louise, who started taking Palmetto Harmony last fall. The 8-year-old has gone from 800 seizures a day to about 100 to 150. Some days she has only 20. She's been able to reduce her drug use, one by 90 percent and another by 50 percent.

"She's starting to play with toys again," adds Swing.

Both Ralph and Swing, who originally met via social media in "an underground network of parents," add that they feel that whole plant CBD oil is important because of dozens of other compounds seem to work with CBD to provide relief. Questions remain, however, about how CBD oil interacts with other drugs, so potential risks remain.

## **Hemp laws changing**

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