To: MILTON SPRINGUT(trademarks@mosessinger.com)

U.S. Trademark Application Serial No. 97037743 - PLANTS WITH **Subject:** 

BENEFITS - 020075-0202

September 12, 2023 02:04:08 PM EDT **Sent:** 

tmng.notices@uspto.gov Sent As:

## **Attachments**

screencapture-www-wholefoodsmarket-com-product-fresh-water-greens-living-basil-plantwith-roots-b07z5pwbbd-16944863273541

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sells-sky-greenhouse-16945410665901

screencapture-www-actahort-org-books-1263\_1263\_37-htm-16945413645991

## **United States Patent and Trademark Office (USPTO)** Office Action (Official Letter) About Applicant's Trademark Application

U.S. Application Serial No. 97037743

Mark: PLANTS WITH BENEFITS

## **Correspondence Address:**

Milton Springut

**MOSES & SINGER LLP 405 LEXINGTON AVENUE**  THE CHRYSLER BUILDING NEW YORK NY 10174 United States

**Applicant:** Costa Farms, LLC

Reference/Docket No. 020075-0202

Correspondence Email Address: trademarks@mosessinger.com

# REQUEST FOR RECONSIDERATION AFTER FINAL ACTION DENIED

Issue date: September 12, 2023

**Applicant's request for reconsideration is denied.** *See* 37 C.F.R. §2.63(b)(3). The trademark examining attorney has carefully reviewed applicant's request and determined the request did not: (1) raise a new issue, (2) resolve all the outstanding issue(s), (3) provide any new or compelling evidence with regard to the outstanding issue(s), or (4) present analysis and arguments that were persuasive or shed new light on the outstanding issue(s). TMEP §§715.03(a)(ii)(B), 715.04(a).

Accordingly, the Trademark Act Section 2(d) Refusalmade final in the Office action dated February 8, 2023 is **maintained and continued**. *See* TMEP §§715.03(a)(ii)(B), 715.04(a).

Applicant has submitted the declarations of two employees in support of the arguments that, while the marks are similar, the goods and services are distinct, the trade channels differ, and consumers are not likely to view the goods and services as emanating from the same source. While carefully considered, the arguments have been found to be unpersuasive.

In support of its arguments, applicant states that wellness information and related products are not generally associated with live plants and flowers, and further, that CBD and its association with cannabis distinguishes it from ornamental flowers and plants. This argument is unpersuasive because the evidence of record shows that cannabis can be considered an ornamental flower, and many ornamental flower growers also grow live plants and flowers.

Moreover, "live plants" include live oregano, thyme, rosemary, and other plants sold in grocery stores alongside CBD. The attached evidence from Whole Foods and other sites discusses the value of live plants and other plant-based products in maintaining wellness.

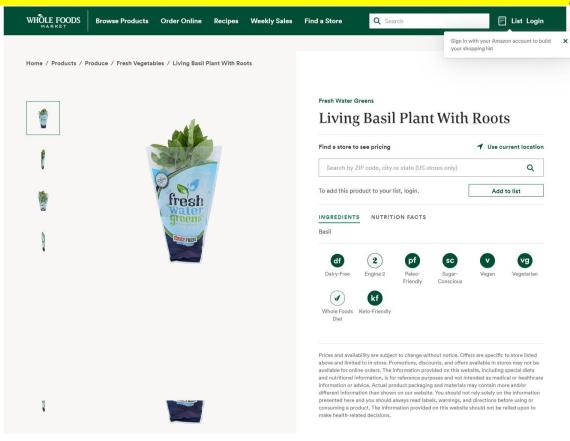
The assertions made in the declarations submitted by applicant do not refute the evidence of record. T herefore, applicant's arguments are unpersuasive.

**If applicant has already filed an appeal** with the Trademark Trial and Appeal Board, the Board will be notified to resume the appeal. *See* TMEP §715.04(a).

If applicant has not filed an appeal and time remains in the response period for the final Office action, applicant has the remainder of that time to (1) file another request for reconsideration that complies with and/or overcomes any outstanding final requirement(s) and/or refusal(s), and/or (2) file a

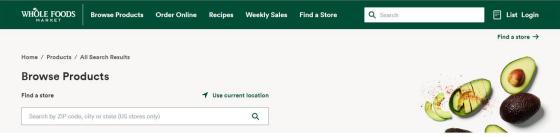
notice of appeal to the Board. TMEP  $\S715.03(a)(ii)(B)$ .

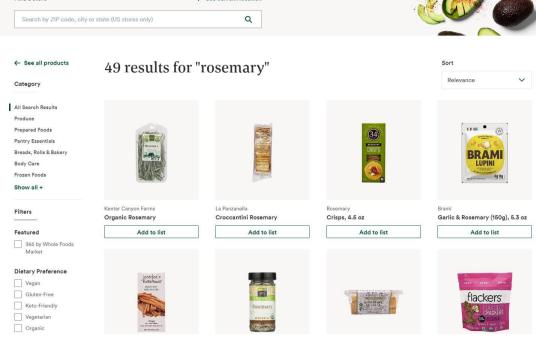
/Shaila Settles Lewis/ Shaila Settles Lewis Examining Attorney LO114--LAW OFFICE 114 (571) 270-1527 Shaila.SettlesLewis@USPTO.GOV



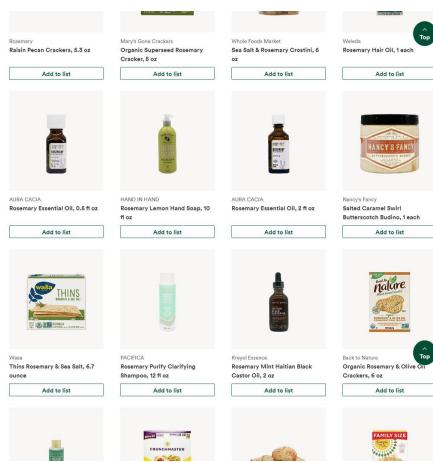


https://www.wholefoodsmarket.com/search?text=rosemary at 10:40:27, 09/11/2023





Dairy-Free Sugar-Conscious Paleo-Friendly Whole Foods Diet Kosher Low-Fat	JENNIFERS HOMEMADE Rosemary Breadsticks, 5 oz Add to list	366 Everyday Value® Rosemary, 0.56 ounce Add to list	Firehook Rosemary Salt Crackers, 5.5 oz Add to list	Doctor in the Kitchen Organic Rosemary Flackers, 5 oz Add to list
Want delivery and pickup? Order online  Planning an event? Shop catering & entertaining Need help? See our FAQ's	Carr's Rosemary Crackers, 5 oz Add to list	365 by Whole Foods Market Rosemary Essential Oil, 1 each	Simply Organic Organic Resemary, 1 each Add to list	Top 366 by Whole Foods Market Seasoning, Rosemary, 0.46 oz Add to list
	AVALON ORGANICS Rosemary Conditioner, 11 oz	Morton & Bassett Organic Rosemary, 0.8 oz	Lark Ellen Farm Almond Pate - Lemon Rosemary,	Whole Foods Market Lemon Rosemary Chicken Breast
	Add to list	Add to list  MARYS  GONE CRACKERS  Sport Sould	Add to list	WELEDA

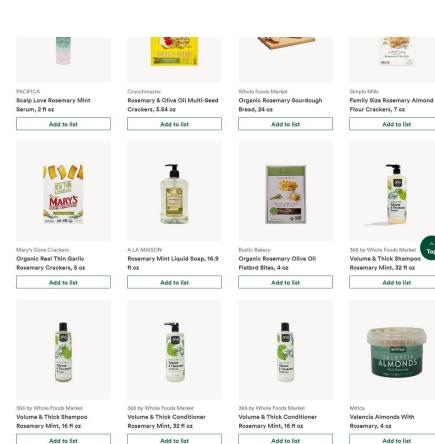












WEETB.



Rosemary Truffle Popcorn, 4 oz

Add to list



Almond Flour Crackers, Rosemary & Sea Salt, 4.25 oz

Add to list



Roasted Garlic, Dijon & Rosemary Marinade & Sauce, 10 fl oz



Rosemary & Olive Oil Harv Whole Wheat Cracker, 8.5 oz







Alexia Foods
Crispy Rosemary Fries, 16 oz

Culture Pop Soda Watermelon Lime & Rosemary Sparkling Soda 4pk, 12 fl oz

Add to list



Rosemary Toketti Di Pane Carasau Crackers, 7 oz

Add to list



AVALON ORGANICS

Avalon Organics® Volumizing
Rosemary Shampoo, 11 fl oz

Add to list



Add to list

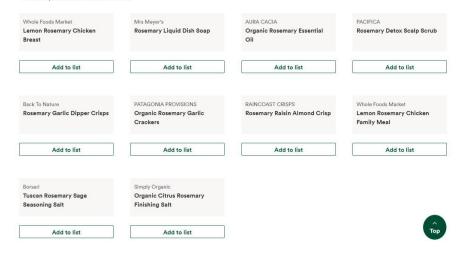
Brew Dr. Kombucha Clear Mind Kombucha - Green Tea with Rosemary and Mint, 4pk 12oz Cans

Add to list



## More Results

The below products are also sold in store.



Prices and availability are subject to change without notice. Offers are specific to store listed above and limited to in-store. Promotions, discounts, and offers available in stores may not be available for online orders. The information provided on this website, including special diets and nutritional information, is for reference purposes and not intended as medical or healthcare information or advice. Actual product packaging and materials may contain more and/or different information than shown on our website. You should not rely solely on the information presented here and you should always read labels, warnings, and directions before using or consuming a product. The information provided on this website should not be relied upon to make health-related decisions.



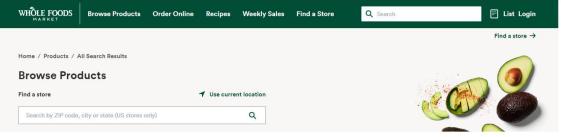


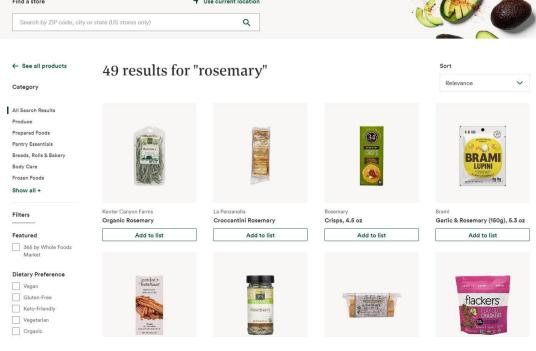
Weekly Sales Responsible Sourcing About Whole Foods Market Visit customer care  $\rightarrow$ Quality Standards

Community Giving **Browse Products** Our Values Delivery and Pickup Departments Connect With Us Information and Potential Suppliers Meals and Catering **Environmental Stewardship f v 0 0 0** Amazon Prime at Whole Foods Gift Cards ☐ Sign up for email Tips and Ideas Recipes Product Data By

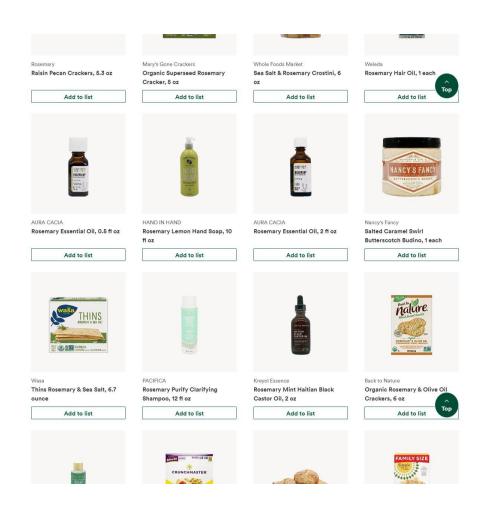
Product Data By

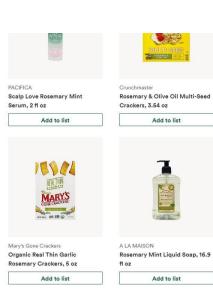
https://www.wholefoodsmarket.com/search?text=rosemary at 10:42:55, 09/11/2023





Dalry-Free Sugar-Conscious				
Paleo-Friendly	JENNIFERS HOMEMADE  Rosemary Breadsticks, 5 oz	365 Everyday Value® Rosemary, 0.56 ounce	Firehook Rosemary Salt Crackers, 5.5 oz	Organic Rosemary Flackers, 5 oz
Whole Foods Diet Kosher Low-Fat	Add to list	Add to list	Add to list	Add to list
Want delivery and pickup? Order online C Planning an event? Shop catering &	(Girs) minimum	Rosemby 11 to 10 t		Numerical III
entertaining	Carr's	365 by Whole Foods Market	Simply Organic	365 by Whole Foods Market
Need help? See our FAQ's	Rosemary Crackers, 5 oz	Rosemary Essential Oil, 1 each	Organic Rosemary, 1 each	Seasoning, Rosemary, 0.4
	Add to list	Add to list	Add to list	Add to list
		THE STATE OF THE S	ALMORA PARTE	
	AVALON ORGANICS  Rosemary Conditioner, 11 oz	Morton & Bassett Organic Rosemary, 0.8 oz	Lark Ellen Farm Almond Pate - Lemon Rosemary,	Whole Foods Market Lemon Rosemary Chicken Breast
	Add to list	Add to list	3 oz Add to list	Add to list
	rescond const	MARYS GONE GRACEES	Among have been a facility of the second of	WELEDA  PROMITY VANA  THE CONTROL OF





Volume & Thick Shampoo Rosemary Mint, 16 fl oz

Add to list







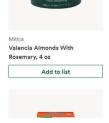
Rustic Bakery Organic Rosemary Olive Oil Flatbrd Bites, 4 oz

Whole Foods Market
Organic Rosemary Sourdough
Bread, 24 oz

Add to list







ALMONDS

Simple Mills
Family Size Rosemary Almond
Flour Crackers, 7 oz

365 by Whole Foods Market Volume & Thick Shampoo Rosemary Mint, 32 fl oz

Add to list

Add to list



365 by Whole Foods Market Volume & Thick Conditioner Rosemary Mint, 32 fl oz









Add to list



Rosemary Truffle Popcorn, 4 oz

Add to list



Almond Flour Crackers, Rosemary & Sea Salt, 4.25 oz

Add to list

Roasted Garlic, Dijon & Rosemary Marinade & Sauce, 10 fl oz

Add to list



Rosemary & Olive Oil Harvest Whole Wheat Cracker, 8.5

Add to list



Alexia Foods
Crispy Rosemary Fries, 16 oz

Add to list

Culture Pop Soda Watermelon Lime & Rosemary Sparkling Soda 4pk, 12 fl oz

Add to list



Rosemary Toketti Di Pane Carasau Crackers, 7 oz

Add to list



AVALON ORGANICS

Avalon Organics® Volumizing
Rosemary Shampoo, 11 fl oz

Add to list



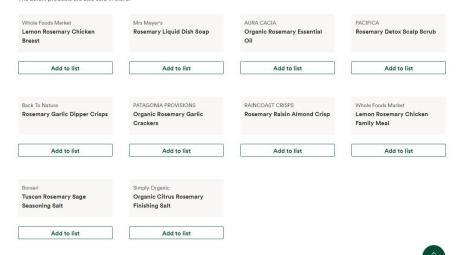
Brew Dr. Kombucha Clear Mind Kombucha - Green Tea with Rosemary and Mint, 4pk 12oz Cans

Add to list



## More Results

The below products are also sold in store.

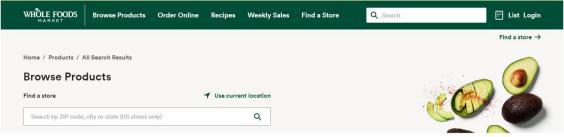


Prices and availability are subject to change without notice. Offers are specific to store listed above and limited to in-store, Promotions, discounts, and offers available in stores may not be available for online orders. The information provided on this website, including special diets and nutritional information, is for reference purposes and not intended as medical or healthcare information or advice. Actual product packaging and materials may contain more and/or different information on our website. You should not rely solely on the information presented here and you should always real labels, warnings, and directions before using or consuming a product. The information provided on this website should not be relied upon to make health-related decisions.









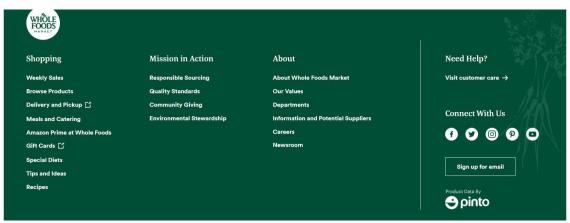
## ← See all products 2 results for "fresh thyme" Category All Search Results Produce Snacks, Chips, Salsas & Filters Dietary Preference Uegan Vegan Keto-Friendly PRODUCE Organic Thyme Vegetarian Gourmet Hummos Thyme, 8 oz Organic Add to list Add to list Dairy-Free Sugar-Conscious Paleo-Friendly Prices and availability are subject to change without notice. Offers are specific to store listed above and limited to in-store. Promotions, discounts, and offers available in stores may not be available for online orders. The information provided on this website, including special diets and nutritional information, is for reference purposes and not intended as medical or healthcare information or advice. Actual product packaging and materials may contain more and/or different information than shown on our website. You should not rely solely on the information presented here and you should always read labels, warnings, and directions before using or consuming a product. The information provided on this website should not be relied upon to make health-related decisions. Whole Foods Diet Engine 2 Want delivery and pickup? Order online

Planning an event?

Shop catering & entertaining

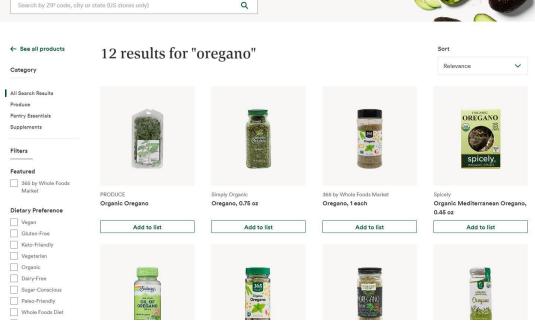
Need help? See our FAQ's





https://www.wholefoodsmarket.com/search?text=oregano at 10:44:46, 09/11/2023





Kosher Low-Fat Engine 2 Want delivery and				
	Solaray OIL OF OREGANO, 60 softgels	365 by Whole Foods Market Organic Seasoning, Oregano, 0.35 oz	Frontier Co-op Organic Oregano Leaf, 0.36 oz	GREEN GARDEN Organic Freeze Dried Oregano, 0.18 oz
pickup? Order online ☐	Add to list	Add to list	Add to list	Add to list
Planning an event? Shop catering & entertaining Need help? See our FAQ's		Torquio Orquio	Cold Congent	Organia Dicad Domatoes
	TONNINO TUNA Oregano Yellowfin Fillets In Olive Oil, 6.7 oz	365 by Whole Foods Market 365 Everyday Value® Oregano (0.32 Oz)	Gala Herbs Gala Oil Of Oregano, 120 vegan liquid phyto-caps	366 by Whole Foods Market Organic Shelf-Stable Tomatoes, Diced (with Basil, Garlic, & Oregano), 14.5 oz
	Add to list	Add to list	Add to list	Add to list
	More Results The below products are also sold in str NORTH AMERICAN HERB & SPICE Oil Of Oregano	SPICELY Organic Oregano Mediterranean	Gala Herbs Oil of Oregano Liquid Caps	366 by Whole Foods Market Oil of Oregano, 1 each
	Add to list	Add to list	Add to list	Add to list
	SEGGIANO Organic Pizza Sauce with Wild Oregano	Garden Of Life Organic MYKIND Immune Drops Oil of Oregano, 1 each		

Add to list

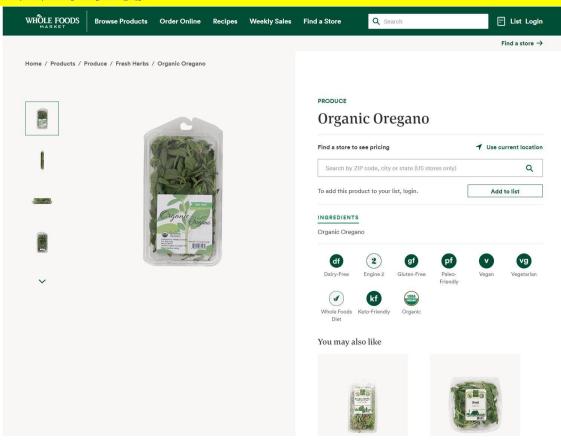
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Prices and availability are subject to change without notice. Offers are specific to store listed above and limited to in-store. Promotions, discounts, and offers available in stores may not be available for online orders. The information provided on this website, including special diets and nutritional information, is for reference purposes and not intended as medical or healthcare information or advice. Actual product packaging and materials may contain more and/or different information than shown on our website. You should not rely solely on the information presented here and you should always read labels, warnings, and directions before using or consuming a product. The information provided on this website should not be relied upon to make health-related decisions.











Organic Poultry Herbs

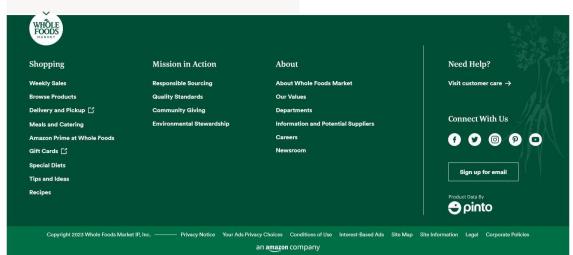
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KENTER CANYON

Herb Basil 4oz Organic

Add to list

Prices and availability are subject to change without notice. Offers are specific to store listed above and limited to in-store. Promotions, discounts, and offers available in stores may not be available for online orders. The information provided on this website, including special diets and nutritional information, is for reference purposes and not intended as medical or healthcare information or advice. Actual product packaging and materials may contain more and/or different information than shown on our website. Vox should not rely solely on the information presented here and you should always read labels, warnings, and directions before using or consuming a product. The information provided on this website should not be relied upon to make health-related decisions.











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# **DUAL-ACTION IMMUNE SUPPORT** HAS ARRIVED

LEARN MORE







## Immunity Inside and Out



Tim Person

October 22, 2013

Trends and tips for natural supplements that help us stay well.
Vitamin C. Echinacea. Zinc. These supplements are some of the hottest tickets on the Immune Health Express. What was once perhaps rightfully reparded as a seasonal by as recently shot into the fast lane of year-round hot sellers for several reasons that we'll discuss down the road.

"Immunity is one of the fastest growing segments in the natural products industry," says Jay Levy, director of sales at Wakunaga of America Co.,





Levy says that the Natural Marketing Institute's 2013 Healthy Aging Database shows one-half of U.S. adults claim to be of supporting their immune health at some point in life, with a significant spike in concern among those in their 30s. It is a category with broad and consistent appeal, and being knowledgeable about it will put you in good stead with customers of all ages.

So, hop aboard as we take a tour of the supplements and the studies that many category leaders are focusing on nov

### Top Supplements and New Research

Well-known category leaders have some extra company with up-and-coming immune health supplements. "While the focus continues to be on foods and supplements that are high in antioxidants, other nutrients such as herbs, probiotics and phytosterols are gaining awareness among consumers for their immune supportive properties," Levy says.

Probiotics. Though consumers still usually associate them with digestive benefits, the growth of probiotics and prebiotics in the immune health space is a major trend to note. Dan Lifton, CEO of Quality of Life Labs, Purchase, NY, says their overall popularity has gotten a boost from the high-profile promotion of yogurt products by key consumer packaged goods players.

A large shift has taken place very recently with the realization that pro- and prebiotics can impact immune health in other areas besides the gastrointestinal tract, according to Dallas Clouatre, Ph.D., consultant for R&D to Jarrow Formulas, Inc., Los Angeles, CA.

Probiotics can strengthen the barrier function of intestinal walls and stimulate the body's production of natural killer (NK) cells and T cells, Levy

says. One study into the effects of probiotic strains on Clostridium difficile found specific immunomodulatory benefits (1).

Some additional applications for probiotics in the immune health category will be discussed later

Antioxidants. Often associated with heart health, aged garlic extract (AGE) contains compounds like S-allyl cysteine that provide antioxidant benefits for immune health. Later, we'll hear about research that found it could help reduce the duration of colds.

Oregano oil has antioxidant and antibacterial properties, thanks to a phenol it contains called carvacrol. "Studies suggest that the oxygen molecules in carvacrol team up with the water in the body to create heat that kills bacteria," says Levy, Researchers recently found that oregano, in combination with sage, modulated innate immunity in an animal model by benefiting nitric oxide status and phagocytic activity (2).



Like vitamin C (which we will discuss more in the context of recovery), zinc is essential for building immunity, and offers direct antiviral activity, says Michele McRae, C.N., senior director of research, formulation and quality for Rainbow Light Nutritional Systems, Inc., Santa Cruz, CA.

In fact, zinc plays a part in many immune system reactions, "It promotes the destruction of foreign particles and microorganisms, acts as a protectant against free-radical damage, acts synergistically with **vitamin A**, is required for proper white blood cell function and proper T cell levels, and is a necessary cofactor in activating serum thymic factor," says McRae. Thymic factor is a hormone that has "profound immune-enhancing properties," she

Over 300 enzymes in the body are zinc-dependent, adds Susan Hazels

### ■ LATEST PUBLICATION











CRN: Fish Oil Study Demonstrate "Amazing Lack of Understanding" About Why Consumers Use Supplements



Natural Products Industry News Briefs: IFF, GC Rieber VivoMega, Vantage Nutrition,



Hot Products: August 2023







colds and flus increase each and every year," Meletis says.

Mitmesser, Ph.D., director of nutrition research for American Health/Ester-C, Ronkonkoma, NY. Zinc helps stabilize the structure of certain proteins, and zinc deficiency can increase the vulnerability of cell membranes to oxidative stress, she explains.

ne Power of Omega-7

SCIENCE DELIVERS

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obyvinz zinc, order inherens and use enhanced as elemental as expendent are supported for the immune system, according to Chris D. Meletis, N.D., director of science and research for Trace Minerals Research, Ogden, U.T. Vitamin D also exerts massive influence, he says, offering support to autoimmune responses and cellular integrity. "It is no surprise that vitamin D levels drop at the same time that

Indeed, "there has been strong growth in the vitamin D category due to emerging research on the link between vitamin D deficiency and weakened immunity," says Lifton.

For much more on vitamin D, we turn to Trisha Sugarek MacDonald, B.S., M.S., director of R&D/national educator for Bluebonnet Nutrition Corp., Sugar Land, TX. The physiologically active form of vitamin D, calcitriol, functions as a hormone in the body by binding with vitamin D receptors. It has been recognized for significant and widespread immune effects throughout the body, she says, affecting both arms of the immune system. According to Sugarek MacDonald, vitamin D's myriad effects as a potent immunomodulator include increased production of peptides that may inactivate viruses; increased production of antimicrobial peptides such as defensin; enhancement of regulatory T cells; decreased inflammation through cytokine modulation and countless others.

The regulation of inflammation is of central importance to immune health, and supplementing with antioxidant compounds can be an effective way of addressing the issue. Alpha-lipoic acid is one such compound, and according to Clouatre, most supplements include equal amounts of the (R) and (S) forms of this antioxidant. He adds, however, that the (R) form, also called RALA, is the only one made naturally by the body. "RALA promotes the synthesis of glutathione and the induction of Phase II detoxification enzymes," both integral to immune responses, Clouatre says.

The carotenoid class of compounds can also deliver antioxidant benefits. Bryan See, regional product manager for Carotech Inc., Edison, NJ, adds that, "Some carotenoids such as beta-carotene and alpha-carotene act as precursors of vitamin A." He points out that the benefits of vitamin A for immune support are well established. It has an approved health claim from the European Food Safety Authority (EFSA), allowing the use of phrases such as "Vitamin A helps the proper functioning of the immune system" on

See notes, however, that carotenoid supplements may be preferable to vitamin A because high vitamin A intake can lead to toxicity. Pro-vitamin A noids will only undergo the cleavage process to become vitamin A as needed.

Vitamin E is another potent antioxidant you should be familiar with. "Tocotrienol, a form of vitamin E, has also been found to significantly improve immune response," See says. Tocotrienol exists in four forms: alpha, beta, gamma and delta Recent research into proprietary tocotrienol complexes (Tocomin and Tocomin SupraBio from Carotech) provides a window into their potential immune benefits.

In an animal study, researchers fed old and young mice the proprietary tocotrienol, and found significant improvement in age-related decline in T cell function. The supplement regimen also reduced C-reactive protein, an inflammatory marl in the liver of both groups of mice (5).



Hazels Mitmesser highlights the role of a familiar set of nutrients for immunity. "Several lines of research indicate a role for omega-3 fatty acids in the modulation of the immune system, but human intervention trials measuring clinical outcomes are still evolving," she says. Omega-3s are needed to form part of the membranes of immune cells, she explains, and it has been discovered that increased omega-3 intake is linked with higher PA concentrations in immune cell membranes.







Vaccines support. Another study that See cites, a randomized, doubleblind, placebe-controlled human trial, discovered that the tocotrienol complex just mentioned improved immune responses to a tetarus vaccination. Some 108 young women were divided into a control and an experimental group, and those who took the supplement rather than a placebo saw increased interferon-g and interleukin (IL) -4 levels, leading researchers to conclude that tocotrienol could improve responses to immunizations (6).

An immune ingredient derived from **arabinogalactan** (ResistAid from Lonza) was used to increase the antibody response in healthy volunteers receiving a pneumonia vaccine, according to Bryan Rodriguez, commercial

 $development \,manager \,for \,Lonza, \,Allendale, \,NJ \,(14). \,\, "Vaccination \,studies \,of \,this \,type \,are \,used \,to \,study \,general immune \,function, \,with \,the \,vaccination \,being \,the \,immune \,system \,stressor," \,he \,says.$ 

Designed to deliver "triple action" immune support, Rodriguez says that this ingredient can help increase beneficial immune cell populations. It has been found to help modulate the two arms of the immune system (innate and adaptive) from the gastrointestinal tract, so that the whole system can respond appropriately when challenged by foreign substances. Finally, its flavonoid content delivers antioxidant support, as well.

Rodriguez touts the ability to support appropriate immune responses, as opposed to indiscriminately up-regulating or stimulating the immune system. 'A stimulatory approach simply forces the entire immune system into action. Continua stimulation may lead to reduced capability of the immune system as resources are called upon to react and may be depleted.' The savs.

A wide selection of mushrooms has traditionally been used to support immunity, says Mark Kaylor, vice president of education and research for Mushroom Wisdom Inc., East Rutherford, N.J. These include shiltake, reishi and cordyceps. More recent focus, however, has been placed on maltake mushroom for its ability to activate healthy immune responses. Kaylor says that when scientists compared maitake with other traditional mushrooms, it was found to be the most effective in supporting immunity, especially a specific component of maitake called D-Fraction.

Lifton also notes growth in demand for mushroom-based products. He says new research on a patented, fermented extract of Japanese medicinal mushrooms (AHCC) showed it could enhance the efficacy of flu shots. Higher antibody titers against influenza B virus were found in those who had supplemented than in those who had received the flu shot alone (8). Other research has examined the ingredient's potential in cases of HPV.

Cold and flu research. Before detailing the way a few more antioxidant compounds can help with the common cold, Sugarek MacDonald gives us a small primer on the subject. Characterized by a group of symptoms presenting in the upper respiratory tract, the

common cold is caused by several different viruses, the most notorious being rhinovirus, she says. The cold virus enters and attaches to the lining of the nose and/or throat, stimulating a white blood cell (WBC) response.

Unless you've dealt with that exact strain before, the first line of defense fails, and the body sends in more immune troops. The nose and throat become inflamed and produce excess mucus. Energy is sapped, and congestion, sore throat and sneezing ensue. Both cold and flu cause coughing, headache and chest discomfort, but the flu also typically brings a fever and other symptoms like weakness, Sugarek MacDonald says.



More than 100 cold viruses are known, and new flu strains evolve every few years. Antibiotics won't help with either of these types of viral invaders. To make matters wrose, no medications specifically treat the common cold, and relatively few antiviral medications can be obtained to treat flu cases. For Sugarek MacDonald, this all means that the burden of reducing the incidence and severity of these conditions falls in part to supplements. "Cortain natural agents like elderberry, resveratrol and quercetin have the ability to interfere with the way cold and flu viruses affect and alter healthy DNA in your cells," she says.



In general, such supplements can help to block the replication of the virus inside the body, and work with the immune system to help kill and suppress virus cells. Elderberry fruit extract provides flavonoids, which are potent antioxidants. By donating electrons to free radicals, antioxidants like flavonoids can neutralize them, thereby preventing oxidative damage to cells. A recent in vivo trial found that the antioxidant activity of elderberry contributed to its anti-influenza A virus activity, according to Sugarek MacDonald. Levels of immunoglobulin A (IgA), an antibody critical to mucosal immunity, were increased (7).

Resveratrol is a natural antibiotic produced within plants as a response to injury. "Resveratrol protects the plant against UV radiation, fungal attacks and/or infection and can be beneficial for humans in the same manner," says Sugarek MacDonald, noting past studies have documented the way resveratrol benefits flu cases by inhibiting replication and reducing airway inflammation.

The flavonoid quercetin is a natural anti-viral compound, in part due to its ability to inhibit reverse transcripterase, needed for the replication process of retroviruses. Oral quercetin supplementation has been found to increase lung concentrations of various antioxidants like catalase and superoxide dismutase, she says. This allows for protection against the oxygen-derived free radicals released during an influenza infection.

Medicinal mushrooms, meanwhile, are also believed to stimulate immunity at the cellular level, according to Christopher Hobbs, Ph.D., L.Ac., director of herbal science for Rainbow Light. The National Institute of Health provides funding for the study of medicinal mushrooms, he says, adding that he believes consumers are becoming more aware of their immune benefits.

Lifton notes that proprietary forms of other established supplements like vitamin C and herbs like andrographis have been developed for the immun support market. "Andrographis is a bitter herb that comes from tropical countries, and is extremely popular throughout southeast Asia, China and India for treating fevers and viral infections," says Hobbs. He calls andrographis and elderberry perhaps the most scientifically studied herbs for flu support. One study he points to found that a group taking acetaminophen along with andrographis had fewer symptoms, including cough and fatigue, than a group taking acetaminophen only (9).

Hobbs also advises that berberine sulfate has been shown to have broadspectrum antibiotic activity, and is therefore helpful in preventing secondary bacterial infections due to viral infections of the upper respiratory tract.



According to Eileen Sheets, managing director of Bioforce USA, Ghent, NY, experts feel that a combination of antiinflammatory and anti-viral effects is the best approach to intervening in the common cold. Recent research into echinacea found that its anti-viral activity is concentrated in the aboveground herb and flower heads, and not in the roots (3).

In contrast, "previous studies have demonstrated the anti-inflammatory potential of alkylamides that are found primarily in the roots of echinace," Sheets asys. These alkylamides have been found to bind to CC-2 receptors and mediate the inflammatory response. One study found that just 5% of the root can modulate the inflammatory marker TNF-a as much as 95% of the herb (4). Sheets notes that this ratio is reproduced in a proprietary echinacea (Echinaceaforce from Bioforce USA), providing the synergy of anti-virial and anti-inflammatory effects.



Meanwhile, Clouatre says recent findings at the 2nd World Congress on Immunity Ingredients found specific probiotic strains can influence immune responses to such challenges as colds, flu and other common infections.

Prebiotics (which serve as food for probiotics) have been shown to cut down on colds and flu by as much as 40% in certain contexts (10). "Interestingly, some ingredients that are usually presented almost exclusively as immune boosters also are prebiotics that



ncourage the growth of desirable intestinal bacteria," Clouatre says. A study Clouatre cites found that one prebiotic ingredient (Epicor from Embria Health Sciences) can lead o gradual beneficial changes in the gut probiotic community and a reduction in potential oathogens (11).

He adds that the most active area of research in this segment is symbiotics, or combinations of pre- and probiotics. "Synbiotic fermentations have demonstrate ranging forms of protection, including not only immune activation, but also antiinflammatory effects and reduced chemo-activation," Clouatre says.

Oral health. Nena Dockery, technical support manager for Stratum Nutrition, a Novus Intl business, St. Charles, MO, points us to problotics from a different angle. "One area that we are just beginning to recognize for its critical role in immune system health and overall wellness is oral health. Many good substances, as well as bad, enter our body through the oral cavity," she says. A probiotic ingredient designed to benefit the mouth and throat (BLIS K12) can help protect a healthy immune system, starting in the mouth, she explains.

A strain of Streptococcus salivarius, the probiotic secretes bacteriocin-like-inhibitory-substances (BLIS) that help maintain a healthy oral cavity. Not initial studies in this area focused on finding the right BLIS-secreting strains, but Dockery says that recent research has focused on supplementation and results. Two recent studies from Italy found reduced incidence of common ear, nose and throat ailments in children, and similar benefits for upper respiratory immune support in adults (12) (13).

Post-exercise immune support. Richard G. Mueller, CEO of Biothera, Eagan, MN, refers us to a **beta 1,3/1,6 glucan** ingredient (Wellmune from Biothera) that is derived from a proprietary strain of baker's yeast. The Journal of Dietary Supplements recently published dual clinical trials demonstrating the immune supportive effects of this ingredient in athletes, Mueller says. Research has shown that intense exercise weakens immunity in the period



"The two studies involved marathoners and stationary cyclists exercising in

The two studies involved maratinoners and stationary cyclistic secrecising in a heat-stress lab,7 says Mueller. In maratinoners, a statistically significant reduction in days with respiratory tract infection symptoms was found post-competition. In cyclists, subjects supplemented for 10 days with the ingredient or placebo. Those taking the supplement ended up with a 32% increase in salivary immunoglobulin (1g-A) at two hours post-exercise, a sign of improved mucosal immunity. Mueller points out that these results do not just indicate applications for athletes, but instead back up other research demonstrating immune benefits for those dealing with daily stresses.

### Once III What Then?

Once iii, what i nenr
There is obviously tremendous overlap between the way some supplements help prepare the immune system for
challenges, and the way they can aid it in dealing with challenges once they arrive. The latter timeframe we might term
recovery. There is also the aftermath of illness to consider, when the body must replenish its stores of immune cells. For
the response and recovery period in dealing with, say, the common cold, most people quickly think of vitamin C as a primary helper.



Humans do not manufacture vitamin C internally like other animals. McRae ells us. Without adequate vitamin C, WBC responses can become ompromised. Hazels Mitmesser says this is because the vitamin C content WBCs is relevant to their ability to engulf and destroy invaders. She says nat a unique, patented form of vitamin C (Ester-C) stays in WBCs longer.

here is also evidence that the vitamin might enhance the proliferation of Tlymphocytes, McRae adds, and that vitamin C protects tissues against reactive oxygen species produced by phagocytes during a viral infection. 'Vitamin C is a key antioxidant that protects cell and blood components from free radical damage," echoes Hazels Mitmesser. For these reasons, it s critical for immune responsiveness.

Meletis says he looks at vitamin C beyond the immune spectrum. It is well nown that deficiency can lead to scurvy, and issues like gum disease or



poor wound healing. When the body is under stress, Meletis says, it uses vitamin C, but because humans don't synthesize it, we don't achieve its stress buffering effects as readily.

Though there is no fine line to identify where prevention ends and recovery begins, there are other supplements to single out besides vitamin C that

AT LAST, DIGESTIVE PEACE!

help with acute response. Consumers, meanwhile, are eager to identify quick fixes. Sugarek MacDonald recommends considering each of vitamin C, vitamin D3, zinc and American ginseng for responding quickly to colds and flu.

She says zinc and vitamin C work well in concert, especially in lozenge form, to support antioxidant levels after contracting a cold, as well as for maintaining the airway's mucosal lining. Recent research investigated the use of 1,000 mg of vitamin C and 10 mg of zinc in lozenge form for the common cold. "In a pooled analysis of both studies, it was reported that vitamin C plus zinc reduced rhinorrhea over 5 days of treatment when compared to placebo," Sugarek MacDonald says (15).

Up to a 61% reduction in the duration of the common cold or flu was found in a recent study on AGE at the University of Florida (16). "During their study, 120 cold and flu sufferers also experienced a 21% reduction in the number of symptoms and 58% fewer missed work days due to their illness," Levy says. The researchers attributed this to aged garlic's boosting of T cells, especially NK cells.

in a double-blind, placebo-controlled human clinical trial, one ingredient already discussed (EpiCor) was shown to significantly increase NK cell activation in as little as two hours. "The job of NK cells, which are a type of WBC that circulate in our blood and tissues, is to quickly and aggressively seek out formerly healthy cells that have been damaged (e.g., a tumor, virus) and then cause that damaged cell to kill itself through a process called 'programmed cell death,' which scientists describe as cell apoptosis,' says Larry Robinson, vice president of scientific affairs for Embria Health Sciences, Ankeny, IA.

Robinson explains, as an aside, that since the typical goal of immune strengthening is to help deal with the stress of everyday living, research should be conducted to match these conditions. Research into suppressed immune systems, like that involving athletes post-competition, should be balanced by research on normal, healthy adults.

Clouatre presents another option for acute response. "There is a tendency to overlook a number of traditional products simply because they are not entirely new, which is a mistake. Some items in the traditional immune

arsenal continue to be the objects of successful human tests; he says, citing lactoferrin as an example. He says its track record of supporting immune health in the face of challenges is supported by a recent study, showing that a combination of lactoferrin with whey protein could decrease incidence of colds (17).

Explaining this impact, Clouatre says that at least half of the phagocyte immune cells in the body are found in the gastrointestinal tract, the place where potential invading pathogens are encountered and where "active skirmishes between pathogens and our immune system" occur. Lactoferrin reduces the pathogenic burden, freeing immune resources to fight back, and whey protein protects the body with precursors to antioxidants, together forming an effective combination.

Mushroom-based AHCC can be of benefit after individuals experience flu symptoms, Lifton says. How? It works by increasing the number and activity of NK cells, macrophages, dendritic cells and T cells. He says it has also been clinically shown to beneficially increase cytokine activity.



"Research on herbs such as andrographis, oregano oil and berberine sulfate continues to support their benefits in helping to ease sinus and respiratory discomfort. These herbs also mobilize the body's acute response," Hobbs adds.

For bacterial infections, antimicrobial support in the upper respiratory area can be of help. Sugarek MacDonald says, and she describes the use of olive



leaf and oil of oregano for this purpose. As antibiotic drugs have some problems associated with their use, she feels it is advantageous to consider natural antimicrobial agents like these, to which bacteria cannot develop their own immunity.

Olive leaf extract, in addition to acting as an antioxidant, exhibits antimicrobial action against pathogens such as Salmonelia typhi, Vibrio parahaemolyticus, Staphylococcus aureus (including penicillin-resistant strains), Klobsielia pneumoniae and E. coli, each agents of intestinal or respiratory tract infections in humans, according to Sugarek MacDonald. The compound usually credited for olive leaf's antimicrobial properties is oleuropein.

"Oil of oregano may not inhibit the influenza virus, but it sure does help your lungs recover from a bout with a cold or flu by thinning the mucus in the upper respiratory tract, therefore allowing for easier breathing and faster removal of the infecting virus," Sugark MacDonald says, emphasizing that only oregano oil produced from wild Mediterranean species has been proven to demonstrate these properties.

There is, of course, the need to soothe sore throats when such illnesses present themselves. A natural cough syrup comprised of five herbal extracts, six essential oils and wildflower honey is one answer, according to Karen Page, national sales manager for Penn Herb Company Ltd., Philadelphia, PA, U.S. importer of Oilsas Herbal Remedies.

Developed in Europe over 100 years ago, the formula provides natural antioxidant support, strengthens lung function and supports mucosal membranes in the respiratory tract, helping to clear bronchial passages. "A study conducted at the Pennsylvania School of Medicine came up with honey as a safe alternative to effectively treat coughs and soothe sore throats." Page savs.

The need for immunity doesn't cease once illness is gone, as the next immune challenge could be right around the corner. "The combination of shiftake and royal agaricus! have found to be an excellent re-builder, useful in recovery from various depleting conditions, both acute and chronic, and including colds and flus as well as chronic fatigue related conditions," says Kaylor. However, he adds, cordyceps is likely the most effective mushroom for recovery in general.

### Immune Support Marke

As its mainstream popularity grows, the immune support space will morph and change, as suppliers and manufacturers gauge consumer preferences and adjust their products to match. Retailers have the opportunity to beverage consumer demand in this market even as its trends continue to shift.

"If you look at the shelves of the health food immune aisles, you find that there is largely a bifurcation between 'kitchen sink' long-term products designed for general health and products intended specifically to treat colds and flu over the short term," says Clouatre. Outside of a heavy mushroom presence, this first long term' category lacks focus, he believes. The cold and flu side of things is currently centered on echinacea, elderberry and related items, as well as zinc lozenges in some cases. Outside of allergy concerns, the digestive system is not often viewed as a primary site of immune action, judging by store shelves, Clouatre says. Also judging by shelves, most customers seem to want 'quick fixes' ained at symptom alleviation.

The pre-, pro- and symbiotics market for immunity is coming, he argues. The research in this area continues to pour in. "Consumers just need to be brought up to speed on the emerging science," Clouster says, adding that consumers seem to have already given the nod to multi-strain probiotics. Rodriguez thinks many consumers are already making the digestive/immune health link, and that combination pre-/probiotic products have influenced this trend. Gateway products are also a factor. "The success of yogurts over the years has affected the association of immune health and out health with consumers, which has

### Immune Support Products



American Health: Esterc., 500 mg and 1000 mg, capsule, vegetarian tablet, powder, effervescent, liquid, chewables; Ester-C 1000 mg with Probiotics (6 billion) Digestion & Immune Health Complex; Ester-C 1000 mg with D3 (5000 IU) Bone & Immune Health Complex; Ester-C 1000 mg Advanced Antioxidant Formula, Ester-C 1000 mg Advanced Antioxidant Formula, Ester-C 1000 mg with Cranberry (2000 mg) Cranberry & Immune Health Complex; Probiotics: Chewable, liquid, Enzyme Problotic Complex, Probiotic CD (Controlled Delivery), Capsules with Citrus Pectin; Aerofa Plus

Bioforce USA: Echinaceaforce Liquid, Echinaforce Tablets, Echinaforce Forte, Echinaforce Junior,

Riothera: Wellmune WGF

opened up the category to be more than just a seasonal story," says Doug Reyes, sales and marketing manager for Embria Health Sciences.

There is also some crossover taking place, Clouatre says, such as probiotics potentially being marketed in areas like mood elevation. Another example is the increasingly recognized role of inflammation in obesity and blood sugar management opening the door for immune products in these areas.

American consumers are more aware of the need to support immunity in general today, claims Donna Noonan, president of Mushroom Wisdom Inc.
"They know that when and if their immune systems are impacted or functioning less than optimally, they set the stage for adverse health conditions to set in," she says, adding, "Stress is a top factor impacting healthy immunity, and this leads to opportunities for retailers to 'package' stress and immune supplements together in the supplement aisles."

Levy claims, however, that only a small percentage of the population is actively attempting to manage an already compromised immune system. This indicates that products designed to help with prevention will still reach the largest share of consumers, and he says this trend is stable. The uncertain economy is one reason, as fear of financial trouble combined with health care worries has people taking safeguards.

There are also negatives associated with mainstream over-the-counter products that are influencing consumers toward natural alternatives. "Recently many children's cough syrups have been taken off the market because of concerns over some of the potentially harmful ingredients in those formulas," save Bane.

The areas of formulation and product marketing are as intriguing as the sales trends. Mueller says that as we see immune products emerge in every form, from foods to beverages to supplements, a priority is being placed by manufacturers on the strength of the science. The main reason is it dictates the types of health claims that can be made. "Companies want compelling and innovative claims that will pass the scrutiny of regulators," Mueller says, and savvy marketers are aware that claims must be impactful enough to ensure consumer interest.

Another priority, as the supplements market becomes more sophisticated, is on producing consistently efficacious products. See says, "When developing a new product for immune support, supplement makers must consider both bloavailability and bio-efficacy—to ensure absorption of the bioactives and that they are delivered to the various organs and confer the benefits that they claim to have." This is where issues like finding the right delivery format come into play.

"Just like other product categories, there is a growing trend toward delivery formats that expand beyond capsules and hard tablets. Chewable tablets, gums, gumnies and teas provide alternatives, especially for individuals who have difficulty swallowing large capsules or tablets," says Dockery.

One potential trend to note is powdered supplements. Meletis points to the small percentage of Americans that get the recommended servings of fruits and vegetables, while also acknowledging that quality produce gets expensive. He says for this reason many people are looking to powdered green and red vegetable supplements. "Most of them will mix one to two packs of veggles into 16 ounces of water a couple of times a day. Besides the normal benefits of getting more fruits and veggles, it also helps with hydration," Meletis says. Muccous membranes have been shown to be less resilient when dehlvdrated.

## Bluebonnet Nutrition Corp.:

Standardized Elderberry Fruit Extract Vcaps, Standardized Holy Basil Leaf Extract Vcaps, Standardized Ginkgo Biloba Leaf Extract Vcaps, Standardized Olive Leaf Extract Vcaps, Oil of Oregano Softgels, Vitamin C 500mg and 1000mg vcaps and Caplets, EarthSweet Vitamin C 500 mg Chewable Tablets, Vitamin D3 400, 1000, 2000, and 5000 IU Softgels, Vcaps, Drops and Chewables, Super Quercetin Formula Vcaps, EarthSweet Zinc 15 mg Lozennes.

Carotech: Tocomin, Tocomin SupraBio.

Embria Health Sciences: Epicor

Jarrow Formulas: ResistImmune, Colostrum Prime Life, Lactoferrin, Whey Protein, Jarro-Dolphilus EPS, Stabilized R-Alpha Lipoic Acid (Bio-Enhanced Na-PALA)

Lonza: ResistAid.

Mushroom Wisdom: Maitake mushroom (D-Fraction). Super Mushroom Line: Super Royal Agaricus, Super Chaga, Super Coriolus, Super Meshima, Super Reishi. Super Shiitake.

Penn Herb Co.: Olbas Cough Syrup.

Quality of Life Labs: AHCC Kinoko (250mg), AHCC Kinoko Gold (500mg), AHCC Kinoko Platinum (750mg), Kinoko To-Go AHCC Stick Packs, ImmunoComplex, Advasorb Vitamin C.

Rainbow Light Nutritional Systems: Certified Organics Mushroom Therapy, Counter Attack, Deep Defense, Allergy Rescue.

Stratum Nutrition: BLIS K12 probiotic

Trace Minerals Research:



We have seen trends in stick packs with water-soluble powder being developed for easy portability as an alternative for popping pills," says Lifton. Smaller soft gels are also being introduced, in part made possible by greater concentration of ingredients.

Tried and true is holding strong, however. "Although many companies are exploring different delivery formats such as drink mixes, functional foods, or immune-boosting energy shots

Concentrace Yace Rullera Coope, Electrolyte Stamina Power Pak, Greens Pak, Reds Pak, Liquid Vitamin D, Vitamin D Pak, Ionic Zinc, Ionic Selenium, Probiotic 55 Billion.

Wakunaga of America: Kyolic Formula 100, Kyolic Formula 103, Kyolic Vitamin D3, Kyolic One Per Day, Kyolic Reserve, Kyo-Dophilus, Kyo-Dophilus Vegetarian, Kid's Kyo-Dophilus, Kyo-Dophilus 9, Kyyoo-Dophilus One Per Day, Moducare, ModucareCF.

traditional dietary supplements in capsule or tablet form remain the first choice among consumers to strengthen the immune system, according to Gallup," says Levy.

Though people are aware of the need to supplement regularly if they hope to effectively boost immunity, convenience or lack thereof is still an obstacle for some. "A once-a-day, one to two pill or capsule routine is easily managed by most busy consumers. Immune boosters that require preparation or multiple doses throughout the day are less attractive," says Levy

These product trends can be put in front of your customers through in-store educational seminars, says Lifton. While consumers are aware of the category, their knowledge is mostly superficial, so retailers can use s displays and other marketing materials to explain specific ingredients and how they work. Staff training is also important,

Noonan suggests initiating partnerships with local stress management counselors, yoga studios and dietitians who can speak to the need for a healthy diet that helps limit stress, as stress-induced biochemicals like cortisol can often impact immune status. **WF** 

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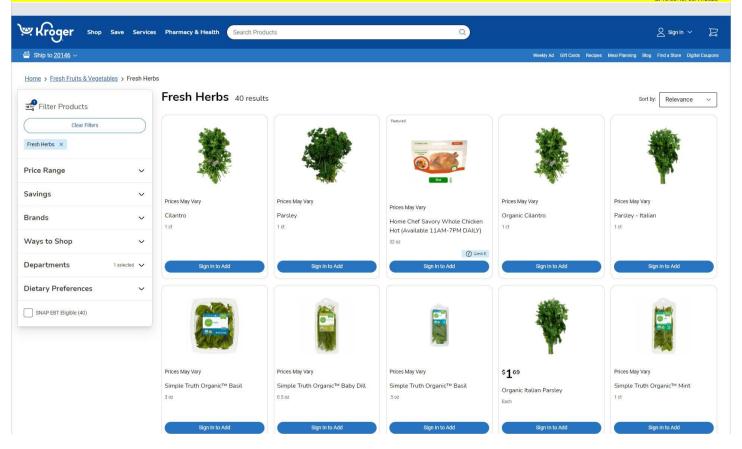
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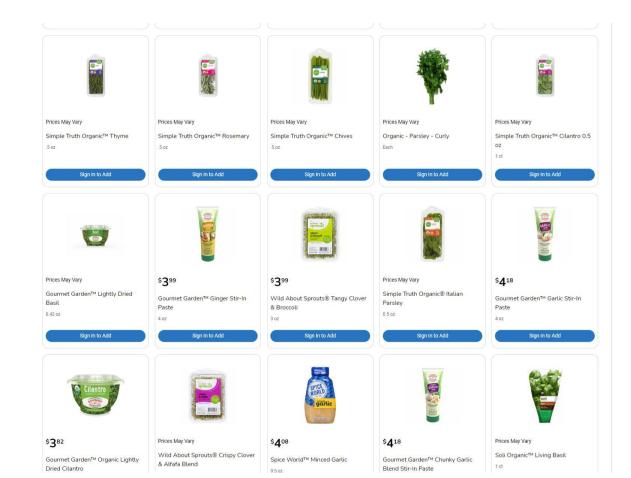
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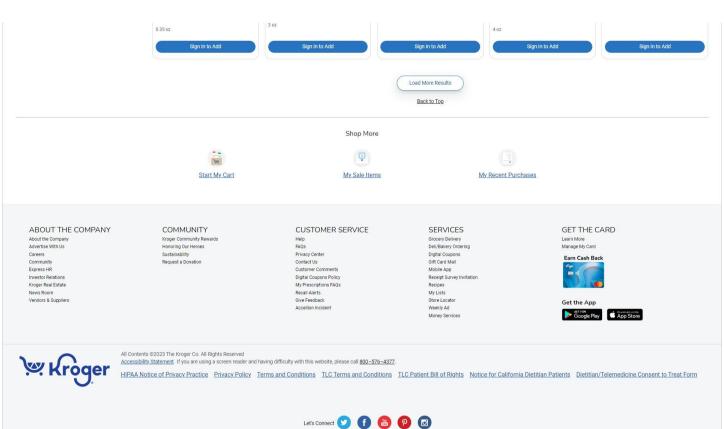
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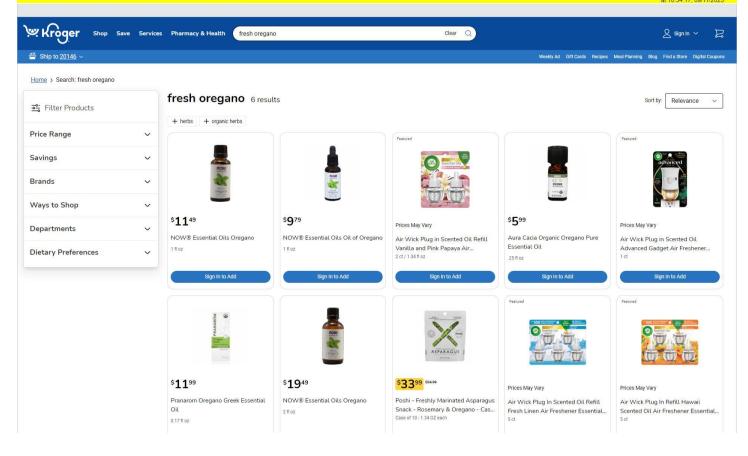












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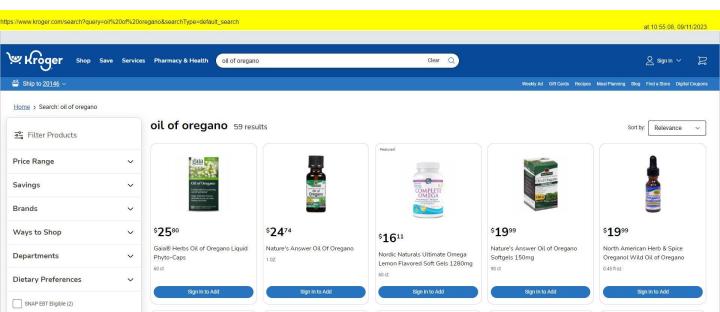












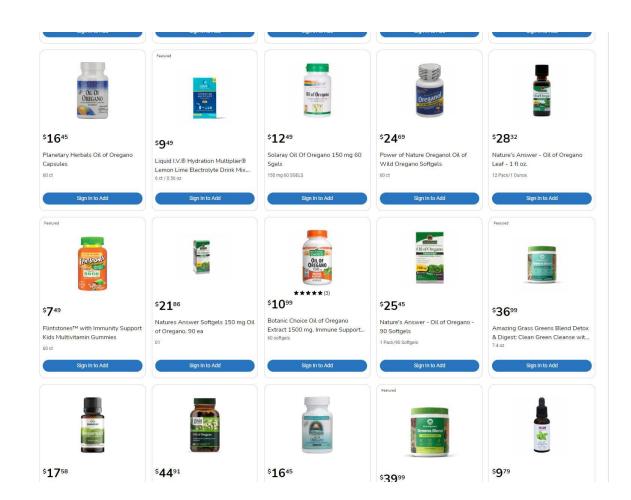


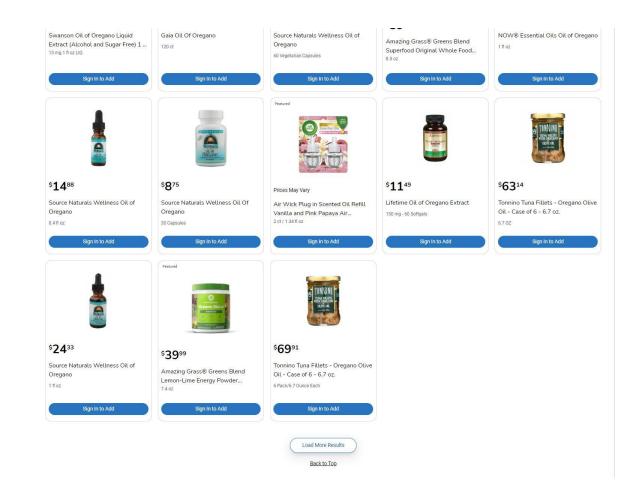












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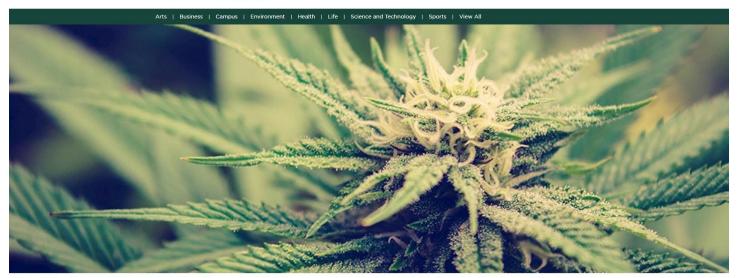






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April 6, 2021

CBD, marijuana and hemp: What is the

# these cannabis products, and which are legal?

This article was written in <u>The Conversation</u> by Trey Malone, assistant professor in the College of Agriculture and Natural Resources and extension economist at Michigan State, and Brandon McFadden, assistant professor of applied economics and statistics at the University of Delaware.

New York recently became the 15th U.S. state to legalize cannabis for recreational

While 67% of U.S. adults support marijuana legalization, public knowledge about cannabis is low. A third of Americans think hemp and marijuana are the same thing, according to the National Institutes of Health, and many people still search Google to find out whether cannabidiol – a cannabis derivative known as CBD – will get them high, as marijuana does.

Hemp, marijuana and CBD are all related, but they differ in significant ways. Here's what you need to know about their legality, effects and potential health benefits.

# Hemp, marijuana and cannabanoidals

Both hemp and marijuana belong to the same species, Cannabis sativa, and the two plants look somewhat similar. However, substantial variation can exist within a species. After all, great Danes and chihuahuas are both dogs, but they have obvious differences.

The defining difference between hemp and marijuana is their psychoactive component: tetrahydrocannabinol, or THC. Hemp has 0.3% or less THC, meaning hemp-derived products don't contain enough THC to create the "high" traditionally associated with marijuana.

CBD is a compound found in cannabis. There are hundreds of such compounds, which are termed "cannabinoids," because they interact with receptors involved in a variety of functions like appetite, anxiety, depression and pain sensation; THC is also a cannabinoid.

Clinical research indicates that CBD is effective at treating epilepsy. Anecdotal

evidence suggests it can neip with pain and even anxiety – though scientifically the jury is still out on that.

Marijuana, containing both CBD and more THC than hemp, has demonstrated therapeutic benefits for people with epilepsy, nausea, glaucoma and potentially even multiple sclerosis and opioid-dependency disorder.

However, medical research on marijuana is severely restricted by federal law.

The Drug Enforcement Agency categorizes cannabis as a Schedule 1 substance, meaning it handles cannabis as if there is no accepted medical use and a high potential for abuse. Scientists don't know exactly how CBD works, nor how it interacts with other cannabinoids like THC to give marijuana its added therapeutic effects.

# **Retail CBD**

CBD comes in food, tinctures and oils, just to name a few. Here are some commonly used terms used to describe CBD products in the store.

While the terms "CBD tincture" and "CBD oil" are often used interchangeably, the two are actually different. Tinctures are made by soaking cannabis in alcohol, while oils are made by suspending CBD in a carrier oil, like olive or coconut oil.

"Pure" CBD, also called "CBD isolate," is called that because all other cannabinoids have been removed. So have terpenes and flavonoids, which give marijuana its strong aroma and earthy flavor.

"Broad spectrum" CBD typically contains at least three other cannabinoids, as well as some terpenes and flavonoids – but still no THC. "Full spectrum" CBD, also called "whole flower" CBD, is similar to broad spectrum but can contain up to 0.3% THC.

In states where recreational marijuana is legal, the list of cannabis-derived products greatly expands to include CBD with much higher THC content than 0.3 %

There is no standardized dosage of CBD. Some retailers may have enough knowledge to make a recommendation for first-timers. There are also online resources - like this dosage calculator.

Consumers concerned about content and the accuracy of CBD products, which are not regulated by the Food and Drug Administration, can look for certification from independent lab testing or by scanning a QR code on product packaging.

Note that CBD oil is different from hemp oil - which comes from pressing cannabis

seeds, and may not contain CBD - and hempseed oil, which is a source of essential fatty acids and contains no CBD. It's a nutritional supplement, more like fish oil than CBD oil.

# Legal status

Another big difference among hemp, marijuana and CBD is how the law treats

Though 15 states have now legalized recreational marijuana, it remains illegal federally in the United States. Technically, those in possession of marijuana in a legal weed state can still be punished under federal law, and traveling across state borders with cannabis is prohibited.

Hemp, on the other hand, was made legal to grow and sell in the United States in the 2018 Farm Bill.

One would assume, then, that hemp-derived CBD should be federally legal in every state because the THC levels don't surpass 0.3%. But CBD occupies a legal gray area. Several states, such as Nebraska and Idaho, still essentially regulate CBD oil as a Schedule 1 substance akin to marijuana.

Our recent study found that Americans perceive hemp and CBD to be more like over-the-counter medication and THC to be more like a prescription drug. Still, the average person in the U.S. does not view hemp, CBD, THC or even marijuana in the same light as illicit substances like meth and cocaine – even though both are classified by the DEA as having a lower potential for abuse than marijuana.

The current federal prohibition of marijuana, in other words, does not align with the public's view - though state-based legalization shows that society is moving on without the blessing of politicians on Capitol Hill. U.S. recreational marijuana retail sales may reach US\$8.7 billion in 2021, up from \$6.7 billion in 2016.

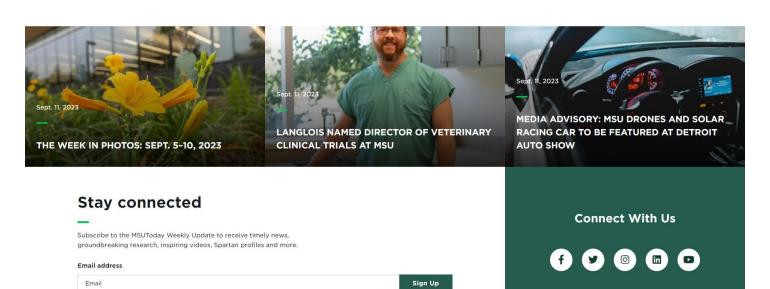
As interest in other cannabinoids, like cannabigerol, or CBG – which some are touting as the new CBD – continues to grow, so too grows the need for further medical research into cannabis.

By: Trey Malone

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https://medlineplus.gov/herbalmedicine.html at 12:52:31, 09/12/2023



Home → Health Topics → Herbal Medicine

# Herbal Medicine Also called: Botanicals, Phytotherapy



# Summary

An herb is a plant or plant part used for its scent, flavor, or therapeutic properties. Herbal medicines are one type of dietary supplement. They are sold as tablets, capsules, powders, teas, extracts, and fresh or dried plants. People use herbal medicines to try to maintain or improve their health.

Many people believe that products labeled "natural" are always safe and good for them. This is not necessarily true. Herbal medicines do not have to go through the testing that drugs do. Some herbs, such as comfrey and ephedra, can cause serious harm. Some herbs can interact with prescription or over-the-counter medicines.

If you are thinking about using an herbal medicine, first get information on it from reliable sources. Make sure to tell your health care provider about any herbal medicines you are taking.

NIH: National Center for Complementary and Integrative Health

## Start Here

- About Herbs, Botanicals & Other Products (Memorial Sloan-Kettering Cancer Center)
- Botanical Dietary Supplements: Background Information
   (National Institutes of Health, Office of Dietary Supplements)
- Dietary and Herbal Supplements Nelsonal Center for Complementary and Integrative Health)
- Dietary Supplement Label Database (DSLD)
   (National Institutes of Health, Office of Dietary Supplements)
- Herbal Health Products and Supplements (American Academy of Family Physicians)
  Also in Spanish
- Herbal Medicine (Johns Hopkins Medicine)
- Herbal Supplements (Cleveland Clinic Foundation)









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The primary NIH organization for research on Herbal Medicine is the National Center for Complementary and Integrative Health

MedlinePlus links to health information from the National Institutes of Health and other federal government agencies. MedlinePlus also links to health information from

- Herbs at a Glance (National Center for Complementary and Integrative Health)
- MedlinePlus: Herbs and Supplements (National Library of Medicine)
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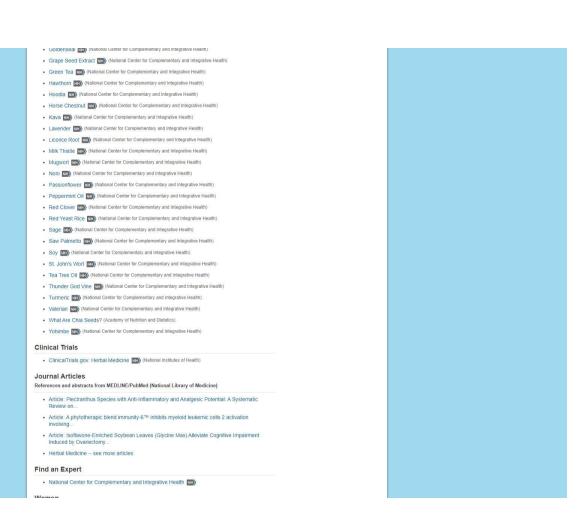
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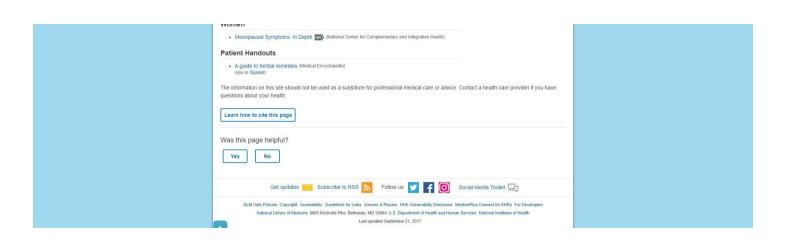
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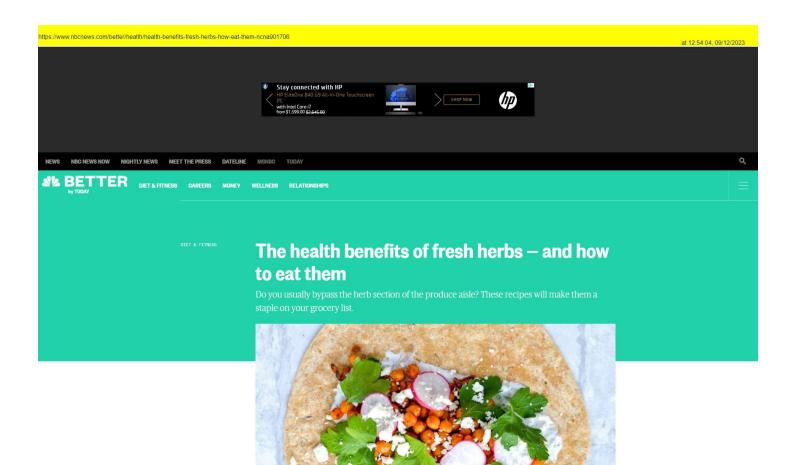
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# Specifics

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- Echinacea: What Should I Know about It? (American Academy of Family Physicians)
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Parsley may look similar to cilantro, but it has a much milder flavor that makes a nice addition to sandwiches like this Spiced Chickepea Wrap. Nutrition a la Natalia

Aug. 19, 2018, 1:06 PM EDT

# By Natalie Rizzo, RD

Using fresh herbs is one of the easiest (and cheapest) ways to take a dish from basic to brilliant. But for the home cook, incorporating fresh herbs can be daunting and probably raises some questions.



What do they taste like, when should you add them in the cooking process and what flavors go well together? With this guide to ten common fresh herbs (and a little help from our chef experts), you'll no longer walk right past the fresh herb stand at your local farmers market.

# Parsley



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- Nutrition a la Natalie

Although parsley looks strikingly similar to cilantro, the taste is much milder. "Parsley has a fresh taste that's earthy and mildly sweet," according to Sara Haas, RDN, Chicago-based and author of Tacol Tacol. Parsley and cilantro look extremely similar, so make sure you opt for the herb with the pointy leaves. One cup of chopped parsley provides over one thousand percent of your daily value of vitamin K, plus it's rich in myricetin, a flavonoid that may have some anti-cancer properties. Haas suggests using parsley at the end of cooking for finishing dishes. "It's great in tabbouleh, roasted potatoes, pasta dishes and grain dishes," and it makes a nice accompaniment to salads and sandwiches, like this Spiced Chickpea

# Tarragon









Rachael Hartley Nutrition

"Tarragon has a bright, peppery, yet sweet anise-like taste," says Jackie Newgent, RDN, culinary nutritionist, author of "The All-Natural Diabetes Cookbook" and spokesperson for American Pecan Council. "Frankly, I think it's one of the most underutilized fresh herbs," she adds. Tarragon contains magnesium, iron and zinc, but the amount used in cooking is usually rather negligible. Newgent advises adding tarragon at the end of the cooking process or making use of the fresh leaves. "One of my favorite recipes to serve at picnics is a tarragon chicken salad with pecans, since tarragon is a perfect pairing for chicken and the pecans provide delicious texture and filling dietary fiber to the creamy salad." For a dinner recipe, try this Mushroom and White Bean Pasta, finished with tarragon.

# Basil



Nutrition a la Natalie





Arguably the most popular fresh herb (probably because it's a pizza topper), basil has a sweet, aromatic and somewhat peppery flavor. Like the other fresh herbs, it's rich in plant polyphenols that are thought to prevent chronic diseases. Not surprisingly, basil pairs well with Mediterranean flavors and works best when added at the end of cooking. It's also a nice accompaniment to fresh salads, such as this Spring Strawberry Salad.

# Thyme



Sara Has

According to Haas, thyme has a minty, earthy, lemony flavor with a hint of pine. It is believed that the oil of thyme may have antimicrobial properties, and thyme itself is a good source of vitamin C. "Thyme is great for adding flavor to soups, stocks and stews, roasted veggies, as well as cooking beans from scratch," says Haas. It's often used at the end of recipes, such as this Sautéed Mushrooms with Thyme and Bulgur.

# Rosemary









Teaspoon of Spi

I always get thyme and rosemary confused, probably because the taste is rather similar. Rosemary can also be described as lemony with a hint of pine, but it has a more woody taste than thyme. The distinguishing difference is that rosemary looks like a branch from a pine tree. It's a good source of iron, calcium and vitamin B6, and "research has shown that rosemary may deter the formation of carcinogenic compounds during grilling," says Haas. It's best to use rosemary during cooking or for marinades, and the sprigs can be used as skewers, like in this rosemary shrimp recipe.

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# Sage



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Reminiscent of Thanksgiving, sage is synonymous with fall dishes. A member of the mint family, "sage is slightly bitter and has a mild sweetness with floral tones," says Haas. It also contains flavonoid and polyphenol compounds, which serve as antioxidants. Haas cautions that sage is delicate, so it needs to be used at the end of cooking. "It's great in pastas, compound butters and deserts, like this Cherry Crumble with Sage Brown Sugar."

# Cilantro



Jackie Newgen

Cilantro is quite divisive, since people either love it or hate it. "Cilantro tastes a bit citrusy and pungent; though, some think it has an unusual soapiness," says Newgent. "Cilantro is actually the Spanish translation for the leaves of the coriander plant," she adds. Newgent also recommends using cilantro in cold prep, but not during cooking. "It pairs with Mexican, Asian and Indian dishes, like this Coconut Cauliflower 'Couscous'," remarks Newgent.



Dill



Fannetastic Food

One of the most underrated fresh herbs, dill is actually used more often than you may realize – dill pickles or tzatziki sauce anyone? Dill tastes both sweet and sour, and it has a hint of citrus. It's a good source of calcium and iron, and the flavor pairs well with virtually any dish. Try using it on salads, baked potatoes or in savory baked goods, like these Hard-Boiled Egg Cheddar Muffins.

# Oregano









Jenna Preddo

"Oregano tastes like Italy, if the country had a taste!" says Newgent. 
"In other words, it's kind of pungent, woodsy, and bold with a sweet spiciness." You've probably doused your pizza with dried oregano, but using the fresh stuff is far more rare. It's often too pungent to eat raw, so fresh oregano is best when used in the last IS minutes of cooking, according to Newgent. Fresh oregano makes a great accompaniment to a pot of beans, a lemony marinade or a simple marinara sauce.

# Mint









- Emily Kyle Nutrition

Everyone knows what mint tastes like because of, well, toothpaste. But fresh mint has a stronger, sweeter and earthier taste. Mint has long been revered for its ability to treat stomach woes, and research has even linked it to treating Irritable Bowel Syndrome (IBS). Mint is often used in Middle Easter dishes and teas, but it also makes a great addition to a green smoothie.

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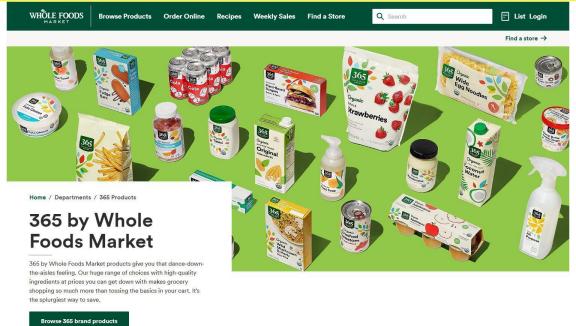
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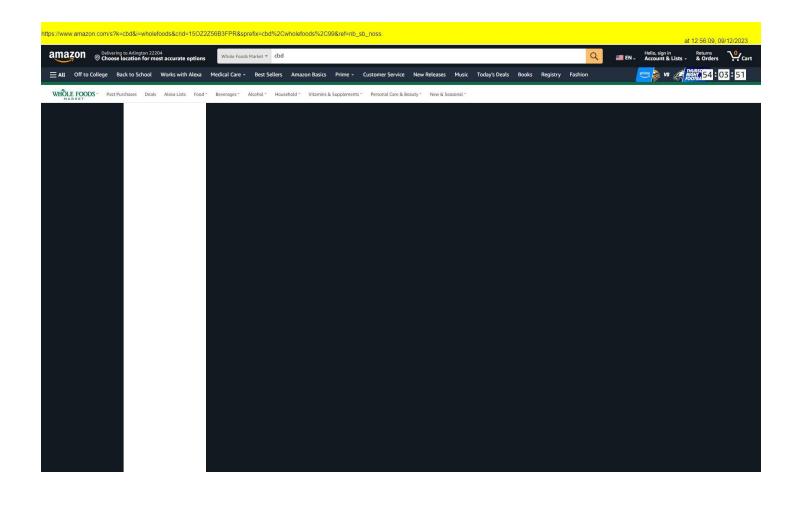
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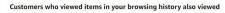
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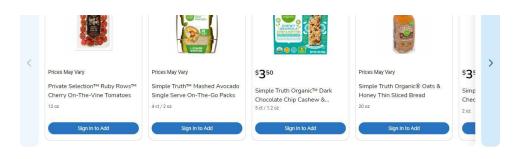


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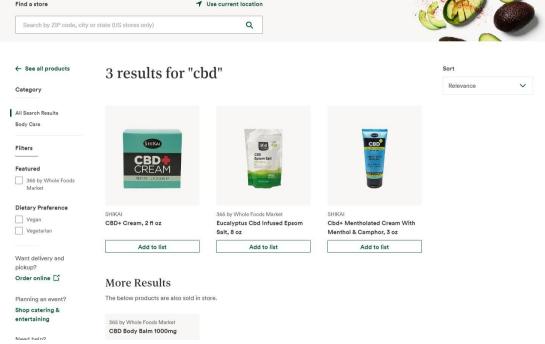






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# Bach flower remedies were developed in the 1930s by Dr. Bach. We are proud to continue to make the full 38 flower remedies using Dr. Bach's original methods.

With so much going on around us, it's easy to feel overwhelmed from time to time. Using Bach® flower remedies, you can balance your emotions and fulfill your potential in a completely natural way.\*

The flower remedies were developed in the 1930s by Dr. Edward Bach, a physician and homeopath who believed that the key to overall health was to care for the mind as well as the body. He spent his life exploring the use of flowers and plants as a means to promote emotional wellbeing. By 1936 he identified 38 flower essences, each one derived from a different wild flower, plant or tree, and each corresponding to a specific emotion.

Dr. Bach organized the 38 remedies into seven groups. We have modernized the names to help make it easier:

COLOR	MODERN GROUP NAME	TRADITIONAL GROUP NAME
Orange	Face Your Fears	Fear

Light Green	Live The Day	Insufficient interest in present circumstances	
Purple	Reach Out To Others	Loneliness	
Dark Green	Stand Your Ground	Oversensitivity to influences and ideas	
Pink	Find Joy & Hope	Despondency and despair	
Blue	Live & Let Live	Overcare for the welfare of others	

#### Trusted worldwide for 85+ years.

Our <u>complete system</u> is designed to assist you in understanding and balancing your own emotions, through an individual and personal approach. The remedies may be taken individually, or you can combine them to create a personal blend that works in harmony with your body.

Bach® is the only maker authorized by The Bach Centre to use Dr. Bach's signature, and the only flower essences sourced directly from his home in

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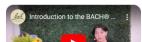
"Treat the cause, not the effect"

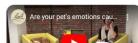
-Dr. Edward Bach

#### Top Flower Essence Videos

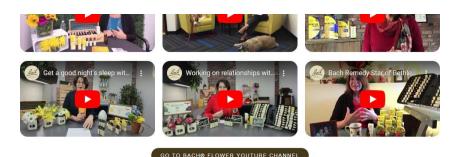
LEARN HOW TO USE THE BACH® FLOWER SYSTEM

Whether you're new to Bach® flower remedies or very knowledgeable, you can learn a lot from our videos featuring Denise Eaton, BFRP, BFRAP. Scroll down to watch some of the most popular vids from our YouTube channel.





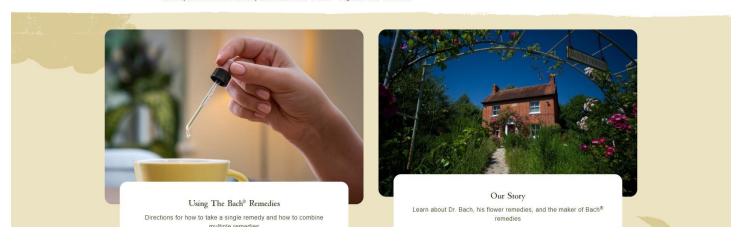


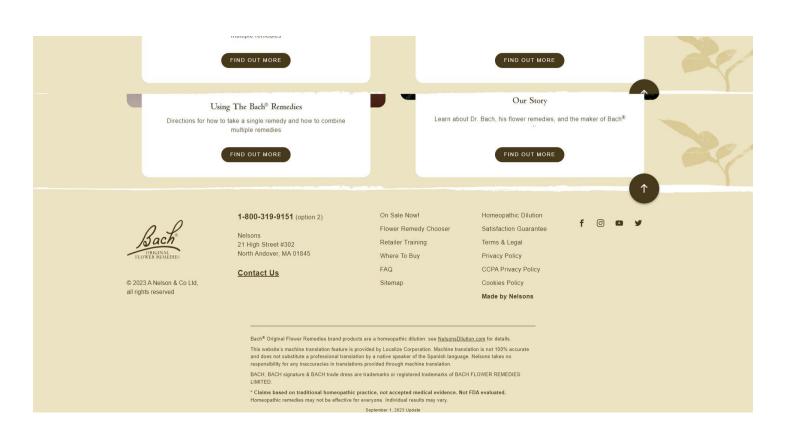


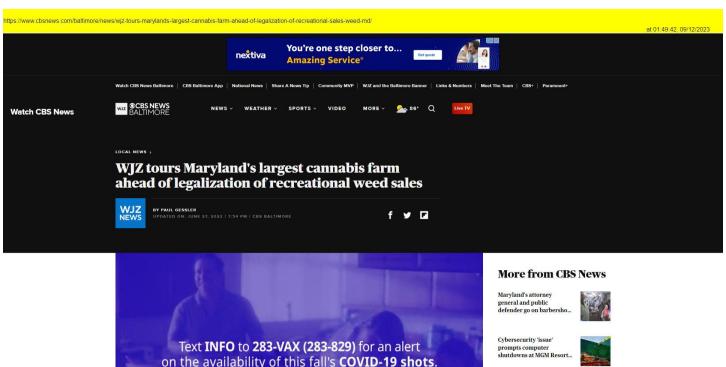
#### About The Host

"It is my hope that you become more familiar with how you can help yourself and your loved ones return to a natural state of balance with the help of Bach® Original Flower Remedies."\*—Denise Eaton, BFRP, BFRAP

Denise Eaton is the Education Manager at Nelsons (Nelsons.net), and is a Bach Foundation Registered Practitioner (BFRP) and Animal Practitioner (BFRAP). Over the past 20+ years, Denise has educated more than 10,000 people across the United States and Canada on the Bach® flower system. Nelsons is the only authorized maker of Bach® Original Flower Remedies.

















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WARWICK, Md. - Jake Van Wingerden's ornamental plant business in Cecil County dates back generations. He now runs the largest cannabis farm in the state.

"When I walk through the greenhouse and I don't see a yellow leaf anywhere, I know we're dialed in," Van Wingerden said last week.

The SunMed Growers president gave WJZ a tour in advance of Maryland's move to recreational cannabis sales July 1.

#### RELATED: Weed legalization in Maryland: How we got here

"We're growing more. We're hiring more. We're packaging more. We're producing more," Van Wingerden said. "I'm sure we're going to have some supply imbalances."



 $SunMed\ recently\ expanded\ its\ flowering\ square\ footage\ to\ 240,000,\ up\ from\ 40,000\ square\ feet\ when\ it\ began\ cannabis\ production\ for\ the\ medical\ market\ in\ 2014.$ 

"Every single room in the greenhouse, we're monitoring temperature, humidity, CO2 levels, light levels," Van Wingerden pointed out in one of SunMed's expansive greenhouses.

The greenhouses let in sunlight and are complimented by thousands of LED lights.

The facilitys monthly electricity bill is in the six figures, Van Wingerden said. It uses 15,000 gallons of water a day, he said.

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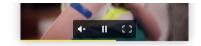












The plants take about 20 weeks from propagation to consumption with more than 100 strains of cannabis offered, each with a state-mandated yellow tag to track it.

"Cannabis is a lot like wine, right? There's a lot of different kinds. A lot of different flavors," Van Wingerden said.

SunMed's most popular strain is called "Snoop Dogg," named after the hip hop star and cannabis enthusiast. The strain represents about 40 percent of SunMed's sales, Van Wingerden said.

SunMed is also expanding into the edibles market as the state approves recreational use, building an additional processing facility to create baked goods infused with the drug.

"The vast majority of Americans don't smoke any more. But, everybody eats," Van Wingerden said.

SumMed is purchasing additional machines to help process the additional product in anticipation for the increased demand.

Some studies have predicted the recreational market will expand the demand five-fold, although Van Wingderden predicts the market demand will triple once it levels out.



As the state's top producer, SunMed's processing division manager Drew Reich described a sense or responsibility to keep supply in dispensaries.

"That's our big objective is don't run out," Reich said. "It kind of falls upon our shoulders to make sure there's



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#### In: Weed Legalization in Maryland

#### Paul Gessler



Paul Gessler is a general assignment reporter at WJZ with a decade of experience reporting in Baltimore.

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First published on June 27, 2023 / 6:00 PM

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# Aurora Cannabis buys profitable vegetable firm for CA\$45M, sells Sky greenhouse







#### Latest News

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(This story was updated at 4:27 p.m. ET with more details and comments.)

Aurora Cannabis is diversifying into the vegetable propagation and ornamental flowers business amid a massive marijuana glut in Canada by acquiring a controlling interest in Bevo Agtech, one of the largest suppliers of flowers and vegetable seedlings in North America.

Edmonton, Alberta-based Aurora paid 45 million Canadian dollars (\$35 million) in cash for 50.1% of Beyo, according to a news release.

Another \$12 million in Aurora stock could be paid, conditional on Bevo achieving certain financial targets.



Carey Squires, Aurora's head of corporate development and strategy, said Bevo's expanding business and profitability was key to getting the deal done.

"The ability to get access to cash flow today is going to be really important for a competitive position going forward to be sustainable long term," Squires told *MJBizDaily* in an interview.

"The idea that we can do that with these guys, and have that incremental boost, is core to (the deal)."

The executive said Aurora plans to "accelerate the plant propagation and ornamental business."

The Langley, British Columbia, agricultural producer operates 63 acres of greenhouses in B.C., where it propagates vegetable plants including tomatoes, peppers and cucumbers as well as other plants such as flowers and grasses.

Bevo also agreed to buy Aurora's sprawling greenhouse complex at Edmonton International Airport for up to CA\$25 million. The closing price will be based on Bevo successfully reaching financial milestones at the Sky facility.

In its release, Aurora said Bevo will continue to be run by the existing management team. Aurora will take a controlling position on Bevo's board.

"Bevo's track record in generating not only positive adjusted EBITDA but free cash flow, world class propagation expertise, and established distribution networks in Canada and the United States makes them an ideal strategic partner," Aurora CEO Miguel Martin said in a statement.

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"We are also excited about Bevo repurposing Aurora Sky and the potential to expand the scale and scope of their business and saving significant costs previously expected in connection with the wind down and sale of the facility."

#### Sky repurposed for veggie propagation

Aurora said Bevo plans to repurpose the Sky greenhouse for vegetable plant propagation and orchid cultivation.

Squires said the company is optimistic about Bevo's veggie propagation business and doesn't foresee the company growing cannabis.

"For that business, we believe it has a lot of tailwinds, including (such factors as) food scarcity, the cost of transportation going up and up, so the closer you are to your growing client the better," he said.

"Food prices and the desire to eat more locally, all of that ... has a ton of tailwind behind it, and they (Bevo) believe that, and we buy into the philosophy."

Squires said Bevo will use Sky to significantly expand capacity in Alberta, "which just happens to be next to a lot of the largest venerable growers (and) has better access to the U.S."

The marijuana greenhouse was once touted as the largest in the world, but Aurora had to scale back production because of falling sales in the ultracompetitive recreational market.

Aurora finally pulled the plug on cannabis at the facility in May and put the greenhouse up for sale.

The CA\$25 million sale price for Sky is substantially lower than the company poured into it, which was as much as CA\$150 million.

It's the latest example of a broad selloff of mass-scale cannabis greenhouses in Canada by the nation's largest producers, which wildly overspent on cultivation space from 2017 to 2020.

#### **Mounting losses**

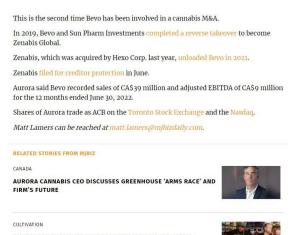
Aurora said the pivot to vegetable propagation doesn't change its core strategy of being a cannabis company long term.

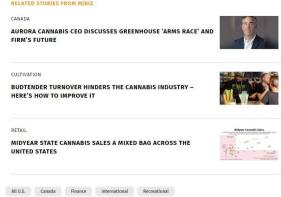
However, Aurora's losses in the cannabis space total roughly CA\$5.4 billion so far, and the company has yet to turn an annual profit.

"If we could do everything in cannabis today, we would, but there's limited opportunities of where we can go to expand," Aurora's Squires said.

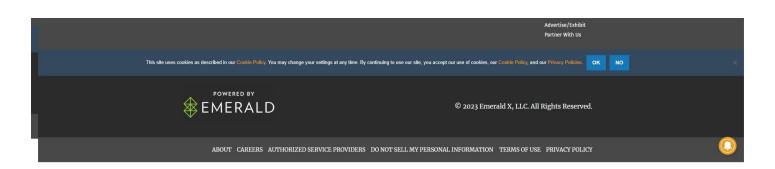
"So I think it is diversification in an ability to get bigger," he continued.

"We thought a lot about the idea of adjacency and the ability to get bigger, and these guys (have a) history of the ability to make money. There's tailwinds."









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Development of ornamental Cannabis sativa L. cultivars: phytochemical, morphological, genetic characterization and propagation aspects

Author: Keywords:

S. Casano
Cannabis, 'Divina', ornamental, variegation, chimera
10.17660/ActaHortic.2019.1263.37

Dol: 10.17660/ActaHortic 2019 1263.37

Abstract:

Due to its attractive variegated foliage, ornamental Cannabis cultivars offer new marketing opportunities. During the last years various chimera have been detected and, while most of them are still in process of selection, Phytoplant Research (PR) has recently obtained from the Community Plant Variety Office (CPVO) the provisional protection of plant breeder's rights for the dioecious female cultivar 'Divina' (CPVO file number: 2017/0149; granted with decision N' EU 50045 of 16 July 2018) characterized by a stable variegated foliage of vegetatively propagated plants. Divina' has a distinctive 'mottled yellow and green leaf' phenotype from the cultivar: Pilar' where the mutated type chimera was detected and isolated from a mutated donor greenhouse growing plant. Both cultivars show the same genotype when nuclear DNA fingerprinting is performed by using 15 SSR molecular markers. Additionally, by using a molecular marker for Δ9-THCA/CBDA synthases can be detected in both cultivars; and as chimerating plants was lower than 0.4% in all the samples analysed at our laboratories. Microscope observations of 'yellow' portions of stakls, leaves and inflorescence bracks confirm the presence of bulbous, sessile- and capitate-stalked trichomes. Divina' cultings are more prince to fungal disease during in vivo rooting stage than 'Pilar' cultings, however, satisfactory percentages of true to type rooted cultivary can be achieved by adopting good propagation practices. A protocol for all the stages of in vivo micropropagation has been established at our laboratories. When considering the sexual propagation of the cultivar, all the F<sub>1</sub>-hybrid offspring obtained by crossing a dioecious 'green leaf' male plant with a 'Divina' plant showed a 'green leaf' melandors. phenotype.

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