US Sales of Herbal Supplements Increase 5.4% in 2024

Healthy aging and foundational wellness drive consumer demand, with continued interest in cognitive and cardiovascular health and emerging focus on liver support and menopause

By Tyler Smith, a Carly Lang, b and Erika Craft^c

- ^a American Botanical Council (Austin, Texas)
- ^b SPINS (Chicago, Illinois)
- ^c Nutrition Business Journal (Boulder, Colorado)

Total retail sales of herbal dietary supplements in the United States reached an estimated \$13.231 billion in 2024 — a 5.4% increase over 2023, according to *Nutrition Business Journal* (NBJ). This marks the highest annual sales on record and the second consecutive year of growth, following a brief decline in 2022 (Table 1). While the surge in demand during the peak of the COVID-19 pandemic has subsided, consumer interest in herbal products for a range of health goals — from emerging areas like liver health to those associated with healthy aging — continues to drive growth across market channels.

The sales data discussed in this report were provided by NBJ, a natural products industry publication of Informa's New Hope Network, and SPINS, a leading provider of retail consumer insights, analytics, and consulting for the natural products industry. NBJ supplied estimates of total annual sales of herbal supplements, as well as total sales in three market channels (mass market; natural, health food, and specialty; and direct sales) and sales by product type (single-herb supplements vs. combination formulas). SPINS provided sales data for the 40 top-selling herbal and fungal ingredients in the mainstream retail channel (i.e., the multioutlet channel, powered by the market research and technology company Circana) and the natural (now called "natural expanded") retail channel. Channel definitions are included in Table 2.

Among the three primary retail channels tracked by NBJ, the direct-to-consumer segment once again led in overall sales, totaling \$7.503 billion in 2024 — a 6.8% increase from the previous year. The mass market channel (which includes supermarkets, drugstores, and other large retailers) also experienced strong growth, rising 4.9% to reach \$2.607 billion in sales. The natural, health food, and specialty channel saw a more modest increase of 2.7%, totaling \$3.121 billion in 2024.

This report focuses on the top-selling ingredients in SPINS' mainstream and natural expanded retail channels, highlighting those with significant sales increases and decreases in 2024. It also identifies several notable trends (both emerging and declining), offering context for the evolving herbal supplement market in the post-pandemic era.



Sales figures in this report refer exclusively to US retail sales of dietary supplements in which the herbal or fungal ingredient (or derivative thereof) is the primary functional ingredient. The data exclude herbal teas, cosmetics, and other products that are not legally considered dietary supplements.* All estimates reflect sales during the 52-week period ending December 31, 2024.

MAINSTREAM CHANNEL

Top Sales: Psyllium

In 2024, for the third consecutive year, psyllium (*Plantago ovata*, Plantaginaceae) maintained its position as the top-selling herbal supplement ingredient in mainstream retail outlets. Before that, in 2020 and 2021, elder (*Sambucus nigra* and *S. canadensis*, Viburnaceae) berry was the top-selling ingredient in this channel. Sales of psyllium-containing supplements in 2024 reached an estimated \$289.5 million, a 2.3% decrease from 2023. Since 2021, psyllium sales have remained relatively stable, with steady annual growth from 2021 to 2023. Unlike many ingredients that experienced sharp fluctuations during and after the pandemic, sales of

^{*} Cannabidiol (CBD) is included in these data, despite the US Food and Drug Administration (FDA) not currently recognizing it as a legal dietary supplement ingredient.

psyllium have remained relatively consistent, highlighting its continued importance to consumers.

Psyllium is a soluble fiber derived from the seed husks of the psyllium plant, which is also known as ispaghula. Native to India and parts of the Mediterranean, it has been traditionally used as a laxative and digestive aid, to help regulate blood pressure, and for minor skin irritations.^{1,2} Today, psyllium is commonly used to support digestive regularity and is often marketed for its cholesterol-lowering properties, as well as its potential benefits for glycemic control and supporting heart health. It is widely available in fiber supplements as powders, capsules, and in other formulations.

In the United States, psyllium is permitted for use in both dietary supplements and certain nonprescription/over-the-counter (OTC) drug products, which are subject to different regulations. As a dietary supplement ingredient, psyllium is regulated as a food under the Dietary Supplement Health and Education Act of 1994 (DSHEA) and may be used in products that make structure-function claims (e.g., "fiber maintains bowel regularity").^{3,4} Psyllium is also an approved active ingredient in some OTC products (e.g., bulk-forming laxatives) that are regulated as drugs by the US Food and Drug Administration (FDA). OTC psyllium products — sales of which are not included in this report — can have separate disease-related claims like "helps relieve constipation" or "helps lower cholesterol."^{4,5}

Psyllium husk is one of the few botanical ingredients permitted to carry an FDA-authorized health claim related to cardiovascular disease; soy (*Glycine max*, Fabaceae) protein is another. On qualifying conventional foods and dietary supplements, the FDA allows the claim: "Diets

Table 1. Total US Retail Sales of Herbal Supplements*					
Year	Year Total Sales % Chang				
2024	\$13.231 billion	5.4%			
2023	\$12.551 billion	4.4%			
2022	\$12.018 billion	-1.8%			
2021	\$12.241 billion	9.6%			
2020	\$11.168 billion	17.2%			
2019	\$9.530 billion	8.6%			
2018	\$8.778 billion	8.9%			
2017	\$8.057 billion	8.1%			
2016	\$7.452 billion	7.7%			
2015	\$6.922 billion	7.5%			

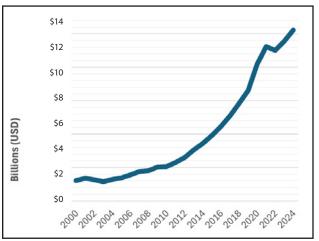
Source: Nutrition Business Journal

* Includes sales in all channels. NBJ primary research includes NBJ surveys of supplement manufacturers, distributors, MLM firms, mail order, internet, and raw material and ingredient supply companies, as well as interviews with major retailers (Walmart, Costco, etc.), manufacturers, suppliers, and industry experts. Secondary sources include Circana, SPINS, Natural, Nielsen, Natural Foods Merchandiser, Insight, public company report data, and other published material.

low in saturated fat and cholesterol that include 7 grams of soluble fiber from psyllium husk per day may reduce the risk of heart disease." To use an authorized health claim, an ingredient must meet strict requirements regarding supporting scientific data, underscoring the strength of the supporting evidence.6,7

In 2024, cardiovascular health and digestive health remained the topselling "health focus" categories for psyllium supplements, accounting for

Figure 1. Total US Retail Sales of Herbal Supplements (2000–2024)



Source: Nutrition Business Journal

63.8% and 17.9% of total psyllium sales, respectively (see "Health Focuses and Label Statements" sidebar). Although psyllium is most commonly associated with heart and digestive health, sales in both categories declined slightly. Sales of psyllium products for cardiovascular health decreased by 3.7% to \$183.1 million, while sales of digestive health products remained relatively unchanged, with a 0.2% decrease to \$51.3 million.

Psyllium dietary supplements with "non-specific" label statements (e.g., general wellness claims such as "supports



overall health") ranked third in overall psyllium sales, as was the case in 2023. Non-specific supplements made up 7% of psyllium sales in 2024 and increased by 16% from the previous year — the largest percentage increase of any psyllium health focus category — to reach approximately \$20 million.

Despite their modest sales decrease, psyllium supplements marketed for cardiovascular health remained the largest category of these products by far. In recent years, consumers have increasingly viewed heart health as a top wellness priority, and several factors, including a focus on healthy aging and longevity, are shaping this trend.

Rising rates of cardiovascular disease, the leading cause of death in the United States since 1950,8 continue to drive demand for supplements that help manage cholesterol, blood pressure, and other aspects of heart health.9,10 At the same time, many younger consumers — particularly those in Generation Z, who seem to be adopting healthier lifestyles than previous generations¹¹ — are proactively turning to dietary supplements to help maintain their health.9,12

This cross-generational interest in heart health is likely bolstered by ready access to detailed personal health data. Wearables, such as smartwatches and fitness trackers, enable consumers to check their heart rate, heart rate variability, blood pressure, steps, and other parameters at a glance. Other tools, such as DNA-based health assessments and on-demand lab testing, provide additional insights and can empower consumers to take actions to improve or maintain their cardiovascular health.¹⁰

Rising costs of and skepticism surrounding conventional pharmaceuticals may also be contributing to the popularity of heart health supplements. According to a 2024 Cleveland

Health Focuses and Label Statements

SPINS uses the term "health focus" to describe and categorize health-related statements on product labels. An herbal dietary supplement with the text "Can help support regularity" on its label, for example, would be placed in the "digestive health" category. Other health focus categories include immune health, cardiovascular health, cleanse and detox, weight loss, and blood sugar support, among many others.

Per US regulations, dietary supplement labels are not permitted to include any statements that suggest the product can diagnose, treat, cure, or prevent any disease. In a few cases, the US Food and Drug Administration (FDA) has authorized disease-prevention claims for herbal ingredients with supporting scientific evidence that meets specific criteria. (Such pre-approved health claims are authorized under the Nutrition Labeling and Education Act of 1990.) Dietary supplements that contain psyllium seed husk, for example, can mention an "association between [consumption of] soluble fiber from psyllium seed husk and reduced risk of coronary heart disease."

Dietary supplements are permitted to make "structure/function" claims, which describe how an ingredient may affect the normal structure or function of the human body, if the manufacturer submits appropriate documentation and notifies the FDA within 30 days of marketing the supplement.¹

Reference

Label claims for conventional foods and dietary supplements.
 US Food and Drug Administration website. Available at: www.
 fda.gov/food/food-labeling-nutrition/label-claims-conventional foods-and-dietary-supplements. Accessed June 23, 2025.

Table 2. US Retail Channel Definitions*								
	SPINS	Nutrition Business Journal						
Mainstream Retail Channels	Multi-Outlet Channel (powered by IRI) Covers grocery outlets (stores with \$2 million+ total annual sales), drug outlets (chains and independent stores), and selected retailers across mass merchandisers, including Walmart, club, dollar, and military stores representing more than 110,000 retail locations.	Mass Market Channel Includes food/grocery, drug, mass merchandise, and club and convenience stores (e.g., Walmart, Costco, etc.).						
Natural Retail Channels	Natural Expanded Channel Includes full-format stores with \$2 million+ in annual sales and 30% or more of UPC-coded sales from Health and Wellness Index (HWI) and 15% or more from Natu- ral Product Index (NPI) Universe. It includes co-ops, associations, independents, and large regional chains (excluding Whole Foods Market and Trader Joe's). This channel represents more than \$44 billion in total sales and encompasses more than 2,500 stores.	Natural, Health Food, and Specialty Channel Includes supplement and specialty retail outlets, including Whole Foods Market (estimates), GNC, sports nutrition stores, etc.						
Direct Sales		Includes direct-to-consumer sales from the internet (e.g., e-commerce websites such as Amazon.com and Walmart. com, among many others), direct-selling media (TV, radio, and print publications), health practitioners, and multilevel marketing (MLM) or network marketing firms (US sales only).						

^{*}The sales discussed in this article pertain to those involving herbal, fungal, and related dietary supplements. They generally do not include herbs sold as teas and beverages, as ingredients in conventional foods, or as ingredients in natural personal care and cosmetic products.

Clinic survey of 1,000 people in the United States, 97% of respondents said they believe that supplements can improve heart health, and 84% said, if given the choice, they would "rather take supplements than prescribed medication to improve their heart health." 13

Dietary supplements with ingredients and label statements supported by clinical research are of particular interest to an increasingly well-informed consumer base. 10,14 The FDA acknowledges "significant scientific agreement" regarding psyllium's effects on some aspects of cardiovascular health,7 and, as of June 2025, PubMed had more than 175 human clinical trials associated with this ingredient. 15 Recent systematic reviews have found that psyllium husk supplementation is associated with significantly improved total cholesterol and low-density lipoprotein cholesterol levels, 16 as well as reductions in fasting blood sugar, hemoglobin A1C, and systolic blood pressure. 17

Top Sales Increase: 'Mushrooms (Other)'

In 2024, sales of "mushrooms (other)" supplements were ranked 26th in the mainstream retail channel and reached approximately \$15.7 million. This corresponds to a 75.8%

increase over 2023 and is the largest percentage gain of any top 40 ingredient in this channel. SPINS' mushrooms (other) category includes sales of various functional mushroom products, such as those containing lion's mane (Hericium erinaceus, Hericiaceae), that are not reported individually. Supplements containing chaga (Inonotus obliquus, Hymenochaetaceae), cordyceps (Ophiocordyceps sinensis syn. Cordyceps sinensis, Ophiocordycipitaceae), and reishi (Ganoderma lucidum, Ganodermataceae), for example, are tracked separately and individually.

The mainstream sales growth for mushrooms (other) in 2024 continues the strong upward trend that began in the late 2010s for this ingredient category. In less than a decade, annual sales in the mainstream channel have grown more than 100-fold, from approximately \$138,000 in 2018 to more than \$15 million in 2024, with sales more than doubling each year in 2019, 2020, and 2023. Despite this robust growth, mushrooms (other) entered the mainstream channel's top 40 list for the first time in 2024, after ranking 43rd and narrowly missing the list in 2023. In the natural retail channel, this category has been well established for years, ranking among the top 10 ingredients since 2019.



(HerbalGram first mentioned the "shroom boom" in its 2019 Herb Market Report, 18 and an article on this topic -"The Mushroom Moment" by ethnobotanist Mark Plotkin, PhD — was the cover story of issue 139 in 2024.¹⁹)

The rapid growth of mushroom products mirrors the mainstream success of other once-niche botanicals — such as ashwagandha (Withania somnifera, Solanaceae), elder berry, and turmeric (Curcuma longa, Zingiberaceae) — and shows how ingredients once favored mostly by so-called "core shoppers" in the natural channel can gain traction with a broader consumer base.

In 2024, cognitive health was the top-selling health focus for mushroom (other) supplements in the mainstream chan-

nel, accounting for nearly half of the total sales of these products. Sales of cognitive healthrelated mushroom (other) supplements more than doubled, increasing by 114.5%

relatively small (\$16,376).

address a wider range of concerns. from \$3.57 million in 2023 to \$7.65 million in 2024. Products with non-specific health focuses accounted for nearly onethird of mushroom (other) product sales in 2024, growing by 93.8% to a total of \$4.57 million. Although a small percentage of overall sales, mushroom (other) supplements with an "unknown" health focus, which may include products with vague or missing label statements, experienced the largest percentage growth, rising 435% to \$34,668. Immune health accounted for just 6.1% of category sales in 2024 and grew by a modest 18.9% from 2023, while cold and flu-specific products declined 51.9% to \$15,283. Sales of mushroom (other) products marketed for mood support also grew by 49.6% over

The heightened interest in supplements for cognitive health is not limited to a single age group.²⁰ As Americans are living longer and dementia rates are rising,²¹ older adults may be seeking products to support memory and help maintain optimal long-term brain function. Younger consumers appear to be drawn to supplements that promote sharper focus, especially as they navigate digital fatigue and mental burnout.^{22,23}

the previous year, though total sales in that category remained

According to a December 2022 survey by Cigna, nearly all (98%) of Gen Z respondents reported experiencing at least some symptoms of burnout.²⁴ (Some research suggests that older adults are less vulnerable to burnout in general.²⁵)

The widespread interest in mushroom supplements for mental performance is reinforced by social media, where wellness influencers and lifestyle content creators regularly promote mushroom products.²⁶ Consumers increasingly favor formulations such as powders, beverages, and gummies that are marketed as natural, minimally processed, and easy to incorporate into daily routines.²⁷

While consumers are turning to social media platforms for potential cognitive health solutions, social media itself

> is widely cited as a attention,

contributing factor in perceived cognitive issues. In the past decade, researchers have reported correlations between heavy social media use and reduced

verbal intelligence, and short-term memory function.^{28,29} Fittingly, the 2024 Oxford University Press Word of the Year was "brain rot," defined as "the supposed deterioration of a person's mental or intellectual state, especially viewed as the result of overconsumption of material (now particularly online content) considered to be trivial or unchallenging." According to Oxford, the online usage frequency of this term jumped by 230% from 2023 to 2024.30

Once associated primarily with memory, cognitive health supplements (often referred to as nootropics) are now used to address a wider range of concerns. This expanded use reflects a growing interest in mental performance as consumers increasingly seek products that also support stress management, energy levels, and overall cognitive well-being. Multiingredient blends that support several aspects of cognitive function have become especially attractive to consumers seeking comprehensive benefits.²² As such, many mushroom blends are labeled with non-specific language that can include terms like "clarity," "vitality," or "balance." These products may appeal to consumers who are seeking a general cognitive or wellness "boost" without targeting a specific condition.

Table 3. Tota	Table 3. Total Herbal Supplement Sales in US by Retail Channel										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	% Change from 2023
Mass Market	\$1.204 billion	\$1.336 billion	\$1.449 billion	\$1.558 billion	\$1.704 billion	\$2.131 billion	\$2.205 billion	\$2.350 billion	\$2.484 billion	\$2.607 billion	4.9%
Natural, Health Food, and Specialty	\$2.356 billion	\$2.506 billion	\$2.624 billion	\$2.804 billion	\$2.904 billion	\$2.950 billion	\$2.992 billion	\$2.984 billion	\$3.040 billion	\$3.121 billion	2.7%
Direct Sales	\$3.363 billion	\$3.609 billion	\$3.984 billion	\$4.408 billion	\$4.913 billion	\$6.076 billion	\$7.033 billion	\$6.674 billion	\$7.027 billion	\$7.503 billion	6.8%
Source: Nutrition l	Source: Nutrition Business Journal										

Once associated primarily with memory,

cognitive health supplements (often

referred to as nootropics) are now used to

Calculating Percentage Change

The percentage sales changes from 2023 to 2024 included in this report are based on updated 2023 sales data provided by SPINS in May 2025. These updated numbers may differ from the figures published in the 2023 Herb Market Report, as SPINS periodically revises past data when new information becomes available or when sales are reclassified.

Most of these routine changes reflect small adjustments. However, due to changes in private label coding, the revised 2023 sales figures for several ingredients in the mainstream retail channel changed by more than 30%. As a result, the percentage changes for these ingredients may appear incorrect when compared to the sales totals published in the 2023 Herb Market Report.

The ingredients with 2023 sales changes above 30% are noted below:

	Sales in 2023 Herb Market Report	Updated 2023 Sales Data	% Change
St. John's wort	\$6,174,737.57	\$26,476,198	328.9%
Ginkgo	\$33,114,457	\$22,686,313	-31.5%
Cinnamon	\$25,559,120	\$17,740,841	-30.6%

Source: SPINS

Adaptogens

Similarly vague marketing language can be found on supplements labeled as adaptogens, which are typically defined as substances that help the body adapt to stress.³¹ Adaptogen sales in 2024 were largely positive across channels, particularly in the natural retail space. In the mainstream channel, sales of ashwagandha (Withania somnifera, Solanaceae) grew by 13.8%, while maca (Lepidium meyenii, Brassicaceae) increased by 7.1%. At the same time, rhodiola (Rhodiola rosea, Crassulaceae) and bacopa (Bacopa monnieri, Plantaginaceae) declined by 13.0% and 11.6%, respectively. In contrast, the natural expanded channel saw a 30.4% sales increase for rhodiola, along with modest gains of 2.5% for ginseng, a category that includes both Asian ginseng (Panax ginseng, Araliaceae) and American ginseng (P. quinquefolius). Sales of schisandra (Schisandra chinensis, Schisandraceae), although not among the top 40 ingredients in the natural channel, also had a 22.3% increase.

Other Notable Sales Increases

Three other ingredients in the 2024 mainstream channel experienced sales increases of 20% or greater: beet root (*Beta vulgaris*, Amaranthaceae; +67.7%), rhubarb (*Rheum rhaponticum*, Polygonaceae; +29.7%), and St. John's wort (*Hypericum perforatum*, Hypericaceae; +24.0%).

The 24.0% sales increase for St. John's wort in 2024 was calculated using an updated sales figure for 2023 that was significantly different from the one published in *HerbalGram*'s 2023 Herb Market Report. This was due to an internal change in private label coding of SPINS data, as is sometimes the case. Coding changes also affected mainstream sales totals for ginkgo (*Ginkgo biloba*, Ginkgoaceae) and cinnamon (*Cinnamomum* spp., Lauraceae). (See "Calculating Percentage Change" sidebar.)

Rhubarb

Rhubarb first appeared on the mainstream channel's top 40 herbal supplement ingredients list in 2021, ranking 39th, after sales more than doubled from 2020. The herb experienced two years of sales declines in 2022 and 2023, but it climbed to rank 29 in 2024, after a 29.7% sales increase to \$12.8 million. This marks the highest sales ever recorded for this ingredient in mainstream retail stores and the third-largest percentage sales gain in this channel in 2024.

Nearly 78% of rhubarb supplement sales in 2024 were attributed to products marketed for menopause support, totaling approximately \$10 million, a 21.5% increase from the previous year. Notable gains were also observed in the cleanse and detox (257%) category, which accounted for a small percentage of total sales, as well as in the digestive health (70.8%) category — the second-largest health focus





category for rhubarb supplements. Both of these categories saw increased consumer interest in 2024.

Rhubarb products marketed for digestive health generated roughly \$2.8 million. This spike suggests increased consumer interest in one of rhubarb's most established traditional uses: for gastrointestinal support. Rhubarb root and rhizome have been used in traditional Chinese medicine (TCM) for millennia, primarily as a laxative. One of the earliest known TCM texts, *The Herbal Classic of Shen Nong*, describes the use of rhubarb for treating diarrhea, and

The rise in rhubarb supplement

sales for menopause support in 2024

reflects both growing consumer

demand and a broader cultural shift

toward more open conversations

about midlife health.

it remains a common remedy for digestive issues, particularly constipation.^{32,33}

The rise in rhubarb supplement sales for menopause support in 2024 reflects both growing consumer demand and a broader cultural shift toward more open conversations about midlife

health.³⁴ An estimated 1.3 million women in the United States enter menopause each year, and more than half report symptoms such as hot flashes, mood swings, and sleep disturbances. With a growing number of women in the typical menopausal age range (45–56), interest has increased in plant-based alternatives to conventional hormone therapy, especially among women in Generation X.^{35,36} Other herbs traditionally used for menopause support also saw sales increases in 2024, including red clover (*Trifolium pratense*, Fabaceae), which was not a top-40 mainstream ingredient. This herb saw sales nearly double (94.1%), further underscoring the momentum in the mainstream menopause market.³⁷

Top Sales Decrease: Ginkgo

Given the strong mainstream interest in cognitive health products, it may be surprising that ginkgo — a well-known herbal preparation closely associated with memory support — experienced the largest sales decline in the 2024 mainstream retail channel. Ginkgo sales, which ranked 25th, totaled \$15.8 million in 2024, a 30.4% decrease from 2023. However, this decrease is primarily due to a change in SPINS' private label coding, as noted earlier. As was the case for St. John's wort and cinnamon, the percentage decrease for ginkgo was calculated using an updated sales total for 2023, which was significantly different from the one published in the 2023 Herb Market Report. However, several other factors may have contributed to the decline in ginkgo sales, including normalizing market conditions and shifts in consumer attitudes.

Mainstream sales of ginkgo supplements had been increasing steadily for more than a decade. A larger-thannormal sales increase in 2023 suggests that the drop in 2024 may be a simple market correction. The sales spike

in 2023 could have been related to lingering pandemic-related concerns about "brain fog," increased attention to age-related cognitive decline, or several positive ginkgo-related research findings published in 2023, including meta-analyses related to Alzheimer's disease³⁸ and mild cognitive impairment,³⁹ among other potential reasons.

Despite its strong scientific evidence and history of safe use, ginkgo appears to be losing some relevance among mainstream US consumers. The herb faces competition from increasingly well-known nootropic ingredients,

such as certain mushroom species and ashwagandha (which has documented cognitive effects but is better known as an adaptogen⁴⁰). These ingredients are commonly available in popular formats, including gummies and drink powders, which are convenient and may align better with wellness branding and market-

ing.⁴¹ Ginkgo is typically available in capsule and tablet form, which may be less appealing, especially to younger consumers and others experiencing "pill fatigue."

The decline in ginkgo sales may also reflect increased consumer skepticism of products lacking clinical support. The most credible evidence of ginkgo's cognitive benefits is associated with a single product, EGb761° (Dr. Willmar Schwabe GmbH & Co. KG; Karlsruhe, Germany), which has an approximately 50:1 concentration of leaf to extract and standardized levels of constituents. In general, other ginkgo products, such as raw leaf powders and non-standardized extracts that dominate much of the market, do not have the same level of supporting scientific evidence.

Other Notable Sales Decreases

Four other ingredients in the 2024 mainstream channel had sales decreases greater than 20%: wheatgrass/barley grass (*Triticum aestivum*/*Hordeum vulgare*, Poaceae; -29.3%), oat (*Avena sativa*, Poaceae; -26.9%), goji berry (*Lycium barbarum*, Solanaceae; -22.7%), and elder berry (-21.0%).

NATURAL EXPANDED CHANNEL

Top Sales: Turmeric

For the third consecutive year, turmeric was the top-selling herbal supplement ingredient in natural retail stores, with sales totaling \$37.1 million in 2024 — a 1.7% decrease from 2023. (This category also includes sales of curcuminoid-rich extracts, as discussed later.) Turmeric was ranked first in sales in seven of the 11 years from 2014 to 2024, reflecting its enduring popularity among natural products consumers. Sales grew rapidly throughout much of the 2010s, peaking in 2018 at approximately \$51.2 million, before entering a period of gradual decline and then stabi-

lizing. Although CBD surpassed turmeric as the top-selling herbal supplement in this channel from 2018 to 2021, turmeric regained the top position in 2022 and has maintained it through 2024.

In contrast, sales of turmeric in the mainstream channel have been relatively more consistent and continue to rise. From 2015 to 2024, mainstream sales of this ingredient increased from \$15.7 million to nearly \$141.8 million — a more-than-ninefold increase. Sales grew every year during this period, with especially sharp gains from 2017 to 2018 (nearly tripling), and they have remained steady since then. This shift suggests that turmeric has moved beyond its original audience and has found sustained interest, including for emerging uses, among mainstream consumers.

Turmeric has been used for centuries as both a culinary spice and a medicinal herb in traditional medical systems, including Ayurveda, Unani, and traditional Chinese medicine. The vibrant orange-yellow spice has been used historically to support digestion, liver function, joint health, wound healing, and for other benefits, and is considered a general tonic in many cultures. Today, turmeric supplements commonly include extracts with standardized levels of curcuminoids — often considered the primary active compounds in turmeric rhizome — and are sold in various forms, such as capsules, powders, and functional beverages. These compounds have been widely studied for their antioxidant and anti-inflammatory properties.

In 2024, turmeric supplements sold in the natural channel continued to be most strongly associated with pain and inflammation, accounting for 55.1% of total sales, despite a 3.7% decline in this category from 2023. Turmeric products labeled for joint health, the third-largest health focus

category (12.9% of sales), dropped by 9.4%. Meanwhile, several smaller but growing categories have gained traction: liver support saw a significant 291.2% increase, reaching nearly 2% of total sales, while cardiovascular health rose 15% to represent 1.2% of sales. Non-specific products, the second-largest health focus category, accounted for 13.6% of sales and grew modestly by 2.5%, suggesting that many consumers in the natural channel may be seeking turmeric products for broader benefits.

The nearly 300% increase in sales of turmeric products marketed for liver support in 2024 stands out against the otherwise flat or declining health focus categories, including core areas such as pain and inflammation and joint health. This surge may be related to the growing popularity of "detox" drinks on social media, emerging research on turmeric and liver health, and potentially even negative publicity in 2024.

Turmeric was featured prominently in some of 2024's trending "liver-cleansing" detox drinks on platforms like TikTok and Instagram.⁴³ Influencers have promoted turmeric for its ability to "flush out toxins" and "cleanse the blood" — unscientific claims that have contributed to its inclusion in viral detox drink recipes.^{44,45} Turmeric water (or *haldi* water), for example, a traditional Ayurvedic preparation typically consumed in the morning, gained visibility in 2024 as a simple daily detox ritual.⁴⁶

A study published in *The American Journal of Gastroenterology* in early 2025 described a "thriving market for liver supplements, despite limited scientific evidence supporting their efficacy." The authors reported that many of the topranked liver health products they analyzed, most of which included turmeric, often featured "bold health claims, high consumer satisfaction, and significant sales."⁴⁷



Rank	Primary Ingredient	Latin Binomial	Total Sales	% Change from 2023
1	Psyllium ^a	Plantago ovata	\$289,451,642	-2.3
2	Elder berry	Sambucus nigra and S. canadensis	\$145,219,327	-21.0
3	Ashwagandha	Withania somnifera	\$144,458,792	13.8
4	Turmeric ^b	Curcuma longa	\$141,789,971	-2.9
5	Beet root	Beta vulgaris	\$116,990,908	67.7
6	Apple cider vinegar	Malus spp.	\$91,102,277	-18.3
7	Cranberry	Vaccinium macrocarpon	\$74,443,505	-0.2
8	Wheatgrass / Barley grass	Triticum aestivum / Hordeum vulgare	\$46,855,081	-29.3
9	Ginger	Zingiber officinale	\$44,605,997	-12.2
10	Green tea	Camellia sinensis	\$42,703,927	-4.4
11	Fenugreek	Trigonella foenum–graecum	\$37,724,038	-5.8
12	Maca	Lepidium meyenii	\$35,187,955	7.
13	St. John's wort	Hypericum perforatum	\$32,821,231	24.
14	Ivy leaf	Hedera helix	\$31,410,351	−15 .
15	Guarana	Paullinia cupana	\$26,852,160	-6.0
16	Saw palmetto	Serenoa repens	\$26,149,194	-11.
17	Echinacea	Echinacea angustifolia, E. pallida, and E. purpurea	\$25,812,341	-13.0
18	Milk thistle	Silybum marianum	\$20,696,159	-2.4
19	Garlic	Allium sativum	\$19,109,250	-9.8
20	Cinnamon	innamon Cinnamomum spp.		7.6
21	Aloe	Aloe vera	\$18,295,617	-8.9
22	Flax seed / Flax oil	Linum usitatissimum	\$17,250,115	-14.
23	Black cohosh	Actaea racemosa	\$16,810,891	-16.8
24	Senna ^c	Senna alexandrina	\$16,719,138	2.
25	Ginkgo	Ginkgo biloba		-30.
26	Mushrooms (other)	_	\$15,651,639	75.
27	Pumpkin	Cucurbita pepo	\$14,383,908	-12.
28	Horny goat weed	Epimedium spp.	\$13,891,001	4.8
29	Rhubarb	Rheum rhaponticum	\$12,765,322	29.
30	Goji berry	Lycium barbarum	\$11,982,377	-22.
31	Yohimbe	Corynanthe johimbe syn. Pausinystalia johimbe	\$11,285,346	−17.
32	Valerian	Valeriana officinalis	\$10,191,153	-11.
33	Red yeast riced	_	\$9,650,922	-12
34	Васора	Bacopa monnieri	\$8,849,732	-11.6
35	Dandelion	Taraxacum officinale	\$8,428,030	-7.
36	Rhodiola	Rhodiola rosea	\$8,165,815	-13.0
37	Oat	Avena sativa	\$7,905,688	-26.9
38	Nigella	Nigella sativa	\$7,737,997	7.7
39	Chamomile	Matricaria chamomilla	\$7,651,336	8.6
40	Ginseng	Panax spp.	\$7,361,814	

Source: SPINS (52 weeks ending December 31, 2024)

^a Excludes over-the-counter (OTC) drugs containing psyllium. ^b Includes standardized turmeric extracts with high levels of curcumin.

^c Excludes OTC laxative drugs containing senna or sennosides.
^d Red yeast rice is fermented with the yeast *Monascus purpureus*.

Rank	Primary Ingredient	Latin Binomial	Total Sales	% Change from 2023
1	Turmeric ^a	Curcuma longa	\$37,102,858	-1.7%
2	Mushrooms (other)	_	\$27,550,554	14.4%
3	Cannabidiol (CBD)	Cannabis sativa	\$26,030,245	-17.09
4	Elder berry	Sambucus nigra and S. canadensis	\$22,828,748	-7.8%
5	Ashwagandha	Withania somnifera	\$21,247,633	6.0%
6	Algae (other)	_	\$19,516,621	131.79
7	Milk thistle	Silybum marianum	\$19,003,953	33.99
8	Oregano ^b	Origanum vulgare	\$14,834,516	23.69
9	Aloe	Aloe vera	\$13,582,274	0.99
10	Psyllium ^c	Plantago ovata	\$13,569,545	2.6%
11	Wheatgrass / Barley grass	Triticum aestivum / Hordeum vulgare	\$11,353,832	-26.0%
12	Beet root	Beta vulgaris	\$11,259,142	11.69
13	Flax seed and/or oil	Linum usitatissimum	\$10,541,844	-4.4%
14	Quercetind	_	\$10,095,895	-5.29
15	Barberry	Berberis vulgaris	\$9,935,820	17.69
16	Echinacea	Echinacea angustifolia, E. pallida, and E. purpurea	\$9,262,297	4.19
17	Spirulina / Blue-green algaee	Arthrospira platensis and A. maxima / —	\$8,369,963	3.89
18	Saw palmetto	Serenoa repens	\$8,178,134	-1.09
19	Nigella	Nigella sativa	\$7,855,392	-2.29
20	Cranberry	Vaccinium macrocarpon	\$7,381,922	-2.89
21	Maca	Lepidium meyenii	\$7,144,925	-1.49
22	Valerian	Valeriana officinalis	\$6,737,142	-4.2%
23	Chlorophyll / chlorella	— / Chlorella vulgaris	\$6,469,019	-3.89
24	Reishi mushroom	Ganoderma lucidum	\$6,368,523	18.29
25	Garlic	Allium sativum	\$5,806,780	-6.69
26	Kava	Piper methysticum	\$5,528,569	4.89
27	Echinacea / goldenseal combo	Echinacea spp. / Hydrastis canadensis	\$5,444,440	3.19
28	Ginkgo	Ginkgo biloba	\$4,854,179	-0.89
29	Resveratrolf	_	\$4,255,819	2.49
30	Moringa	Moringa oleifera	\$4,201,532	39.29
31	Apple cider vinegar	Malus spp.	\$4,095,338	-14.59
32	Ginger	Zingiber officinale	\$3,803,554	-1.29
33	Cherry	Prunus spp.	\$3,724,472	2.69
34	Rhodiola	Rhodiola rosea	\$3,709,859	30.49
35	Mullein	Verbascum thapsus	\$3,706,019	45.19
36	Chaga mushroom	Inonotus obliquus	\$3,594,046	23.69
37	Red yeast rice ⁹	_	\$3,469,919	0.89
38	Ginseng	Panax spp.	\$3,396,758	2.59
39	Horsetail	Equisetum spp.	\$3,159,963	-14.69
40	Cordyceps mushroom	Ophiocordyceps sinensis syn. Cordyceps sinensis	\$3,147,065	-4.89

Source: SPINS (52 weeks ending December 31, 2024)

^a Includes standardized turmeric extracts with high levels of curcumin. ^b Includes products labeled as containing oregano oil and oregano leaf tinctures.

C Excludes over-the-counter (OTC) drugs containing psyllium.

d Quercetin is a flavonoid found in various plants, such as onions (Allium cepa) and berries.

^e Blue-green algae belong to the phylum Cyanobacteria. f Resveratrol is an antioxidant found in various plants, such as grapes (*Vitis vinifera*), berries, and Japanese knotweed (Polygonum cuspidatum) roots.

⁹ Red yeast rice is fermented with the yeast *Monascus purpureus*.

Researchers continue to investigate the effects of turmeric and curcumin on the liver. Several meta-analyses published in 2024 highlighted curcumin's potential benefits for liver health, including one review that noted improvements in liver-related markers (e.g., liver enzymes and triglycerides) in people with non-alcoholic fatty liver disease. Other 2024 reviews emphasized curcumin's role in supporting liver function by reducing inflammation and oxidative stress.

Paradoxically, media coverage in 2024 linking turmeric to liver injury may have heightened public awareness of the herb's effects on liver health. One widely cited study, published in *JAMA Network Open* in August 2024, extrapolated survey data to suggest potential hepatotoxicity risks associated with six herbal supplement ingredients, including

turmeric.⁵¹ Several media outlets subsequently ran alarmist headlines, presenting the estimates as direct evidence that millions were at risk of liver damage from these botanicals. However, as the American Botanical Council explained in an August 2024 press release,⁵² the study overstated toxicity concerns, misrepresented usage data, and failed to include important context — particularly regarding the frequency of liver-related adverse events and how those rates compare to conventional medications.⁵³

Top Sales Increase: Algae (Other)

Algae (other), which ranked sixth in the natural expanded retail channel, had the greatest percentage sales increase in this channel in 2024, with sales growing by approximately 131.7% to a total of \$19.5 million — up from \$7.6 million in 2023. This marks the fourth consecutive year of double-digit growth for the category. Like the mushrooms (other) category, algae (other) captures sales of algae-based dietary supplements, such as those containing sea moss (Chondrus crispus, Gigartinaceae), that are not individually tracked by SPINS. (This excludes supplements with spirulina/blue-green algae or chlorophyll/chlorella as the primary ingredient, as these are tracked separately.) Sales of algae (other) in natural retail outlets have increased substantially over the past decade, from an estimated \$1.7 million in 2014 to more than \$19 million in 2024. In contrast, 2024 sales of spirulina (+3.8%) and chlorophyll/ chlorella (-3.8%) remained relatively flat, suggesting that the gains in the algae (other) category may be driven

by products featuring multiple algae species (e.g., blends) or lesser-known species that fall in the "other" category (e.g., *Dunaliella salina*, Dunaliellaceae; a beta-carotene-rich species of algae).

"Algae" is a broad term that refers to a diverse group of photosynthetic organisms ranging from microscopic single-celled species to large seaweeds. Algae are typically classified by color — green, red, or brown — and each type has a distinct profile of vitamins, minerals (e.g., iodine), carotenoids, and omega-3 fatty acids. These constituents are associated with a range of potential health benefits, including support for cardiovascular, immune, joint, and eye health.⁵⁴ Green algae like chlorella are rich in beta-carotene, lutein, and zeaxanthin, which are linked to visual and antioxidant





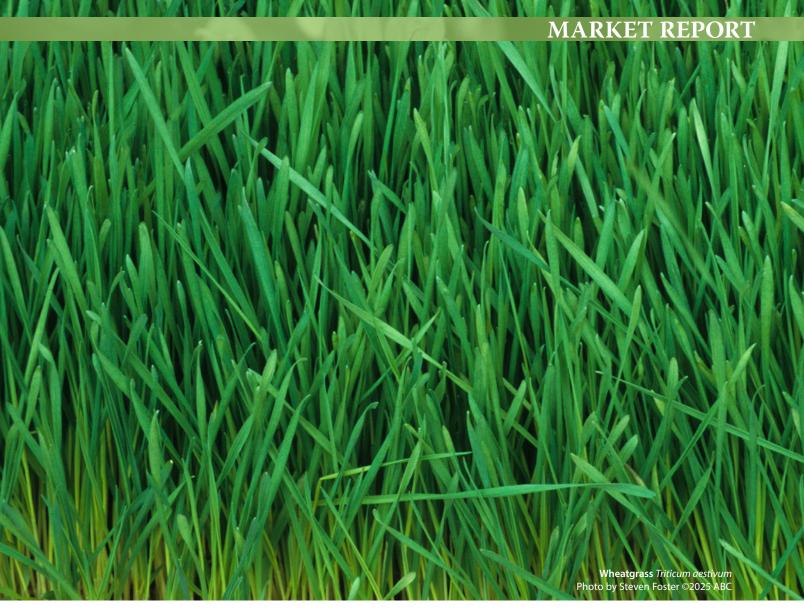


benefits.⁵⁵ Some red algae produce porphyran, a polysaccharide that has shown cholesterol-lowering, antiviral, and anticoagulant effects in lab and animal studies. All brown algae contain fucoxanthin, a carotenoid with anti-inflammatory, antioxidant, and anti-obesity properties, and some species also contain alginates, an ingredient in certain antacids.^{56,57} Although human studies are limited in general, preclinical research findings for some of these algae components are promising.

In 2024, more than 82% of algae (other) supplement sales in natural retail stores were attributed to products with non-specific health claims — a category that saw a 187.1% increase from the previous year. This majority share suggests that most consumers are purchasing these algae products for general wellness rather than for targeted support. The next-largest segments — private label and unknown health focus — accounted for just 7.6% and 6.6% of total sales, respectively. Sales in categories with more defined health focuses remained small by comparison. While products marketed for performance accounted for only 0.21% of total sales (corresponding to just over \$40,000 in sales), they experienced the largest year-over-year growth of 684.1%.

The more than doubling of sales of algae (other) supplements in 2024 may have been driven partly by growing visibility on social media platforms, especially TikTok. Sea moss, also known as Irish moss, became one of the year's breakout wellness trends. Although interest in sea moss, a type of red algae, had been growing for several years, influencers and celebrities continued to promote sea moss gel, capsules, and powders in 2024 for a wide range of potential benefits, including improved digestion, increased energy, and immune support.58 Hashtags like #seamoss and #seamossgel have amassed hundreds of thousands of views on TikTok, with videos frequently showing preparation tips and enthusiastic personal testimonials.⁵⁹⁻⁶¹ While many of the claimed benefits are unverified or anecdotal, the exposure likely helped position algae as a trending "superfood" ingredient. (Although algae [other] was not among the 40 top-selling ingredients in the 2024 mainstream retail channel, sales in that channel also grew substantially, by 27.7%.)

Premium green powders like AG1° (formerly known as Athletic Greens; Carson City, Nevada) continued to gain attention in 2024 through social media, podcasts, and other digital platforms, often through paid promotions.⁶² These products are typically marketed as convenient, "all-in-one" nutritional solutions with antioxidants, vitamins, minerals, adaptogens, probiotics, and other ingredients, and many are offered via subscription. Maintaining proper nutrition likely took on newfound importance for many consumers in 2024, as the use of appetite-suppressing GLP-1 agonists such as semaglutide increased significantly in the United States.⁶³ Although AG1 includes only spirulina and chlorella (in terms of algae ingredients) and is therefore not counted in SPINS' algae (other) category,⁶⁴ its popularity — alongside other top algae-containing blends from brands like Bloom (Austin, Texas) and Huel (Tring, England)⁶⁵ — has likely helped to increase the acceptance of algae as a functional ingredient.



Other Notable Increases

Six other ingredients in the 2024 natural retail channel had sales increases greater than 20%: mullein (*Verbascum thapsus*, Scrophulariaceae; 45.1%), moringa (*Moringa oleifera*, Moringaceae; 39.2%), milk thistle (*Silybum marianum*, Asteraceae; 33.9%), rhodiola (30.4%), chaga (23.6%), and oregano (*Origanum vulgare*, Lamiaceae; 23.6%).

Top Sales Decrease: Wheatgrass/Barley Grass

Wheatgrass/barley grass, which ranked 11th, experienced the sharpest sales decline among the top 40 ingredients in the natural expanded retail channel in 2024, with sales dropping 26.0% from the previous year to \$11.4 million. It was the only item in this channel to have a sales decrease of more than 20% in 2024. Once a top 10 ingredient in this channel (and the second-best seller from 2014 through 2017), sales of wheatgrass/barley grass have lost momentum over the past decade, falling by more than 50% since peaking at \$23.1 million in 2015.

"Wheatgrass" and "barley grass" refer to the young green shoots of these cereal grains that are harvested before the seed heads develop.⁶⁶ Commonly sold as

powders, tablets, or liquid shots made from the fresh-pressed juices, these supplements are often promoted as nutrient-dense superfoods rich in antioxidants, chlorophyll, vitamins, and minerals. Wheatgrass is especially high in vitamins C and E, glutathione (an antioxidant), and amino acids, and is typically marketed for digestive and immune health support. ⁶⁷ Barley grass offers similar benefits and may positively impact cholesterol and body weight, though human studies are limited. ^{66,68}

Sales of wheatgrass and barley grass supplements in the natural expanded channel declined across nearly all major health focus categories in 2024. The majority of sales (82.0%) were attributed to products with non-specific health claims and those marketed for "cleanse and detox" support — both of which saw significant declines from the previous year (-25.0% and -22.5%, respectively). Energy support, cognitive health, and immune health also experienced sharp decreases (-41.7%, -49.2%, and -72.3%, respectively). These declines are notable, given the overall popularity of detox-related products in 2024, suggesting that consumers may be shifting away from well-known ingredients such as wheatgrass in favor of newer, trending ingredients and formats.

Table 6. Total US Retail Sales of Herbal Supplements by Type (Single vs. Combination)							
	Sing	gle-Herb Supple	ments	Combination Herbal Supplements			
	Total Sales (in Billions)	% of Total Sales	Change from Previous Year	Total Sales (in Billions)	% of Total Sales	Change from Previous Year	
2024	\$6.657	50.3%	3.7%	\$6.574	49.7%	7.2%	
2023	\$6.417	51.1%	3.3%	\$6.134	48.9%	5.7%	
2022	\$6.214	51.7%	-2.3%	\$5.803	48.3%	-1.3%	
2021	\$6.360	52.0%	5.8%	\$5.881	48.0%	14.0%	
2020	\$6.009	53.8%	11.5%	\$5.159	46.2%	24.6%	
2019	\$5.390	56.6%	6.3%	\$4.139	43.4%	11.7%	
2018	\$5.072	57.8%	6.6%	\$3.705	42.2%	12.4%	
2017	\$4.759	59.1%	5.6%	\$3.298	40.9%	11.9%	
2016	\$4.505	60.5%	6.1%	\$2.947	39.5%	10.1%	
2015	\$4.245	61.3%	5.5%	\$2.677	38.7%	10.7%	

Source: Nutrition Business Journal

DIRECT SALES

Direct-to-consumer sales of herbal supplements rose by 6.8% in 2024, reaching \$7.5 billion, according to data from NBJ. This is the channel's strongest growth since 2021, following a 5.3% increase in 2023 and a 5.1% decline in 2022 — the first drop since 2008. The brief dip in 2022 likely reflected a market correction after unusually high online sales during the pandemic. Still, the direct sales channel has consistently outperformed both the mass market channel and the natural/specialty channel (individually and combined) for at least two decades.

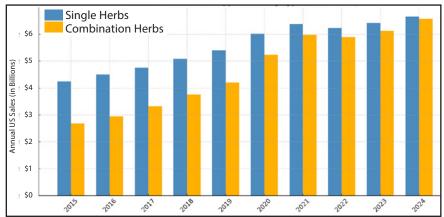
NBJ's direct sales category includes purchases made through online platforms (e.g., Amazon, Walmart), direct media (TV, radio, and print), health practitioners, and multi-level marketing companies. Besides the enduring appeal of online shopping, the rise in subscription-based wellness products, especially those associated with emerging trends, likely also contributed to direct sales growth in 2024.

SALES BY PRODUCT TYPE: SINGLE VS. COMBINATION

Continuing a longstanding trend, sales growth of combination herbal supplements in 2024 remained higher than that of single-herb supplements. According to NBJ data, combination formulas grew by 7.2% in 2024, reaching \$6.57 billion in sales. In contrast, sales of single-herb products grew by 3.7%, totaling \$6.66 billion. As a result, the market share gap between the two categories continued to narrow, and sales are now roughly equal (50.3% for single-herb products and 49.7% for combination formulas).

Combination products are gaining popularity among consumers seeking convenient wellness options with multi-

Figure 2. Total US Retail Sales of Herbal Supplements by Type (2015–2024)



Source: Nutrition Business Journal

ple benefits. These formulas typically appeal to people with more general health goals, such as nutritional support, rather than specific conditions. Meanwhile, single-ingredient products, which once had a much larger market share, now face increased competition from these lifestyle-oriented formulations. However, single-ingredient products continue to represent slightly more than half of all herbal supplement sales and remain vital for ingredient-conscious shoppers who prefer targeted products.

CONCLUSION

After a rare decline in 2022, US sales of herbal supplements rebounded in 2023, prompting cautious optimism among industry experts for a return to the market segment's long-standing growth trend. The 5.4% increase in 2024 supports that outlook and suggests a shift back to the moderate, steady expansion seen in the early 2010s, when sales grew by an average of 5.3% (2010–2013). Rather than being driven by short-term surges in certain categories (e.g., immune health products), the sales growth in 2024 seems to reflect sustained consumer interest in healthy aging and practical, long-term wellness support.



Aloe Aloe vera Photo by Steven Foster ©2025 ABC

Mainstay ingredients such as psyllium and turmeric maintained their top positions in the mainstream and natural expanded retail channels, respectively, as several other well-established herbs (e.g., ginkgo, wheatgrass) experienced sharp declines in 2024. This shows that recognition and alignment with common health goals alone are not always sufficient to ensure continued success. In 2024, some herbs gained renewed relevance when marketed for emerging consumer priorities, such as turmeric for liver health and rhubarb for menopause, demonstrating how evolving wellness goals can shape how well-known herbs are presented in the marketplace.

In 2024, sales of functional mushroom and algae supplements continued to increase, fueled by consumer demand for convenient, multifunctional wellness options. These products, including popular mushroom coffee substitutes and sea moss blends, are marketed as easy additions to daily routines and benefit from high visibility on social media platforms.

Merriam-Webster's 2024 Word of the Year, "polarization," captured the general sense of disconnection and overstimulation that seemed to pervade much of the year. ⁶⁹ Amid political divisions and digital overload, consumers spent a record amount on herbal supplements — not only for stress relief and focus, but also to support foundational health needs like cardiovascular and cognitive function, areas with broad, crossgenerational relevance. As people continue to seek stability and practical support during uncertain times, herbal products that offer multiple benefits and convenience seem well-positioned to remain cornerstones of the dietary supplements market. HG

References

- Engels G, Brinckmann J. Psyllium. Plantago ovata (P. ispaghula), P. afra (P. psyllium), and P. indica (P. arenaria). Family: Plantaginaceae. HerbalGram. 2018;117:8-17. Available at: www.herbalgram.org/resources/herbalgram/issues/117/table-of-contents/hg117-herbprofile/. Accessed July 17, 2025.
- Masood R, Miraftab M. Psyllium: Current and Future. In: Anand SC, Kennedy JF, Miraftab M, Rajendran S, eds. Medical and Healthcare Textiles. Sawston, UK: Woodhead Publishing; 2010:244-253. Available at: www.sciencedirect.com/science/article/abs/pii/B9781845692247500303. Accessed July 18, 2025.
- 21 CFR §101.93. Certain types of statements for dietary supplements. US Food and Drug Administration website. Available at: www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-101/subpart-F/section-101.93. Accessed June 30, 2025.
- Label claims for conventional foods and dietary supplements. US Food and Drug Administration website. Available at: www.fda.gov/food/nutrition-food-labeling-and-critical-foods/ label-claims-conventional-foods-and-dietary-supplements. Accessed July 18, 2025.
- 21 CFR § 310.545. Drug products containing certain active ingredients offered over-the-counter (OTC) for certain uses. US Food and Drug Administration website. Available at: www.ecfr.gov/current/title-21/chapter-I/subchapter-D/part-310/subpart-E/section-310.545. Accessed July 18, 2025.
- 21 CFR § 101.81 Health claims: Soluble fiber from certain foods and risk of coronary heart disease (CHD). US Food and Drug Administration website. Available at: www.ecfr.gov/ current/title-21/chapter-I/subchapter-B/part-101/subpart-E/ section-101.81. Accessed July 18, 2025.

- Authorized health claims that meet the significant scientific agreement standard. US Food and Drug Administration website. Available at: www.fda.gov/food/nutrition-foodlabeling-and-critical-foods/authorized-health-claims-meetsignificant-scientific-agreement-ssa-standard. Accessed July 18, 2025.
- Health, United States. Heart disease deaths. US Centers for Disease Control and Prevention website. Available at: www. cdc.gov/nchs/hus/topics/heart-disease-deaths.htm. Accessed July 18, 2025.
- Montemarano M. The new view on aging: Enhancing health span and optimizing performance. April 11, 2025. Nutraceuticals World website. Available at: www.nutraceuticalsworld.com/the-new-view-on-aging-enhancing-health-span-and-optimizing-performance/. Accessed July 18, 2025.
- Moloughney S. Heart health: A leading cause for concern. January 23, 2025. Nutraceuticals World website. Available at: www.nutraceuticalsworld.com/heart-health-a-leading-cause-for-concern/. Accessed July 18, 2025.
- Burga S. Why Gen Z is drinking less. January 1, 2025. TIME Magazine website. Available at: https://time.com/7203140/ gen-z-drinking-less-alcohol/. Accessed July 18, 2025.
- Case study and trends. TikTok and health supplements:
 Opening new avenues for marketing. January 31, 2025.
 Kolmar BNH website. Available at: https://kolmarbnh.
 co.kr/en/blog/tiktok-and-health-supplements-opening-new-avenues-for-marketing/. Accessed July 18, 2025.
- Cleveland Clinic survey: Many Americans unaware of heart health risks, skip medication doses [press release]. Cleveland, OH: Cleveland Clinic; February 4, 2025. Available at: https://newsroom.clevelandclinic.org/2025/02/04/clevelandclinic-survey-many-americans-unaware-of-heart-health-risksskip-medication-doses. Accessed July 18, 2025.
- 14. Inside the Bottle. 8 ways supplement companies leverage science to drive sales and consumer trust spotlight. New Hope Network website. Available at: www.newhope.com/business-management/8-ways-supplement-companies-leverage-science-to-drive-sales-and-consumer-trust-spotlight. Accessed July 30, 2025.
- "Psyllium" search results. National Library of Medicine's PubMed website. Available at: https://pubmed.ncbi.nlm.nih. gov/?term=psyllium&filter=pubt.randomizedcontrolledtrial&s ort=pubdate. Accessed July 18, 2025.
- Zhu R, Lei Y, Wang S, et al. *Plantago* consumption significantly reduces total cholesterol and low-density lipoprotein cholesterol in adults: A systematic review and meta-analysis. *Nutr Res.* 2024;126:123137. doi:10.1016/j. nutres.2024.03.013. Available at: https://pubmed.ncbi.nlm. nih.gov/38688104/. Accessed July 18, 2025.
- 17. Gholami Z, Paknahad Z. The beneficial effects of psyllium on cardiovascular diseases and their risk factors: Systematic review and dose-response meta-analysis of randomized controlled trials. *J Funct Foods*. 2023;111:105878. doi:10.1016/j.jff.2023.105878. Available at: www.sciencedirect.com/science/article/pii/S1756464623004784. Accessed July 18, 2025.
- Smith T, May G, Eckl V, Reynolds CM. US sales of herbal supplements increase by 8.6% in 2019. *HerbalGram*. 2020;127:54-69. Available at: www.herbalgram.org/resources/ herbalgram/issues/127/table-of-contents/herbalgram-127-herb-market-report/. Accessed July 18, 2025.
- Plotkin M. The mushroom moment. HerbalGram. 2024;139:36-41. Available at: www.herbalgram.org/resources/ herbalgram/issues/139/table-of-contents/hg139-feat-mushroom-moment/. Accessed July 30, 2025.



- Polito R. Monitor: Brain health supplements see growth from two directions. August 30, 2023. New Hope Network website. Available at: www.newhope.com/market-data-and-analysis/ monitor-brain-health-supplements-see-growth-from-two-directions. Accessed July 18, 2025.
- United States dementia cases estimated to double by 2060 [press release]. New York, NY: NYU Langone Health; January 13, 2025. Available at: https://nyulangone.org/news/united-statesdementia-cases-estimated-double-2060. Accessed July 18, 2025.
- Montemarano M. Cognitive health performance for today, and clarity over a lifetime. October 7, 2024. Nutraceuticals World website. Available at: www.nutraceuticalsworld.com/cognitivehealth-performance-for-today-and-clarity-over-a-lifetime. Accessed July 15, 2025.
- Burnout Report 2025 reveals generational divide in levels of stress and work absence. Mental Health UK website. Available at: https://mentalhealth-uk.org/blog/burnout-report-2025-reveals-generational-divide-in-levels-of-stress-and-workabsence/. Accessed July 30, 2025.
- Cigna 360 Global Well-being Survey: Exhausted by Work
 — The Employer Opportunity. November 2022. Cigna Global Health website. Available at: www.cignaglobalhealth. com/static/docs/pdfs/na/cigna-360-global-well-being-survey-2022-employer-opportunity.pdf. Accessed July 18, 2025.
- Bartone PT, McDonald K, Hansma BJ. Hardiness and burnout in adult US workers. Journal of Occupational and Environmental Medicine. 2022;64(5):397-402. doi: 10.1097/ JOM.0000000000002448. Available at: https://journals.lww. com/joem/fulltext/2022/05000/hardiness_and_burnout_in_ adult_u_s_workers.7.aspx. Accessed July 30, 2025.

- 26. The rise of mushroom supplements: Wellness trend that's here to stay. February 2025. US Veterans Magazine. Available at: https://usveteransmagazine.com/usvm/the-rise-of-mushroom-supplements-wellness-trend-thats-here-to-stay/. Accessed July 18, 2025.
- The rise of functional mushrooms: A market overview.
 October 8, 2024. Alpharoot website. Available at: https://alpharoot.com/insights/functional-mushrooms-market/.
 Accessed July 18, 2025.
- 28. Shanmugasundaram M, Tamilarasu A. The impact of digital technology, social media, and artificial intelligence on cognitive functions: a review. *Front Cognit*. 2023;(2)23. https://doi.org/10.3389/fcogn.2023.1203077. Available at: www.frontiersin.org/journals/cognition/articles/10.3389/fcogn.2023.1203077/full. Accessed July 30, 2025.
- 29. Stieger S, Sabine W. Associations between social media use and cognitive abilities: Results from a large-scale study of adolescents. *Computers in Human Behavior*. 2022;135:107358. Available at: www.sciencedirect.com/science/article/pii/S0747563222001807. Accessed July 30, 2025.
- 'Brain rot' named Oxford Word of the Year 2024. December 2, 2024. Oxford University Press website. Available at: https://corp.oup.com/news/brain-rot-named-oxford-word-of-the-year-2024/. Accessed July 18, 2025.
- 31. Moloughney S. Nootropics and adaptogens attract market attention. Nutraceuticals World website. June 3, 2024. Available at: www.nutraceuticalsworld.com/nootropics-and-adaptogens-attract-market-attention/. Accessed July 18, 2025.







- 32. Powell S. The history of rhubarb: medicinal uses, recipes and why owning it in Russia once meant a warrant for your death. October 1, 2020. *South China Morning Post* website. Available at: www.scmp.com/lifestyle/food-drink/article/3103436/history-rhubarb-medicinal-uses-recipes-and-why-owning-it. Accessed July 18, 2025.
- 33. Wen Y, Yan P-J, Fan P-X, et al. The application of rhubarb concoctions in traditional Chinese medicine and its compounds, processing methods, pharmacology, toxicology and clinical research. Front Pharmacol. 2024;15:1442297. doi:10.3389/fphar.2024.1442297. Available at: https://pmc.ncbi.nlm.nih.gov/articles/ PMC11335691/. Accessed July 18, 2025.
- 34. Dalvi SA. Menopause: Why is everyone talking about it now? *J Obstet Gynaecol India*. 2024;74(3):196-200. doi:10.1007/s13224-024-02033-0. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC11224163/. Accessed July 18, 2025.
- Peacock K, Carlson K, Ketvertis KM. Menopause. National Library of Medicine website. Available at: www.ncbi.nlm.nih.gov/books/NBK507826/. Accessed July 18, 2025.
- 36. Reed T. Rising menopause market captures generational turn. January 23, 2025. Axios website. Available at: www.axios.com/2025/01/23/menopause-influencers-symptoms-supplements. Accessed July 18, 2025.
- 37. Ghazanfarpour M, Sadeghi R, Roudsari RL, Khorsand I, Khadivzadeh T, Muoio, B. Red clover for treatment of hot flashes and menopausal symptoms: A systematic review and meta-analysis. *Journal Obstet Gynaecol.* 2015;36(3):301-311. doi: 10.3109/01443615.2015.1049249. Available at: www.tandfonline.com/doi/abs/10.3109/01443615.2015.1049249. Accessed July 18, 2025.
- 38. Li D, Ma J, Wei B, Gao S, Lang Y, Wan X. Effectiveness and safety of ginkgo biloba preparations in the treatment of Alzheimer's disease: A systematic review and meta-analysis. *Front Aging Neurosci*. 2023;15:1124710. doi: 10.3389/fnagi.2023.1124710. Available at: www.frontiersin.org/journals/aging-neuroscience/articles/10.3389/fnagi.2023.1124710/full. Accessed July 18, 2025.
- Hort J, Duning T, Hoerr R. Ginkgo biloba extract EGb 761 in the treatment of patients with mild neurocognitive impairment: A systematic review. Neuropsychiatr Dis Treat. 2023;19:647-660. doi: 10.2147/NDT. S401231. Available at: https://pubmed.ncbi.nlm.nih.gov/36994422/. Accessed July 18, 2025.
- Lorca C, Mulet M, Arévalo-Caro C, et al. Plant-derived nootropics and human cognition: A systematic review. *Critical Reviews in Food Science and Nutrition*. 2022;63(22):5521-5545. https://doi.org/10.1080/104 08398.2021.2021137. Available at: www.tandfonline.com/doi/full/10.1080/10408398.2021.2021137. Accessed July 31, 2025.
- Supplement delivery formats run from gummies to powders to ... crystals? Oh, my! August 8, 2023. SupplySide Supplement Journal website. Available at: www.supplysidesj.com/market-trends-analysis/supplement-delivery-formats-run-from-gummies-to-powdersto-crystals-oh-my-. Accessed July 18, 2025.
- Engels G. Turmeric. Curcuma longa. Family: Zingiberaceae. HerbalGram. 2009;84:1-3. Available at: www.herbalgram.org/resources/herbalgram/issues/84/ table-of-contents/article3450/. Accessed July 18, 2025.



- Volansky R. Liver cleanses 'not uniformly harmful' but 'not uniformly safe.' June 11, 2025. Healio website. Available at: www.healio.com/news/gastroenterology/20250611/livercleanses-not-uniformly-harmful-but-not-uniformly-safe. Accessed July 18, 2025.
- Clarance D. No, a juice cleanse won't detox your liver: Here's what will. May 24, 2025. India Today website. Available at: www.indiatoday.in/health/story/liver-detox-supplements-juice-cleanse-herbal-products-liver-detox-medical-science-2725840-2025-05-23. Accessed July 18, 2025.
- #detox. TikTok website. Available at: www.tiktok.com/tag/ detox. Accessed July 15, 2025.
- 46. Khan S. Haldi water: 10 benefits of sipping this wonder drink every morning. February 21, 2024. *Times of India* website. Available at: https://timesofindia.indiatimes.com/ life-style/health-fitness/web-stories/haldi-water-10-benefitsof-sipping-this-wonder-drink-every-morning/photostory/107857037.cms. Accessed July 18, 2025.
- 47. Ahmed T, Patel A, Viswanath P, Inga E, Paleti S. Liver cleansing imposters: An analysis of popular online liver supplements. Am J Gastroenterol. 2025. doi: 10.14309/ajg.0000000000003451. Available at: https://journals.lww.com/ajg/abstract/9900/liver_cleansing_imposters_an_analysis_of_popular.1664.aspx. Accessed July 18, 2025.
- 48. Molani-Gol R, Dehghani A, Rafraf M. Effects of curcumin/ turmeric supplementation on the liver enzymes, lipid profiles, glycemic index, and anthropometric indices in non-alcoholic fatty liver patients: An umbrella meta-analysis. *Phytother Res.* 2024;38(2):539-555. doi: 10.1002/ptr.8051. Available at: https://pubmed.ncbi.nlm.nih.gov/37918958. Accessed July 18, 2025.
- Malik A, Malik M. Effects of curcumin in patients with non-alcoholic fatty liver disease: A systematic review and meta-analysis. *Can Liver J.* 2024;7(2):299-315. doi: 10.3138/canlivj-2023-0022. Available at: https://pubmed. ncbi.nlm.nih.gov/38746865/. Accessed July 18, 2025.
- Qin T, Chen X, Meng J, et al. The role of curcumin in the liver-gut system diseases: From mechanisms to clinical therapeutic perspective. *Crit Rev Food Sci Nutr.* 2024;64(24):8822-8851. doi: 10.1080/10408398.2023.2204349. Available at: https://pubmed.ncbi.nlm.nih.gov/37096460/. Accessed July 18, 2025.
- 51. Likhitsup A, Chen VL, Fontana RJ. Estimated exposure to 6 potentially hepatotoxic botanicals in US adults. *JAMA Netw Open.* 2024;7;(8):e2425822. doi:10.1001/jamanetworkopen.2024.25822. Available at: https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2821951. Accessed July 18, 2025.
- 52. JAMA paper exaggerates liver injury risk of several herbal dietary supplements [press release]. Austin, TX: American Botanical Council; August 7, 2024. Available at: www.herbalgram.org/news/press-releases/2024/jama-paper-exaggerates-liver-injury-risk-of-several-herbal-dietary-supplements/. Accessed July 18, 2025.
- ABC staff. JAMA Network Open paper exaggerates liver injury risk of several herbal dietary supplements. HerbalGram. 2024;142:32-35. Available at: www.herbalgram.org/resources/herbalgram/issues/142/table-of-contents/ hg142-wnews-jama/. Accessed July 18, 2025.
- 54. Kumari A, Garima, Bharadvaja N. A comprehensive review on algal nutraceuticals as prospective therapeutic agent for different diseases. *3 Biotech.* 2023;13(2):44. doi: 10.1007/s13205-022-03454-2. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC9834485/. Accessed July 18, 2025.

- 55. Wu JY, Tso R, Teo HS, Haldar S. The utility of algae as sources of high value nutritional ingredients, particularly for alternative/complementary proteins to improve human health. *Nutr Food Sci Tech.* 2023;10:1277343. doi: 10.3389/fnut.2023.1277343. Available at: www.frontiersin.org/journals/nutrition/articles/10.3389/fnut.2023.1277343/full. Accessed July 18, 2025.
- Ye S, Xie C, Agar OT, Barrow CJ, Dunshea FR, Suleria HAR. (2023). Alginates from Brown Seaweeds as a Promising Natural Source: A Review of Its Properties and Health Benefits. Food Reviews International. 2023;40(9):2682-2710. https://doi.org/10.1080/87559129.2023.2279583. Available at: www.tandfonline.com/doi/full/10.1080/87559129.2023.2279583. Accessed July 31, 2025.
- 57. Kumar A, Soratur A, Kumar S, Maran BAV. A review of marine algae as a sustainable source of antiviral and anticancer compounds. *Macromol.* 2025:5(1):11. doi: 10.3390/ macromol5010011. Available at: www.mdpi.com/2673-6209/5/1/11. Accessed July 18, 2025.
- 58. David L. Sea moss has become a billion-dollar health trend. Is it worth the hype? April 8, 2025. *National Geographic* website. Available at: www.nationalgeographic.com/health/article/sea-moss-health-benefits-effects?rnd=1752857880627 &loggedin=true. Accessed July 18, 2025.
- #seamoss. TikTok website. Available at: www.tiktok.com/tag/ seamoss. Accessed July 15, 2025.
- 60. #seamossgel. TikTok website. Available at: www.tiktok.com/tag/seamossgel. Accessed July 15, 2025.
- McCarthy A. Should you drink sea moss, TikTok's favorite new smoothie ingredient? July 20, 2022. Eater website. Available at: www.eater.com/23270190/sea-moss-gelerewhon-smoothies-irish-moss-explained. Accessed July 18, 2025.
- 62. Klich TB. AG1 scoops up \$600 million in revenue in 2024. December 9, 2024. *Forbes* website. Available at: www.forbes. com/sites/tanyabenedictoklich/2024/12/09/ag1-scoops-up-600-million-in-revenue-in-2024/. Accessed July 18, 2025.
- 63. Health and wellness trend report 2024. The Vitamin Shoppe. Available at: https://press.vitaminshoppe.com/wp-content/uploads/2024/06/The-Vitamin-Shoppe.Health-Wellness-Trend-Report.2024.pdf. Accessed July 18, 2025.
- 64. High-quality ingredients optimized for impact. AG1 website. Available at: https://drinkag1.com/about-ag1/ingredients/ctr. Accessed July 18, 2025.
- Baker R. Best green powders of 2024. November 4, 2024.
 GNC website. Available at: www.gnc.com/learn/wellness/best-greens-powder.html. Accessed July 18, 2025.
- Zeng Y, Pu X, Yang J, et al. Preventative and therapeutic role of functional ingredients of barley grass for chronic diseases in human beings. *Oxid Med Cell Longev*. 2018;2018:3232080. doi: 10.1155/2018/3232080. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC5904770/. Accessed July 18, 2025.
- 67. What is wheatgrass? September 26, 2022. Association of Accredited Naturopathic Medical Colleges website. Available at: https://aanmc.org/naturopathic-kitchen/wheatgrass/. Accessed July 9, 2025.
- 68. Ajmera R. What is barley grass? Everything you need to know. June 20, 2025. Healthline website. Available at: www. healthline.com/nutrition/barley-grass. Accessed July 18, 2025.
- 2024 Word of the Year: Polarization. Merriam-Webster website. Available at: www.merriam-webster.com/wordplay/word-of-the-year. Accessed July 18, 2025.



