

# Digging plants

Consumers look to plants for health and meaning

By Bill Giebler

Welcome to the plant renaissance. Everywhere we look, people are turning to plants with vigor and curiosity, for hobby, diet, health and healing. *Re*-turning is more accurate. The human connection to plants is long and storied, and while we never fully lost connection, the 20<sup>th</sup> century was one of engineered disconnect: plastics replaced wood

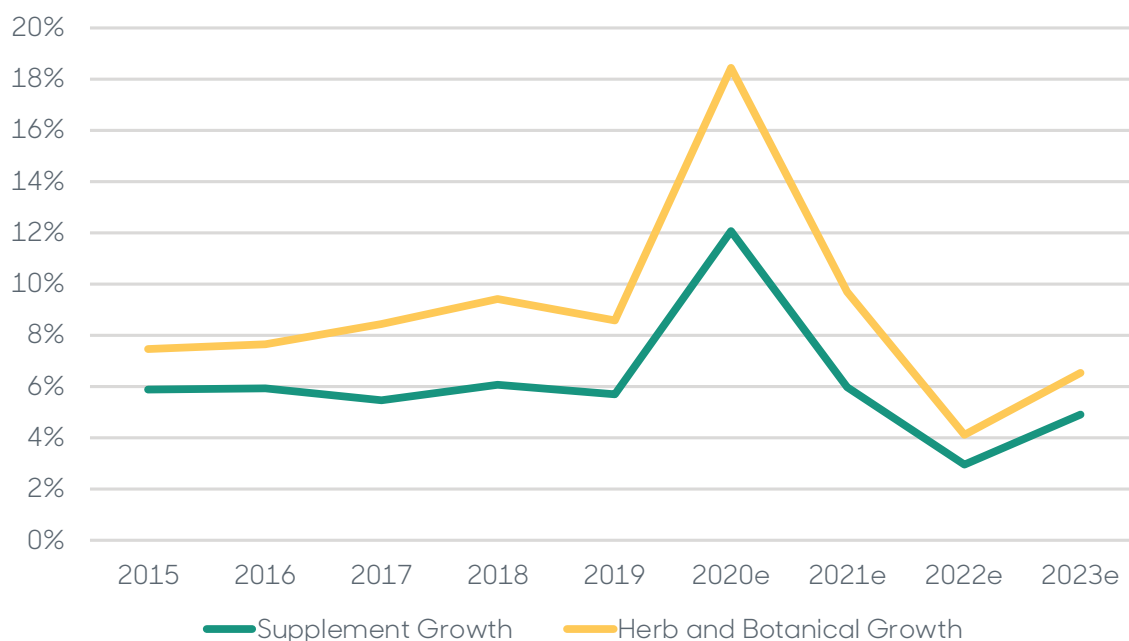
in our built environment, processed foods replaced fresh vegetables, beef became what's for dinner, and pharmaceuticals took over the role of healing. The sum effect was one more degree of separation from the natural world.

The return is inevitable, though. It's impossible for humans to maintain such a separation: we simply are part of this com-

### NBJ Takeaways

- » Herbs and botanicals consistently outpace overall supplement growth
- » Awareness and popular literature around the power of plants to heal people and the planet have gone increasingly mainstream
- » Humans have maintained a mystical and often spiritual connection to plants throughout time

### HERB AND BOTANICAL VS. TOTAL SUPPLEMENT GROWTH, 2015-2023E



Source: Nutrition Business Journal (\$mil, consumer sales)

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## LETTER FROM NBJ: NO SIMPLE SLOGANS

“Plant Power” might sound like a slogan painted on the side of a van, preferably a VW bus, in 1969. It might include a smiling rutabaga and a pony-tailed farmer in bell-bottomed overalls.

But it's also the name of this issue.

And a lot closer to a call to action than an airbrushed slogan.

We are writing this issue to explore a true movement among consumers who demand a connection between what's on their plates, and even what's in their tablets or capsules, to the earth from which it sprouted.

We see the roots of that in roundups of reflections from pioneers and leaders in plant-based foods and herbs and botanicals (pages 26 and 28). In *Regenerating Botanicals* on page 17, we also explore a rising tide of regenerative agriculture just beginning to touch the supply chain for herbs and botanicals.

But we should look at challenges that the owner of that Plant Power bus might not have foreseen. In a piece on clean label issues in a meat-alternative market powered by food tech, plant-first proponents are up against critics who call products like the Beyond Burger the kind of processed food that the natural product industry should be avoiding and not embracing.

But others say that modern meat alternatives are drawing meat eaters away from their “it's what's for dinner” mentality, and any movement in the direction of plants is important.

That's the thing about movements on the scale of Plant Power—they're not going to be simple. What could make a difference in how the move to plants is navigated in the coming decade is how it's negotiated. People will debate whether Impossible Foods' novel protein is healthy, but nobody should question whether having that debate is healthy.

Talking about the what and the why of health in our food supply should be mission one for natural products. A food pyramid driven by industrial producers and a lack of transparency in the supply chain did nothing good for the American diet. Nobody should be ready to march into an increasingly plant-based future without asking some questions.

Those questions should be about health, but also about climate change and whether moving from animal protein to plant protein is as intuitively climate smart as it looks. The debate also needs to include farmers. Does the plant-based diet usher in even more commodity crop agriculture, and is there a way that can be democratized so that families on small farms don't get left behind?

Little of this is clear at this point.

And none of it is simple enough to paint on the side of a van.

**Rick Polito**  
NBJ Editor in Chief



COVER STORY CONTINUED

plex ecosystem, teeming with shared microbiota—whether fecund or filthy—and are fundamentally reliant on it. Increasingly, people are waking up to this connection in ways that are practical and, for some, even spiritual.

The natural products industry is a bellwether of the return, but the result can be seen across cultural strata. The National Gardening Association reports consistent increases in the gardening industry, with the highest growth being among millennials. We see a growing acceptance of the powerful mind-altering potential of plants and fungi, from broad legalization of cannabis to decriminalization of psilocybin and the growing interest in psychotropics like ayahuasca. It's notable that best-selling food writer Michael Pollan's latest book, *How to Change Your Mind*, espouses the benefits of psychedelics.

Pollan's apropos and oft quoted edict, “Eat food, not too much, mostly plants,” points to a significant growth category with those last two words. Animal-free packaged goods outpace overall food growth by more than five times, according to the **Good Food Institute's** market overview, noting that “sales of plant-based foods that directly replace animal products have grown 29% in the past two years to \$5 billion.” Even beyond plant-only diets, vegetables are playing a stronger role in the U.S. diet. The U.S. government's MyPlate standards now slice the plate, in rank, by vegetables, fruits and grains, with protein—no longer named “meat”—as the smallest portion.

In the purview of *NBJ*, herbs and botanicals represented 19.7% of supplement sales in 2019, second in size only to vitamins, and are the fastest growing supplement category, consistently growing about one-and-a-half times as fast as overall supplements. In 2020, when the industry is projected to close with unprecedented 12.1% growth, the herbs and botanicals piece of that pie will grow at 18.5% to \$11.4 billion.

### We need plants

“A lot more people are paying attention to plants,” says supplement industry veteran, author, ethnobotanist and Medicine Hunter Chris Kilham. “We eat plants, we drink their

juices, we breathe the air that they provide for us, we build homes out of them, we wear clothing made of fiber from plants, we utilize them as medicines, we adorn ourselves with them, we distill their essences, we decorate with them.” We have intimate involvements with plants, he says, “and it makes all the sense in the world because, up until urbanized living, throughout all time and all history, people and plants have been a thoroughly integrated part of the web of life.”

Now, Kilham says, and in part due to what he calls “the increasingly failed model of most synthetic drugs,” people are circling back to “the reality that the plants all around us are living beings, that without them there is no life at all, and that by working with them ... we can live in a more harmonious manner.”

“I think it’s a real opportunity to establish a relationship between people and the natural world,” says herbalist, author and educator Lisa Ganora. “It’s the same mission

that regenerative agriculture is on. If our food isn’t healthy, if our soil isn’t healthy, if our air isn’t healthy, if our environment isn’t healthy, we can’t expect to be healthy by trying to make up for that by taking synthetic chemicals. That’s not even logical.”

Ganora points to the reciprocity between plants and humans exhibited in the exchange of oxygen and carbon dioxide. “That’s a very profound fundamental relationship, right? We tend to forget that because we just objectify plants. In recent iterations of human culture, I think we’ve lost the wonder and the respect that that relationship engenders. To realize that interdependence is so deep.”

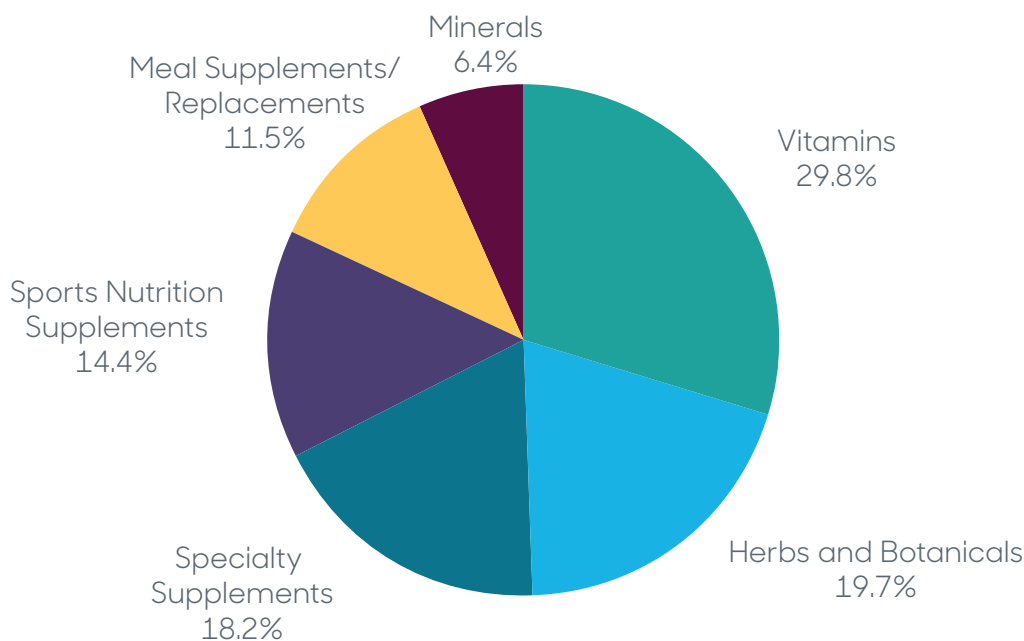
As the director of the Colorado School of Clinical Herbalism, Ganora says she sees more and more applications all the time. “Everybody wants herbs right now, and they want good, accurate information on them.” There’s a depth to this craving, too. “It’s not just about the science,” she says. “I think it’s about that relationship with living entities.”

## Getting healthy

“So many people are dealing with some layer of chronic underlying stress,” says Danielle Ryan Broida, a registered herbalist, holistic nutritionist and national educator at mushroom foods brand **Four Sigmatic**. We’re seeing a rising curiosity about what solutions exists, she says. This includes yoga, acupuncture, breathwork and a return to nature. “It’s this realization that there’s no pill that can replace sunshine on our skin or being outside or eating a nutrient-dense meal.”

Broida sees people turning to herbal medicine as they realize that so much of the pharmaceutical industry isn’t truly about long-term sustainable solutions to our health. “It’s more about this quick fix or this pill that we can take short term,” she says. “And that’s still really intriguing for a lot of people, but in the past 50, 100 years of relying on pills to fix our problems, we’re realizing the problem is not necessarily going away, it’s just replaced with, perhaps, a

## SUPPLEMENT SALES BY PRODUCT CATEGORY, 2019



Source: Nutrition Business Journal (\$mil, consumer sales)



different issue or a different problem.”

This calls on a significant shift in thinking, but people are indeed turning to solutions beyond symptom relief. “It’s not about coming up with an herbal solution for that expression,” she says. “It’s reinvigorating the body, replenishing what the body is deficient in and giving the body the tools to be able to overcome the symptoms so that the symptoms are gone in six months, a year, 10 years down the road.”

It’s a commitment, and for some it’s a deep one. “For a great many people, there’s a spiritual dimension,” says Kilham, “a real sense of interconnectedness with all life and all things.” That gets reflected in the way people relate to the plants they work with through harvesting, processing and administering. That awareness is a force in our culture, Kilham says, “and while I would not say it’s the dominant force, I believe that that kind of spiritual relationship is critically important, not only to a real deep understanding of our relationship with plants and what’s possible with them

but also to the future of life on this planet.”

Ganora agrees, noting that all spiritual traditions point to interconnectedness. “To me, regenerative agriculture, herbal medicine, spirituality, phytochemistry and plant sciences are all aspects of the same unity,” she says. “It’s all just one big pool of amazement.”

### The diet of consciousness

Yoga legend and author Sharon Gannon lists three main reasons a person will typically stop eating animal products. These are health, animal rights and environmental impact. “But for a spiritual practitioner, a yogi, there is a fourth reason as well; that reason is enlightenment.”

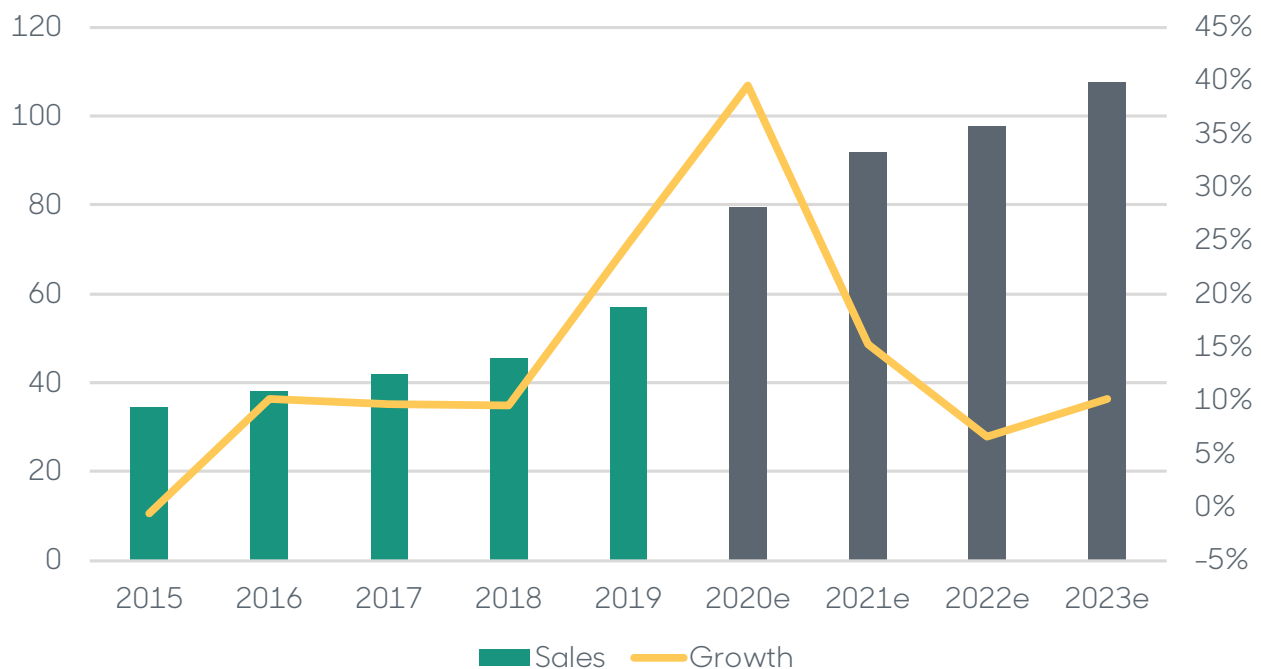
Gannon is the co-founder of Jivamukti Yoga and an outspoken proponent of veganism. Her book *Yoga and Veganism* (published in 2008 as *Yoga and Vegetarianism*) was retitled and reissued this May. “To one who is interested in enlightenment, paying attention to how your actions impact others and the greater world becomes of para-

mount importance,” she wrote in an email to *NBJ*. “If we want happiness and freedom for ourselves, then it will behoove us to do all we can to bring happiness to others—all others, including other animals. This would naturally extend to not eating animals or causing them harm in any way.”

Robin Robertson knows this experientially. Thirty-five years ago, the professional chef began to question the American ethic that animal products must be part of most meals. Research led to the realization that this wasn’t necessary, which ushered in a sense of being true to herself and “launched a change in my whole lifestyle,” she says. “And it really did elevate my consciousness.” Robertson has since penned more than 20 vegan cookbooks.

Going plant based, she says, “healed my body and focused my heart and mind. It was like a whole transformation almost instantly.” And it was achieved without any difficulty. Rather than a sense of giving anything up, Robertson felt released from shackles. “If you have bad food and

### U.S. MUSHROOM SUPPLEMENT SALES AND GROWTH, 2015-2023E



Source: Nutrition Business Journal (\$mil, consumer sales)

a disharmonious atmosphere, it's bad for your health," she says. "Once you let go of all that, it opens you up to be a more peaceful, spiritual person, a more harmonious person."

## Plant intelligence

"I'd say that several hundred million years of coevolution has something to do with it," Ganora says, responding to a question about how, beyond trial and error, botanical medical knowledge is established. "I don't think consciousness is necessarily an individual experience, just like biochemistry or microbes are not an individual experience. They're shared between all life."

Ganora believes there's a shared awareness humans can tap into. "I've been trying to explain this to my rational understanding for decades, and I still don't really know how to," she says, "but I've had experiences where information has come to me when I am

drawing on ancient human wisdom *about* plants to a mysterious communication *with* them. The latter calls upon acceptance of plant intelligence, an understanding common among indigenous cultures but at odds with modern Western thought.

Even in the scientific realm, however, ideas are shifting. Evolutionary ecologist Monica Gagliano's plant behavioral experiments, exhibiting plants' ability to communicate and learn, including her peer-reviewed *Thus Spoke the Plant*, have been featured in contemporary media, including *Forbes*, *The New Yorker* and *NPR*. Learning from plants is a long-documented ceremonial practice, Gagliano told *The New York Times* in 2019. "This is part of the repertoire of human experiences. We've been doing this forever and ever, and are still doing this."

It's not all mysterious, however. Some communication is biochemical. "You can actually learn a lot about a plant by fa-

you're introducing something very important about that plant's character to your limbic system," the part of the brain where humans process aromas and emotions and memory, she says, "and there's a very deep recognition that goes on there below the level of conscious understanding. I think our ancestors did a lot of that, and that was part of their establishing communication with the plants."

"The idea of tapping into the healing power of plants is really two-fold," says Kilham. "On the one hand, it does have to do with the phytochemical constituents of a plant, but at the same time, what people come to recognize, and talk about freely, is the energy of the plant or the spirit of the plant."

In his travels around the globe, Kilham has come to know more than 65 shamans in the Amazon and the Andes and elsewhere. "For them, it's all about the plant spirit," Kilham says. "Very often they will draw upon the healing power of plant spirit without even necessarily administering the plant itself." And even when administered, it will often be done in a ceremonial manner, he says. "For them, it's really plant-spirit medicine, it's not eucalyptol causing bronchial dilation, it's a deeper energetic intelligence."

Kilham calls this "an impossible notion for many to wrap their minds around," because "the purely chemical explanation is so convenient and so easy to determine in many cases." He sees this conversation changing, however, as a greatly expanding number of people come to have experiences with plant spirit.

"I think there's an energetic piece here that gets missed," agrees Four Sigmatic's Broida. "It's not just like the synergy of the polysaccharides or terpenes in our reishi mushrooms versus one of those isolated to create an anticancer drug. It's more than that. When we look at our plants or our fungal medicine, there's this mind-body-spirit connection where there's an energy to the species you're ingesting."

These are the energetics of herbal medicine, and that is where the magic lies, says Broida. Both Kilham and Broida evoked the benefits of flower essences, where no

*"A lot more people are paying attention to plants, and it makes all the sense in the world because, up until urbanized living, throughout all time and all history people and plants have been a thoroughly integrated part of the web of life."*

— Chris Kilham, Medicine Hunter

meditating, basically, with a plant. And then I've checked that information with books or other people and it's like: check, check—which is a pretty stunning experience."

Ganora is not alone in this, and there are shamanic traditions for meditatively gleaning healing information. "I don't understand how or why it works, but you can put terms on it like collective consciousness, intuition, plant-spirit medicine, whatever people have used to describe that."

Indeed, what people have used to describe that appears to range from intuitively

miliarizing yourself with its volatile molecules," Ganora says. Part of her coursework involves students crushing herbs to release the volatiles and making assumptions about their use. "If you watch other mammals, they all do their version of this," she says, describing dog's scratch and sniff instincts. This is organolepsis.

Crushing plant matter releases essential oils, Ganora says, most of which are known to cross the blood-brain barrier. "There's a very direct information transfer that happens. When you breath in those molecules,

*"To me, regenerative agriculture, herbal medicine, spirituality, phytochemistry and plant sciences are all aspects of the same unity. It's all just one big pool of amazement."*

— Lisa Ganora, Colorado School of Clinical Herbalism

phytochemistry is involved. "I've seen sometimes *more* profound results in clients when using essences versus extracts," Broida says. "It's purely energetic medicine. And it's fascinating."

### Getting turned on

"People will get turned on by something, there'll be something that will happen to them," Kilham says about the growing adoration of plants. "Maybe they go to a beautiful country place, maybe they get introduced to an herbalist, maybe they go to a seminar, maybe they're taken on an herb walk, maybe they wind up in an organic peach orchard or pick berries out in the mountains and go absolutely wild about it."

And once that switch is flipped on, he says, it "naturally leads to a lot of curiosity about plants, it leads a lot of people to garden, to become more familiar with herbs, and it also engenders in a great many people a vastly greater sense of environmental consciousness and a desire to preserve and protect nature because you come to the real understanding that, without nature, we're dead."

This drives big opportunity for the herbs and botanicals category, and that is where Kilham becomes less optimistic. Over his decades involved with the industry, he's seen many individuals who work to do right by plant, planet and people, but he's also seen some vulgar opportunism for profit. "The territory is, it's biodiversity right there, psychodiversity," he says about the variety of players. So, while consumers are getting turned on and some brands are focused on reverence for plants, he says, "I don't see it as

the dominant trend in our industry because there's just so much money to be made."

The even bigger healing opportunity, then, is for industry leaders to cultivate a deepening connection with the plant world over a commodity market of plant matter.

The components of this are falling into place. Ganora started working with herbs in 1985, and back then "we were the freaks, we were the fringe," she says. "Just to see how much that has shifted and how pleasantly mainstream herbalism has become now, it just shows us where we're moving in nature as a species to realize that we're connected, not disconnected." 🌿

### Flexible fungi

- » "I think we're in a fungal revolution right now," says herbalist and holistic nutritionist Danielle Ryan Broida. "Hallelujah!"
- » Fungi, indeed, are experiencing huge gains in the marketplace, and in the collective consciousness. The 2019 film, *Fantastic Fungi*, grossed \$1.7 million. Leading thinker and fungi proponent, Paul Stamets, sells out auditoriums around the world lecturing on the opportunities for working with fungi for health, mind expansion, bioremediation and even reversal of bee Colony Collapse Disorder.
- » By *NBJ* estimates, the mushroom subcategory of herbs and botanicals will grow nearly 40% in 2020, no doubt driven by immune health. But even in 2019, the category grew 24.8% to \$57 million (see graph, page 5).
- » Still, we have a very limited understanding of the kingdom—and it is a kingdom, separate from the plant and animal kingdoms. Broida is helping to change that, both as an herbalist and national educator at fungi-focused brand **Four Sigmatic**. "There are about 600 varieties with known functional benefits to the human body," she says. Many of these are adaptogens, and they are effective in "giving our bodies tools to more quickly and efficiently deal with stressors."
- » This is, in part, due to the fungal kingdom being more closely related to mammals than plants are. We share about 40% of our DNA with mushrooms, Broida says, and many of the defenses that fungi use in their environment provide similar responses in humans.
- » The COVID era brings their benefit to light. "What mushrooms offer in terms of immune support is this ability to immune modulate," Broida says. "In my practice, I focus on functional mushroom treatments for individuals with autoimmune conditions because there are very few plant medicines that I could use to target overactive immune systems." Functional mushroom extracts, she says, have the ability to either stimulate or downregulate immune activity.
- » Broida uses reishi as an example. "For a normally functioning immune system, vulnerable to whatever antigens are out in the world," she says, "that extract would stimulate B-cells, T-cells and natural killer cells in [the] body." But for someone with an overactive immune response, she says, "that same reishi extract would tamper down their immune activity to bring them into this baseline level."