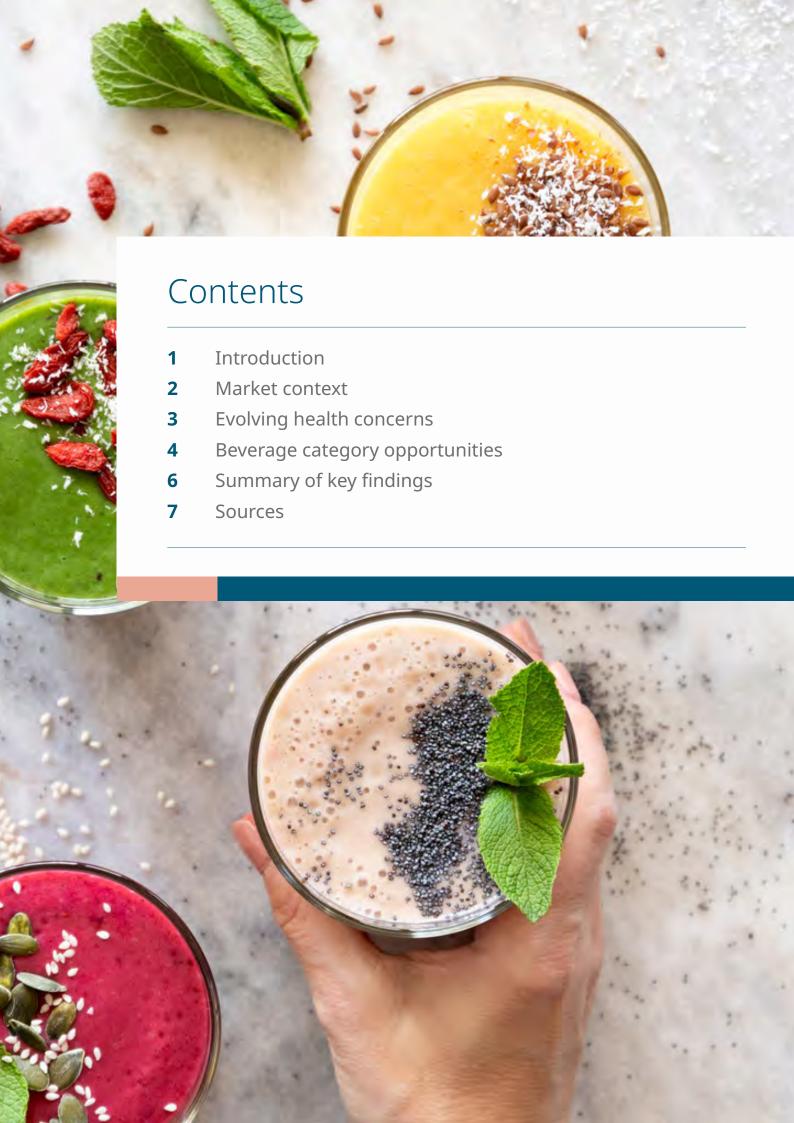


Creating functional beverages for mental wellbeing

Insights into the science behind wellness beverages





Introduction

The pandemic is a 'before and after moment' set to create winners and losers across consumer goods categories. For food and beverage manufacturers, staying on top of emerging trends has never been so important.

One of the most enduring legacies of recent events will be an acceleration of consumer-led health strategies targeting mental wellbeing.

As early as 2006, Gallup's Global Emotions Survey has reported a steady rise in the number of people feeling stressed, worried, or angry on a daily basis. The latest report describes 2020 as 'officially the most stressful year in recent history, with a record-high 40% of adults worldwide saying they experienced stress during much of the previous day.'

40%

of adults worldwide say they experienced stress during much of the previous day



There has been a growing concern across Europe & Russia about mental health since COVID-19, with over 50% of French consumers not expecting a return to normal, with that figure less, but still significant, in Spain at 39%. Meanwhile, one study from Poland reported that 65% of students experience mild to severe Generalised Anxiety Disorder (GAD) and 56% high levels of perceived stress.

There is also frequent reporting of Britons suffering sleep loss caused by worrying. One report highlighted that anxiety-induced sleep loss has risen from one in six to one in four people as a direct result of the huge disruption to people's began. Little wonder that UK-based retailer, The Drug Store, reported that 'mental health aids' were among the most searched for terms on its



World health priority

In response, the World Health Organisation has widened its remit to cover mental health issues. It seeks to create a world in which mental health is valued, promoted and protected.

"There is no health or sustainable development without mental health; mental health is too important to be left to the professionals alone, and mental health is everyone's business." World Health Organisation.

Growing awareness and action on mental health has already been picked up by a number of manufacturers, who are reconfiguring their innovation pipelines to support consumers taking a preventative approach to such matters. And it is the younger generation who are most engaged according to new research by Kerry Europe & Russia. Beyond the urgency that people attach to mental health, there is growing anxiety surrounding longer term issues such as dementia and Alzheimer's. It all adds up to a population that is more mindful of mental health and brain health than ever before.

"For younger audiences, health priorities extend towards mental health, with 54% of people under 40 years of age claiming to have stressful lifestyles. With less certainty about what the future holds, this cohort is the most likely to attach high importance to mental health issues since the start of the pandemic and express positive interest in products that can help."

IOHN KELLY

Senior Strategic Marketing Manager, Kerry Europe and Russia

66%

of European consumers claim to be putting more time and effort into learning more about health and diet



Total sample of 2,662 people across U.K, Germany, Poland and Spain

Fulfilling an urgent demand

In light of both mental health and broader health concerns, European consumers are demanding more from beverages. In Poland, 56% of consumers would like to buy beverage solutions that go beyond hydration, offering a functional benefit. This is reinforced in Spain (47%), U.K (37%) and to a lesser extent in Germany (29%).

There is a growing body of evidence that indicates now is genuinely the time for food and beverage brands to consolidate their position in this dynamic demand space, with products that appeal to both proactive and reactive consumer types and occasions.

Kerry is committed to providing manufacturers with the right ingredients, technologies and market understanding to support competitive advantage. In this white paper, we provide our very latest intelligence on European consumer health priorities with an overview of a major investment in market understanding.

In our estimation, we are only at the very beginning, and with every new generation there will be an elevation in the importance of mental health and more proactive consumers who will seek out products to support it. The opportunity to create credible and appealing products at this time is compelling.



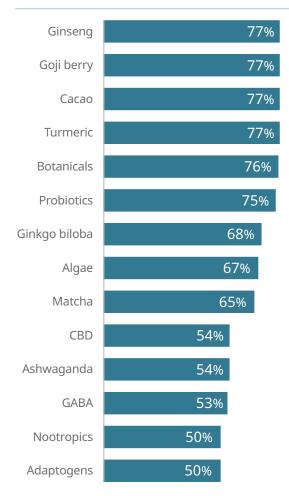
Market context

COVID-19 is having a significant growth impact on health and wellness-related categories across Europe & Russia.

The pandemic has prompted a 5% value growth for this category at a global level in 2020, according to Euromonitor. The firm also estimates that health and wellness accounted for about one fifth of total packaged food value sales globally in 2020.

The Nutrition Business Journal estimates the global functional beverages and supplements market will grow from USD 156.24 billion in 2020 to reach USD 179 billion by 2023, achieving 9.7% growth in 2020 alone. A typical example comes from a leading US beverage corporation, who recently introduced a new line specifically intended to help customers feel calm, unwind and de-stress. The product is described as containing L-theanine, an amino acid commonly included in tea leaves and said to encourage relaxation without drowsiness. It also contains magnesium and has a spa-water-inspired flavour with hints of blackberry and lavender.

CALMING/RELAXING INGREDIENT ACCEPTANCE





MENTAL HEALTH AND THE ABILITY TO FOCUS

From the start of the pandemic, there was a sharp increase in people searching 'how to get your brain to focus'. From a scientific perspective, the reasons behind this increase are clear. The brain's prefrontal cortex (located behind the forehead) processes 'higher functions', such as critical thinking, inhibiting impulses and, crucially, the ability to focus. The prefrontal cortex weakens with stress, causing a vicious cycle of losing focus, beating oneself up about it and thus making prefrontal connections even weaker.

To illustrate the power of ingredients, over 80% of German consumers expressed positivity towards ingredients such as lemongrass, green tea, elderflower, lavender and valerian as components of an ideal beverage choice. Ginseng, jasmine, peppermint and chamomile were also highly motivating.

As we move beyond the eye of the storm, it is clear that functional beverages will be one of the most dynamic categories across all geographies for the foreseeable future.

For younger audiences, functional beverages already represent a positive lifestyle choice that began with energy drinks. For this group, fortification doesn't just add credibility, it adds value.

We believe that credible product execution will be key to building trust with consumers. Ongoing adoption of innovation in emerging spaces will be dependent on more than taste alone. Technical expertise for optimal beverage formulation is essential for gaining and retaining consumer confidence.

Creating truly iconic liquids that support people's mental health is the next golden opportunity for beverage brands – especially products that help the consumer understand the benefit at the point of consumption.

Early entrants into this space are taking a number of approaches, with products designed to calm and promote sleep or improve alertness and focus. There is a proven link between stress and an inability to focus, so products that can support cognitive performance in areas such as alertness and concentration are starting to play a key role in category growth.

Sports nutrition

The ability to remain focused and maintain energy levels is of particualr importance in the sports nutrition field. Athletes at all levels have diverse functional and nutritional needs that go beyond protein. These include cognition, immune health, digestive health, energy and alertness. According to Innova's new product database, claims beyond the classic 'High/Source of Protein' are growing within Sports Nutrition. 'Energy/Alertness' claims grew at 40% CAGR on new sports nutrition launches from 2019 to 2021.

10 INGREDIENTS USED IN CALMING BEVERAGES LEMON BALM MAGNESIUM

LAVENDER VALERIAN ROOT

ROSE WATER ORANGE BLOSSOM

PASSIONFLOWER BASIL

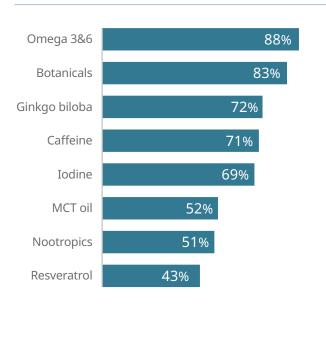
L-THEANINE VITAMIN B6



BRAIN HEALTH: SUITABLE DELIVERY FORMATS

Fruit juices / smoothies Fruit juices / smoothies Nutritional / protein drinks Hot tea / coffee Milkshake / yoghurt drinks Flavoured / enhanced water Suitable to deliver benefit 61% 24% 26% 82% 42% 23% Flavoured / enhanced water

BRAIN HEALTH: INGREDIENT ACCEPTANCE



Game on

While our focus is on the opportunity for functional beverages supporting stress and anxiety, there are related marketing opportunities for functional beverages that support focus and endurance for gamers.

There are a staggering 2.5 billion gamers worldwide, with the global gaming market set to reach \$257 billion by 2025.

Many gamers report that beverages high in sugar and caffeine cause 'the jitters' and are counterproductive to their gaming ability. Early entrants into this game space are offering products that are said to deliver enhanced and long-lasting focus, memory and processing speed while being completely free of caffeine.

Ingredient power

Growing activity in functional beverages supporting mental health has seen rising interest in nootropics – a classification of ingredients linked to the maintenance of cognitive function.

Nootropics are nutrients or foods that support one or more aspects of brain function, giving a sense of higher energy, mental focus or inner calm.

Nootropics include L-theanine (an amino acid found naturally in green tea), L-tyrosine, choline, ginkgo biloba and an old favourite - caffeine. While consumer awareness of nootropics remains low, the ingredients' ability to support innovation and claims across functional beverages is gaining ground. For innovation, selecting the right ingredients and combination of ingredients will be key to commanding consumer confidence.

40%

like to buy beverages with benefits beyond hydration

Total sample of 2,662 people across U.K, Germany, Poland and Spain.

10 INGREDIENTS USED IN MENTAL ALERTNESS BEVERAGES

PEPPERMINT ASHWAGANDHA

MENTHOL CAFFEINE

GINGER SAGE OIL

GINKGO BILOBA GINSENG

WALNUT

EUCALYPTUS



Evolving health concerns

As part of our commitment to provide the very latest market understanding, Kerry surveyed over 2,500 people across the UK, Germany, Poland and Spain with the objective of understanding their health priorities. Fieldwork was undertaken in October of 2020.

A range of functional health spaces were explored (see panel), with evidence gathered via online survey and video capture.

Results provide further evidence that the vast majority of Europeans are more concerned about their health as a result of the pandemic - driven by rises in their perceived vulnerability and uncertainty. Little variation was observed across the four markets, with consumers broadly seeking the same benefits regardless of their geography.

Faster movers

When asked about what health markers had most changed since the beginning of the pandemic, mental health's acceleration is second only to immune health, and for younger audiences, mental health is now the fastest growing issue of all.

10 FUNCTIONAL HEALTH SPACES EVALUATED

BRAIN HEALTH

MENTAL HEALTH

IMMUNE HEALTH

DIGESTIVE HEALTH

WEIGHT MANAGEMENT

HEART HEALTH

ENERGY MANAGEMENT

BONE & JOINT HEALTH

SKIN & HAIR MANAGEMENT

HEALTHY AGEING



Consumers have strong opinions on the type of ingredients that support brain function, with 88% of consumers interested in brain health products endorsing Omega 3 and 6 as key supporting ingredients.

Additionally, 83% endorse botanicals, 72% for ginkgo biloba, 71% for caffeine and 69% for iodine. While only 51% endorse nootropics as a class of ingredients supporting brain health, this figure is expected to grow as more brands introduce the term.

"Ingredients supporting brain health are important to me as I am entering the age where my brain will lose functionality." Beverage Consumer, Poland

While there are certain ingredients that consumers perceive to provide benefits for their brain health, science-backed ingredients really stand out to consumers. Kerry's 2020 proprietary research in the areas of immune and digestive health found that 41% of consumers want to be able to see the research or scientific data claims behind a product and would influence their purchase intent.





"I would expect superfoods like goji, chia, matcha in such a [brain health] drink. It would have to be recommended by scientists in this area" Beverage Consumer UK

The opportunity for innovation in these areas is underpinned by the finding that two-thirds of European consumers are now making more of an effort in living healthily, and are willing to pay a premium for products that support this.

Millennials emerge as the most responsive to new beverage trends and have the widest repertoire of products in their diet.



Beverage category opportunities

Functional beverages represent an exciting and dynamic opportunity. Products that find the right balance between taste and efficacy will be most likely to succeed.

Without doubt, this is an exciting time to be developing new functional beverages, with three-quarters of European consumers claiming that they like to try new beverages on a regular basis, and an almost equal number expressing interest in new formats.

The research found that two-thirds of Europeans indicate that purchases of functional beverages will be incremental to existing repertoires.

The rapid expansion of eCommerce and direct-to-consumer operations means producers have greater license for extended ranges, multipacks and special editions.

As we emerge from the pandemic, there is an expectation that consumers will be increasingly attracted to new products, with the prospect of new lifestyle needs. Innova's new product database reports that 19% of all beverage launches in 2020 were functional beverages and Kerry – with the benefit of this latest data – expects this momentum to increase, offering a significant opportunity for brands.

Credibility is key

While demand for new functional beverages is high, the consumer is equally keen that products measure up in two crucial areas: the science behind claims should be rock solid and there should be no compromise on taste.

This increased level of scrutiny has implications for the saliency and integrity of the ingredients selected to deliver the key brand benefit. The emerging consumer is set to pay closer attention to a new product's appearance, flavour, aroma and mouthfeel – and the balance between the 'competing' demands of taste and efficacy. Almost 90% of European consumers in this study claim to be more aware of what is in the beverages they consume nowadays.

Satisfying mental health claims

While consumers are more comfortable with general fortification claims, our study highlights that claims relating to mental health and brain

IMPACT OF COVID-19 ON HEALTH CONCERNS

Immunity 59%

Mental health
Calming/relaxation 43%

Heart health 42%

Brain health 42%

Weight management 40%

Digestive health 39%

Energy 39%

39%

Bone & joint health 39%

Fortification

Healthy ageing 37%

All natural/unprocessed 36%

Protein 29%
Improved skin/hair/

nails appearance



health currently command low levels of believability. This is not entirely unexpected for a category in its infancy, but does show that every effort must be made to demonstrate efficacy – semiotically, sensorially and sensibly, avoiding the temptation to court controversy.

Innovations that address these complexities will be better positioned to meet demand for credible, yet tasty beverage products. As it stands, European consumers display a healthy level of scepticism to claims made in terms of mental health and brain health. As further scientific research is published on the efficacy of certain ingredients, we expect the appeal of these claims to become more compelling.

"I would like to see evidence for the benefits displayed on the packaging." Beverage Consumer Spain

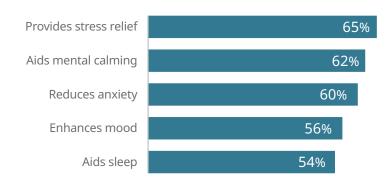
The taste-efficacy balance

Highly relevant to the development of recipes is the finding that over half of Europeans attach equal importance to the delivery of the benefit as they do with the taste. We expect this demand for reassurance to remain well into the future.

Finally, recipes must align to brand and product positions. Sensory expectations are highly influenced by pack semiotics and claims. A product that seeks to tackle stress relief will have a different set of sensory expectations compared to a product that seeks to aid mental focus. Developing liquids that deliver post-consumption mouthfeel, such as residual taste and cooling sensations, can also help underscore efficacy and help secure competitive edge in the marketplace.

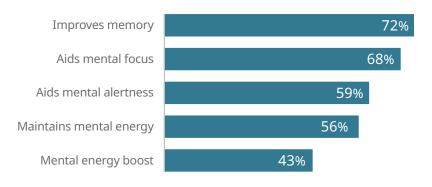
MOST APPEALING MENTAL HEALTH CLAIMS TERRITORIES

Participants asked to rank top 3 claims from a selection n=656



MOST APPEALING BRAIN HEALTH CLAIMS TERRITORIES

Participants asked to rank top 3 claims from a selection n=710





Summary of findings

Scientific rigour is the key to the challenges of taste and efficacy involved in a post COVID-19 world where consumers seek mental and overall health qualities from their beverages.

Even before the pandemic, there was growing acceptance of the importance of mental health. One of the lasting legacies of the COVID-19 pandemic will be an acceleration of this trend and rising demand for products that counter stress and anxiety and promote focus and mental dexterity.

"Two-thirds of European consumers are making more of an effort in living healthily and are willing to pay a premium for products designed to support this."

While vaccination programmes are able to bolster people's immune response to the virus, there is no equivalent when it comes to dealing with everyday stresses and anxieties, which have increased since the pandemic and – critically – are part of a long-term trend.

The results of our survey, and the revelation that three of the top five benefit areas rated more important since COVID-19 relate to cognitive concerns – mental health, calming and relaxation and brain health – demonstrates the magnitude of the problem and scale of the opportunity.

European and Russian consumers are displaying a strong appetite for a new generation of beverages, and they are prepared to pay a premium for the purported benefits - but there is a caveat. The consumer must be satisfied that the product stands up to scientific scrutiny in the claims being made for it, before going to market.

As we enter the next era of functional beverages, it is important for manufacturers to develop highly credible product solutions for consumers – earning

their trust and continued loyalty. Striking the right balance between taste and efficacy; selecting the right ingredients and combination of ingredients and offering solutions that meet demand for all occasions will be pivotal to maximising new growth.

Kerry Taste & Nutrition solutions to develop functional beverages

As a world leader in Taste and Nutrition, Kerry is ideally positioned to support the beverages industry in it's journey towards sustainable nutrition, powering healthier and tastier functional beverages. Our cross-functional beverage team can help you to innovate, pulling from our extensive range of flavours and our history of creating consumer preferred beverages. Go beyond flavour and deliver clean labels with our range of Simply Nature[™] botanical extracts. Reduce sugar with our Tastesense™ sweet solutions, which are designed to retain taste and mouthfeel. Optimise nutrition with our dairy protein solutions and also plant-based protein with Prodiem™ Refresh. Deliver proactive health benefits; immune support with Wellmune™, digestive health with BC30[™] along with Emulgold[™] for fibre enrichment. Working together with our customers we can create opportunities in functional beverages that outpace the market, shaping initiative into excellence.



Sources

Primary source of information:

Kerry proprietary research carried out by MMR Research Worldwide in 2020

Additional sources of information:

Gallup Global Emotions Survey 2019

BBC June 2020

Psychology Research Journal Aug 2020

www.ipsos.com

www.coronavirus.jhu.edu

www.innovamarketinsights.com

www.euromonitor.com/ireland



