



Nutrient  
Density  
Alliance



## Introducing the Nutrient Density Alliance White Paper

Discover the business case for engaging consumers on  
Regenerative Agriculture and how brands can  
integrate nutrient density for top-line growth.

from the Nutrient Density Alliance

# Agenda



 <p data-bbox="336 521 529 649">Nutrient Density Alliance</p>					
<p data-bbox="191 792 471 1006">What is the Nutrient Density Alliance?</p>	<p data-bbox="552 792 802 1021">The White Paper &amp; What it Tackles</p>	<p data-bbox="917 792 1210 892">Where's the Science?</p>	<p data-bbox="1286 792 1503 1021">Macro Trends: Food Is Medicine</p>	<p data-bbox="1643 792 1898 1006">Existing &amp; Future Consumer Demand</p>	<p data-bbox="2012 792 2318 1056">RA Brands Engaging on Nutrition to Unlock Demand</p>



Nutrient  
Density  
Alliance



**Consumers are purchasing for  
*taste, health, quality, and nutrition.***

Meanwhile, the Regenerative Agriculture movement at large has forgotten to engage consumers about how **Regen Ag drives *taste, health, quality and nutrition.***

**We looked at this gap and said, “let’s fix that...”**

---



The link between soil and nutrition is clear.

from the Nutrient Density Alliance

## Contributing Members



WISEcode

SNACKTIVIST



MegaFood.

DAILY HARVEST


ANCHOR  
INGREDIENTS

KK Kellogg Co



MAD!  
MADAGRICULTURE.ORG





*The Regenerative Agriculture movement has now fully arrived across multiple paradigms of agriculture. It needs to be entrenched as deeply as possible within the food system in order to drive the broadest possible transformation of existing systems. Consumer demand is critical to that effort.*



Nutrient  
Density  
Alliance



Learn more about scientifically-backed nutrition outcomes made possible through Regenerative Agriculture.

from the Nutrient Density Alliance



www.nutrientdensityalliance.org  
info@nutrientdensityalliance.org

# ENGAGING CONSUMERS ON REGENERATIVE AGRICULTURE

How Brands Can Integrate Nutrient Density for Top-line Growth

Published March 2024



## We Tackle Three Big Things



How to use existing food system processes to bring regenerative nutrition to consumers



Regen brands are not aware of deep consumer interest in this topic



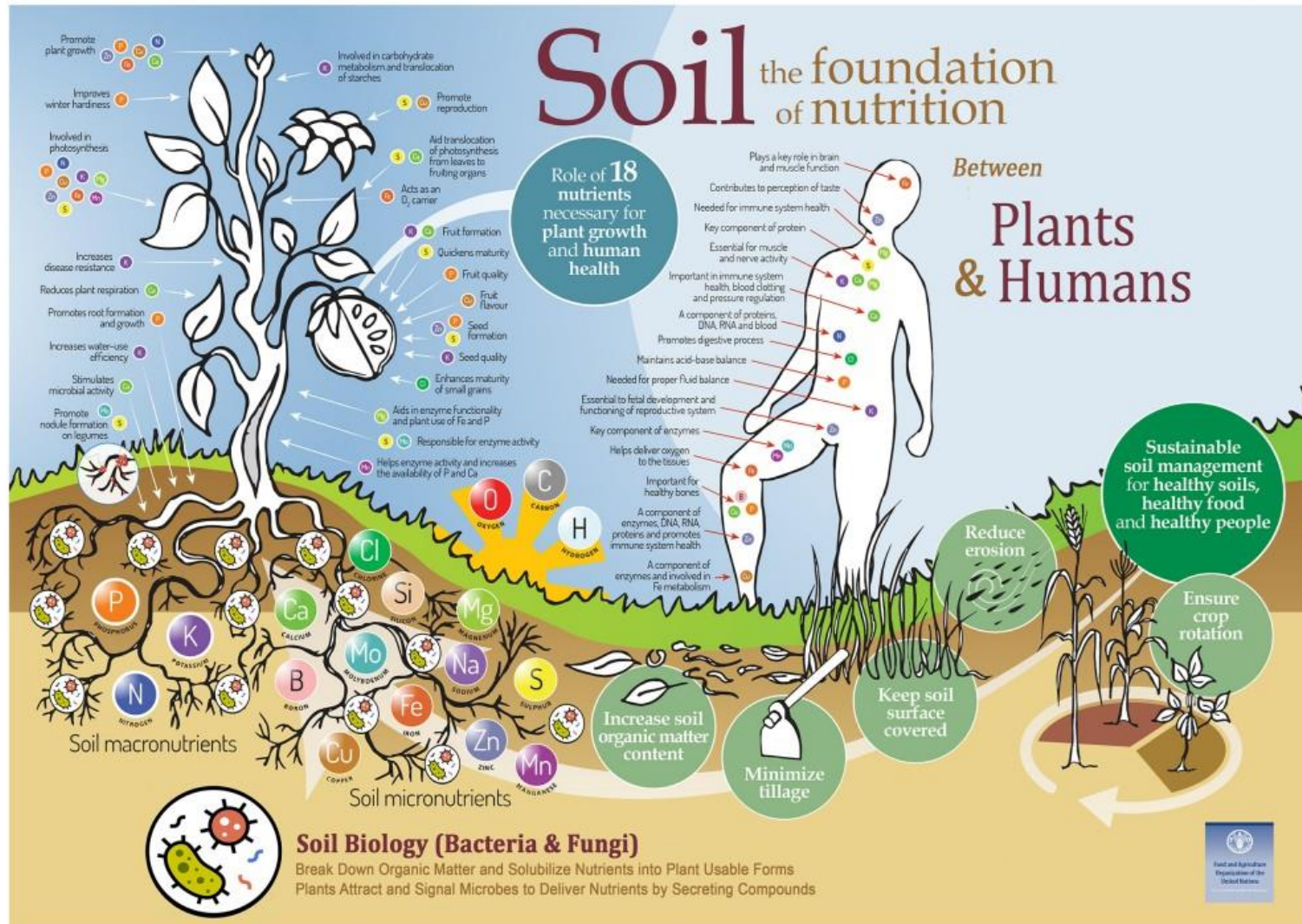
The N/O/RA communities are largely unaware of the link between soil health and nutrition



The opportunity for farmers and food company leaders to highlight the relationship between soil health and nutrient density can inspire a profound shift towards a food system that nourishes both people and the planet.

This comprehensive paper provides practical strategies for quantifying and messaging the measurable nutritional benefits stemming from Regenerative Agriculture practices.

# We Know Enough to Act...



# UN FAO Calling Attention Since 2015: Depleted Soils = Depleted Nutrition

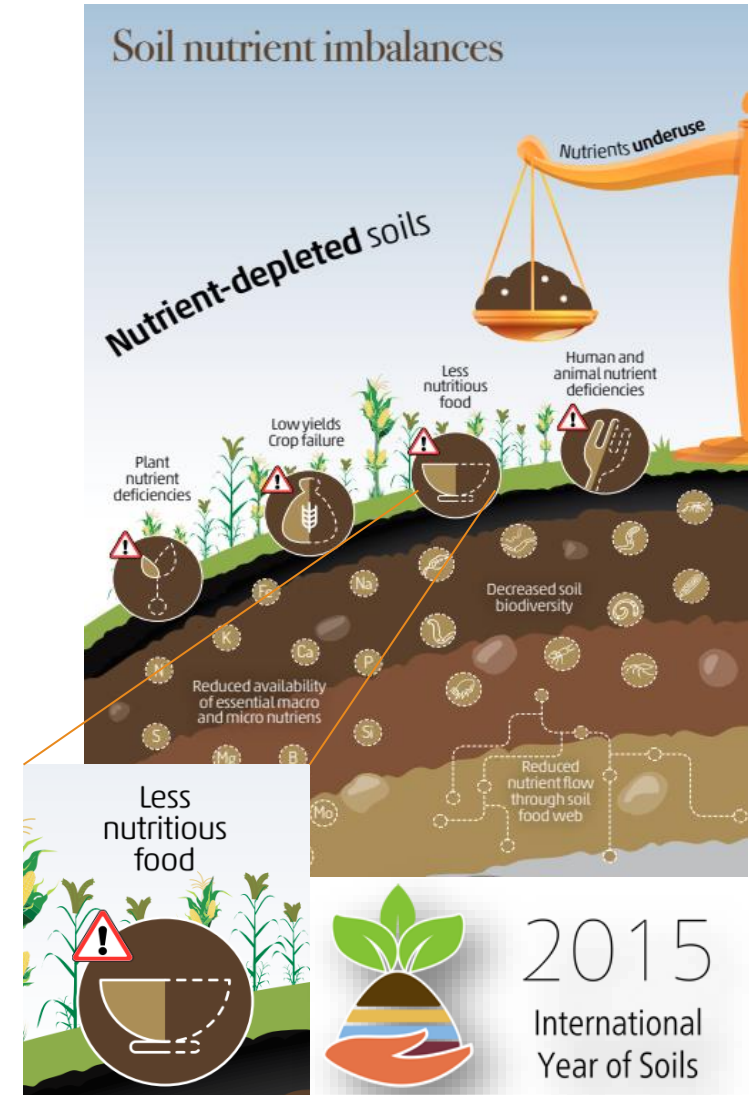


“Nutrient-deficient soils will produce nutrient-deficient plants, ultimately causing people suffering with nutrient deficiencies.”

“The chronic lack of micronutrients derived from nutrient deficient soils and crops cause severe and invisible health problems known as hidden hunger, which affects more than 2 billion people in the world”

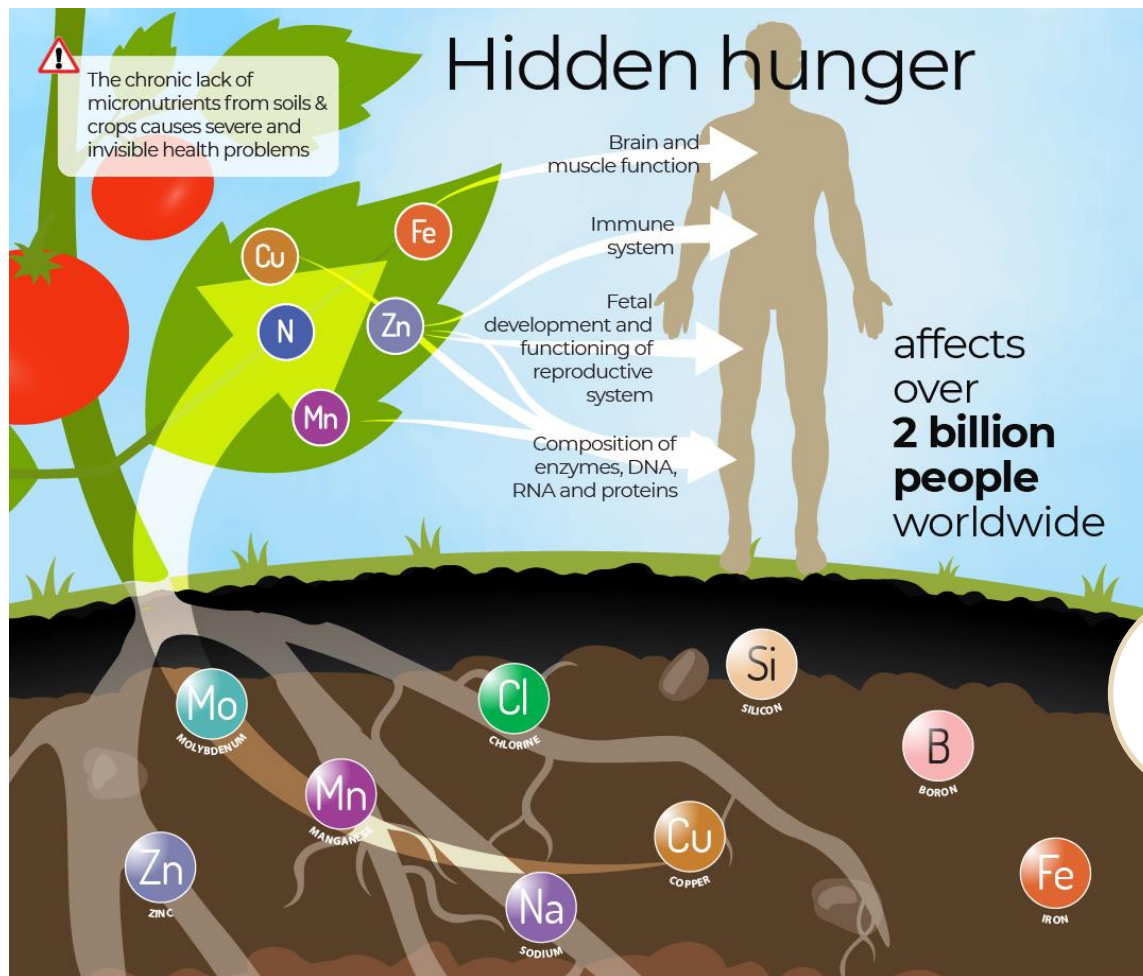


Food and Agriculture  
Organization of the  
United Nations





# What is Hidden Hunger?



What is hidden hunger?



*“When the quality of food that people eat does not meet their nutrient requirements. The food is deficient in micronutrients such as vitamins and minerals.”*

# Want to Dig In? Here's More...



Food and Agriculture Organization of the United Nations

SOILS: WHERE FOOD BEGINS  
Global Symposium on Soils for Nutrition

2022

10+ Pages of References from peer reviewed science

Soils for nutrition: state of the art

CELEBRATING 40 YEARS

Nutritional Benefits of Humane Farming

Handouts

OVERVIEW HANDOUT (ALL ANIMALS)

- Overview pdf (full document - front and back)
- Overview pdf (on Equifolia)
- Front side and back side of the handout (jpeg image files)

BEEF CATTLE HANDOUT

- Beef pdf (full document - front and back)
- Beef pdf (on Espanol)
- Front side and back side of the handout (jpeg image files)

BISON HANDOUT (NEW!)

2021

24+ Page Bibliography of peer reviewed science spanning 2002-2021

Coalition of Health Professionals for Regenerative Agriculture

Nutrient density    Soil health - Human Health

Regenerative Agriculture    Food Systems    One Health

<https://www.regenerativehealthcoalition.com/database/categories/nutrient-density>

Updated Constantly

# Food Is Medicine Movement Just Getting Started



---

“Poor nutrition is the leading driver of death and disability in the United States, including from heart disease, stroke, type 2 diabetes, obesity, hypertension, and some cancers, and has staggering costs to society.”

---

“The economic costs of suboptimal diets due to health care spending and lost productivity are estimated at \$1.1 trillion each year — equaling the economic output of the entire food sector.”

---

According to SPINS, 66% of Americans now choosing products based on personal health needs.



# Nutrient Density is \*the\* Regen Ag Shortcut to Consumer Demand

*Consumers are Highly Interested in Nutrition & Understand the link between soil, climate and their own health.*

2020: the Organic Consumer (82% of households) said Soil Health was a unifying factor in their purchase intention across the drivers of better flavor, better nutrition and better ecology.

2022: 64% of consumers wish companies would respond faster to their changing needs. 88% of executives think their customers are changing faster than their business can keep up.

2023: Younger generations focus more on sustainability solutions than their older shoppers, suggesting that these topics are going to remain top priorities for decades to come.

2023: Consumers are also increasingly associating healthy eating with sustainability. Half of respondents indicated that nutritious food is also more sustainable for the planet, and 65% believe that environmental factors cause negative health impacts.

2023: Gen Z has embraced the idea that more intentional production methods lead to foods and beverages that are not only healthier and tastier, but better for the community and the planet.

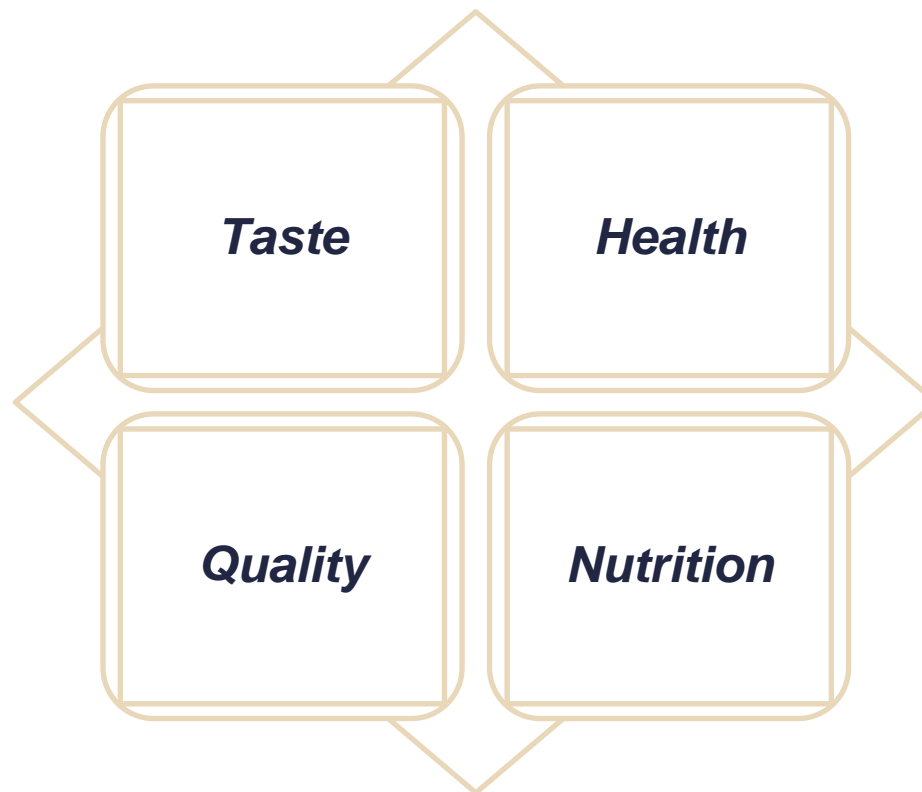
2023: Personalized sustainability: 36% believe that animals raised humanely are healthier to eat and 24% believe they taste better. *Companies should focus on highlighting the personal benefits that consumers gain from sustainability initiatives: like health, nutrition, taste, or quality of life.*

2024: 86% of Younger Natural Shoppers, 78% of Older Natural Shoppers, and 45% of Conventional Shoppers believe that organic and regenerative farming can help improve the nutrient density of our foods.





The White Paper Outlines how Regen Ag offers clear **consumer-centric** narratives for brands based on:





## SUMMARY

# Who Is the Natural Shopper in 2024?

Signs point to a more holistic paradigm of sustainability, integrity and health in our food system

A RESEARCH REPORT FROM THE NON-GMO PROJECT

Jade Vantreese,  
Communications Manager at  
the Non-GMO Project

published January 2024



# What is “natural”?

People are innately aware that food comes from nature, and the more “direct” the pathway of production and distribution, the better it is for the body.

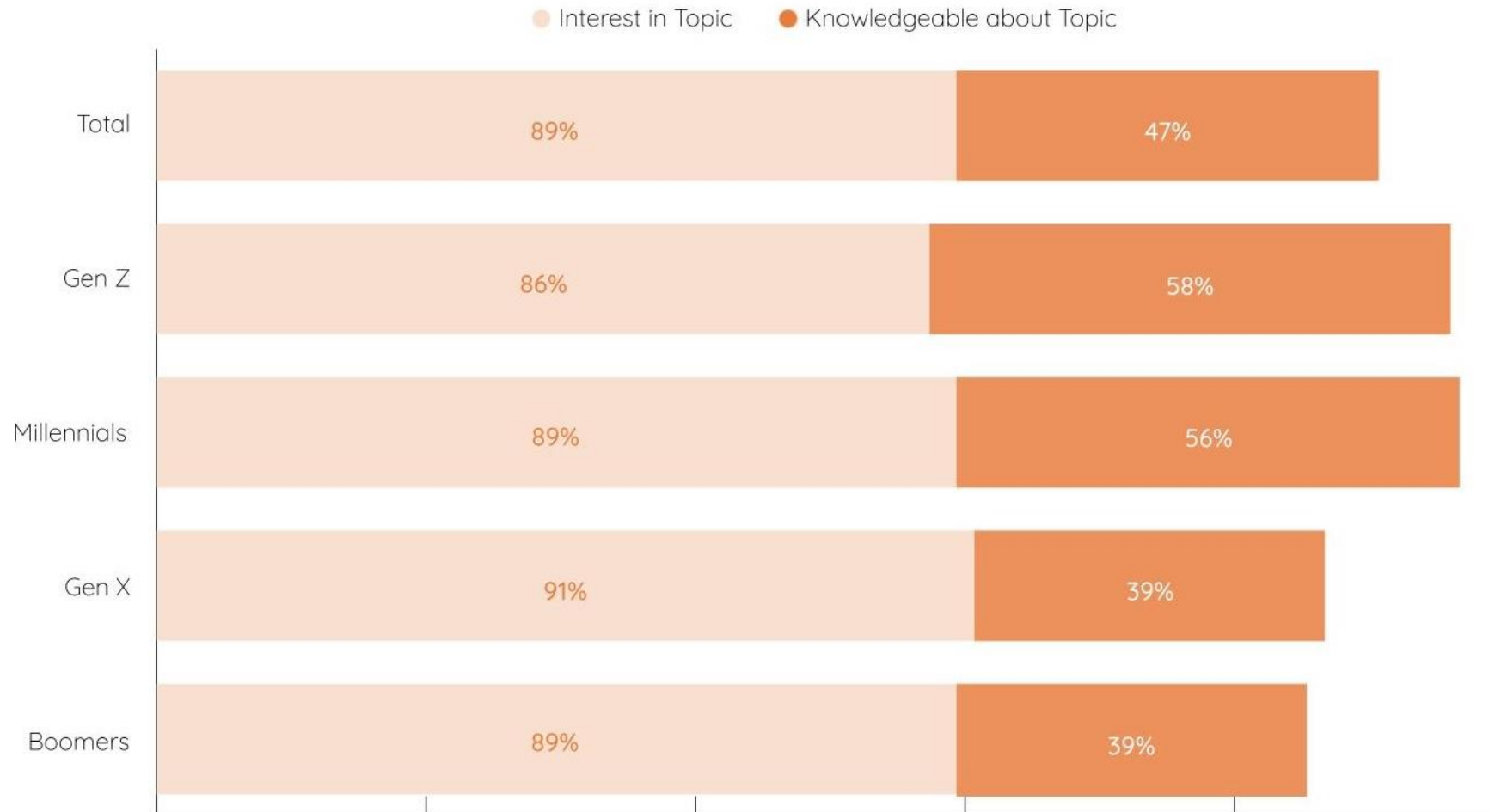
“I believe the health of the soil impacts the nutrition in my food and my health”



“The quality of the food we eat is a critical factor in our health and wellness”

## “Nutrition” Interest vs. Knowledge

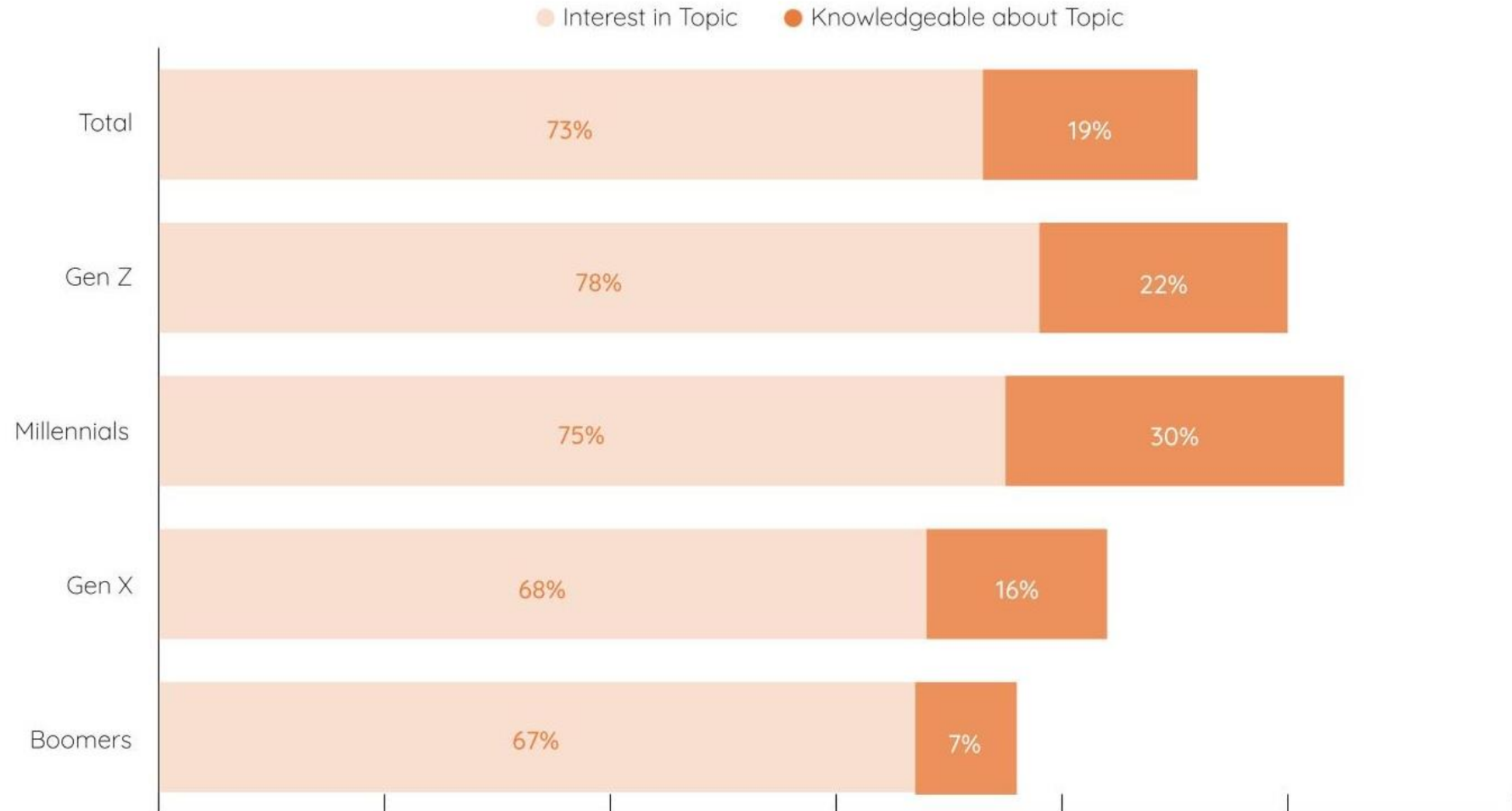
Table 14. How would you rate your knowledge of the topics below? SCALE IS: extremely knowledgeable, very knowledgeable, somewhat knowledgeable, not knowledgeable at all. How would you rate your interest/curiosity in the topics below? SCALE IS: very interested / curious, somewhat interested / curious, not interested / curious.





## “Nutrient Density” Interest vs. Knowledge

Table 15. How would you rate your knowledge of the topics below? SCALE IS: extremely knowledgeable, very knowledgeable, somewhat knowledgeable, not knowledgeable at all. How would you rate your interest/curiosity in the topics below? SCALE IS: very interested / curious, somewhat interested / curious, not interested / curious.





# Nutrition vs. nutrient density opportunities

1. Learn more about nutrient density
2. Offer accessible education to shoppers
3. Formulate more nutrient dense foods
4. Promote nutrient density as a meaningful new attribute

The natural products industry is uniquely positioned to provide the natural shopper with innovative product formulations and regenerative ingredient sourcing.





Read the report



[jade@nongmoproject.org](mailto:jade@nongmoproject.org)

# White Paper: Supply Web Macro Assertions



We define Regenerative Agriculture broadly, but strongly urge companies to have third-party validation, like an on-pack certification.

Field-level measurements are a critical step.



Determine if segregated volume is possible, and whether it drives a different nutritional outcome that would meaningfully engage consumers.

Use the existing ingredient specification and certificate of analysis process, with a representative sampling plan to enable NLEA side-panel outcomes.

This is in place of secondary USDA data.

# White Paper: Cross-Functional Guidance for Success



Pivotal department leaders need tools to provide the internal business case

Marketing, Quality, Nutrition, Regulatory, Legal are key enablers

Marketers may be shying away from talking about complicated soil science

Quality & Regulatory wants specific processes and validation to enable consumer messaging

## Implementing Nutrient Density Outcomes Project Checklist

		Procurement	Ingredient Supplier	Quality	Operations	R&D	Food Tech.	Marketing/Sales
1. Confirm Availability of Minimum Required Volumes	Determine if there is enough volume of the identified ingredient in the regenerative agriculture program to meet demand for one SKU launch, product renovation, or other opportunity for a recipe update.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
2. Test Nutritional Impact	Design a representative sampling plan to lab test the relevant ingredient using your standard lab and testing protocols (additional resources on next page) to determine if the regeneratively-grown ingredient has the desired nutritional result.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
3. Confirm Significance of Nutritional Impact	If the lab tests prove positive outcomes that are statistically relevant, confirm the difference in nutrition to create positive outcomes of comparison. We strongly suggest comparing any outcomes versus USDA Nutrient Profile System FoodData Central.		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	

# White Paper: Breaking Down Barriers & Referencing Key Resources

## Barrier #1

Confusion about how higher nutritional outcomes are quantified

*There is a belief that the nutritional benefits attributable to soil health are difficult to measure, or that 'human health trials' are required before utilizing standard measures that are already widely used and mandated as a result of the [Nutrition Labeling and Education Act \(NLEA\)](#).*

### Solution

The same systems that already exist for standard measurement can and should be used: specifications, Certificate of Analysis, and ongoing laboratory verification that target windows of measurement are achieved with each lot and shipment.

## Barrier #2

Believing there is a lack of scientific evidence

*Some consider RA to be a values-based movement, when in fact it is an evidence-based movement with clear and measurable outcomes in soil, planetary, and human health impacts using the latest established scientific methods. Relegating RA to a values-based movement drives the desire to talk to consumers from a space of food beliefs rather than personal and planetary health backed by science.*

### Solution

There is still a need to translate the science for consumers, but there is enough evidence that individual companies can and should explore the outcomes from their own RA supply as it relates to nutrient density, and the meaningful presence of additional compounds already associated with health outcomes. See pages [11](#) and [12](#) for scientific evidence.

## Barrier #3

Believing that additional studies are needed before taking action

*While more research is always warranted, many are not aware of the breadth of research which already exists and that can support efforts to create internal testing plans on regenerative ingredients. There has been a clear impetus to act since the [2015 International Year of Soils](#) introduced significant peer reviewed research demonstrating the known links between soil, nutritional outcomes, and human health.*

### Solution

What is needed now is industry uptake and translation of measurable outcomes to activate consumers and catalyze top-line growth. In turn, this can lead to standards of industry adoption that are universally recognized outcomes of RA, and which still need to be built from a multi-stakeholder approach.

## Barrier #4

The worry about marketing complicated soil science to engage consumers

*The emphasis on soil and associated climate sciences has already caused many marketers to shy away from engaging consumers on these topics as their expertise lies elsewhere, and quality/regulatory/legal professionals will be less likely to support such efforts for fear of on-pack messaging that gets scrutinized in the marketplace by regulators.*

### Solution

Using the existing segregation and ingredient specification model can demonstrate to internal stakeholders where the measurements are proving a specific outcome within a third-party verified RA program in a way that translates to consumer value. For examples of what makes up a food specification, see [page 27](#).

## FDA Guidance for:

- [Front of Pack Claims](#)
- [Health Claims](#)
- [Nutrient Content Claims](#)
- [Nutrient Content Claims for "good source," "high," "more," and "high potency"](#)
- [Guide for Developing and Using Data Bases for Nutrition Labeling](#)
- [NLEA Requirements](#)

## Representative Sampling Protocol Guidance

- [USDA Grain Inspection Handbook, Sampling Protocols](#)
- [FDA Food Sampling/Preparation of Sample Homogenate](#)
- [FDA Investigations Operations Manual 2023: Sampling](#)

## USDA Nutrient Database Materials

- [FoodData Central](#)
- [Related Resources](#)
- [Dietary Supplement Ingredient Database](#)
- [USDA Table of Nutrient Retention Factors](#)

## General Materials

- Which foods fall under USDA vs. FDA oversight for labeling? Read more from [Eurofins](#).
- [FTC Green Guides on Truth In Advertising](#) relates to federal oversight of any environmentally friendly claims.
- [USDA Website on Food Specifications](#)

## Strategies to Achieve Over Multiple Crop Years

### Short Term

Volume that can be segregated creates momentum for:

- Niche Brands
- Smaller/Individual SKUs
- Line Extensions
- Innovation Launches
- In & outs / Retailer-specific launches
- Setting a mass balance strategy

### Medium Term

- Segregated volume and claims are extended to a product line or brand leadership strategy
- Consumers begin to rely on brand claims as a point of differentiation
- Mass balance efforts reach tipping points that enable production lanes to convert on specific channels of volume
- Farmers can rely on annual contracts for ongoing sourcing

### Long Term

- A portfolio-wide integration is possible when mass balance targets are achieved
- Farmers see follow through from sourcing to on-pack and retail integration
- Consumers have integrated brand loyalty into their purchase decisions

# White Paper: FAQs and Lists

Animal+ Focused	Ag System Agnostic	Foundationally Organic
		
		
		

## 17. Laboratory Guidance and Accreditation

The Nutrient Density Alliance has compiled a small, but growing, list of laboratory principles. Ideally, an ISO/IEC 17025 accredited laboratory should be the facility baseline used to provide any nutrition testing specific to RA outcomes. It is likely that the existing laboratory a company uses has a 3<sup>rd</sup> party ISO accreditation but double-checking this step can ensure more standardized results which can hold up in further and future comparisons made across the industry.

**Why ISO/IEC 17025 Accreditation? See more at [ISO Standards](#).**

- Requires the traceability of all supplies or inventory items from purchase to usage.
- Labs must demonstrate that appropriate tests were performed, testing was conducted on properly maintained and calibrated equipment by qualified personnel, and with appropriate quality control checks.
- Requires all food testing laboratories to have a documented sampling plan for the preparation of test portions prior to analysis.

**Allows for better 'apples to apples' comparisons when looking at the nutritional outcome data from a comprehensive systems view.**

- Facilitates cooperation between laboratories and other stakeholders by generating wider acceptance of results between countries. Test reports and certificates can be accepted from one country to another without the need for further testing, which, in turn, improves international trade.

## 18. FAQs

### How can a company determine whether an ingredient has a positive nutrition outcome from its Regenerative Agriculture program?

It is recommended to pull random samples from a segregated regenerative supply and conduct supplemental nutritional testing that matches the specification and certificate of analysis requirements for that ingredient in conventional systems. If it is determined that there is a measurable difference from the standard specification, then the next step is to decide whether representative testing throughout the segregated supply would drive a meaningful and relevant impact for Nutrition Facts Panel calculations. Check the Representative Sampling Protocol Guidance on [page 24](#), and use the checklist on [page 26](#) to help determine further steps.

### Why is segregation of Regenerative Ingredients recommended to enable messaging around better nutrition outcomes on a product?

Messaging on pack comes with regulatory guardrails, especially when statements are made about the nutritional content of a food. As this area includes oversight from the FDA, USDA, and FTC it is important to ensure that any messaging is based on specific outcomes for which the company has measured. Not generalities. Sharing peer reviewed research on a company website, or that a company is pursuing further research on nutrient density is different from making statements about the actual nutritional content of its products. Segregation of materials is what opens the door to companies messaging on specific outcomes, or integrating (through standard processes) outcomes on the Nutrition Facts Panel.

### What tests should be conducted?

In short: what can be measured for a Nutrition Facts Panel, the same as today, on segregated regenerative ingredients. **The recommendation is to focus on what is most meaningful for the company consumer target and their purchase intentions with the brand and where the consumer has already been taught to view a benefit (or place a purchase value) on that nutritional outcome.** Enlist help from an ISO/IEC 17025 accredited laboratory as a testing partner to help determine how these outcomes can impact a Nutrition Facts Panel or messaging potential. A list of ISO accredited laboratories has been included within this report for convenience.

### What type of laboratory should be used?

The recommendation is to use an ISO/IEC 17025 Accredited laboratory so that the processes are uniformly applied, and the lab understands USDA and FDA requirements for on-pack labelling, specification confirmation, and regulatory requirements for messaging and claims. See more details on [page 31](#).

### What about crop variability?

Wherever possible a multi-year review of nutritional variability within regenerative supply should be undertaken, **as ingredient variability already exists within the current food system** and is constantly being managed with existing ingredients, so standard processes should be applied. Discussing volume guarantees or required nutritional ranges with the supplier of third-party validated regenerative ingredients is key. If critical specification targets cannot be met year-to-year the brand will risk having costly reprints of their packaging or risk being out of compliance with regulations.

### What is third party validated Regenerative Agriculture?

Ideally, an outside party should be providing the field level measurements for soil health outcomes as the most basic role of any RA program, as well as segregation of the ingredient volume from those fields to enable product messaging and calculations. This service can be provided by agronomy consultants, by measurement, reporting and verification (MRV) consultants, or by certifying agencies. See [page 29](#) for a list of RA certifiers to help with company decision making.

### A company's initial tests have positive nutrition outcomes. What should these outcomes be compared against, nutritionally speaking?

Two suggested modes of action: (1) compare regenerative outcomes to existing or past non-regenerative nutrition for the same product, and (2) compare nutritional outcomes to the USDA standard nutrition database outcomes. Work with a laboratory or regulatory consultant to determine any appropriate messaging related to meaningful nutrition comparisons.

# Q&A





# What We're Tackling Next



## Next Member Meetings:

Hearing from Labs and Brands that have completed nutrient density testing on their regeneratively grown ingredients.

## Regulatory Guidance:

Tackling the animal protein space with USDA regulatory guidance alongside a consortium of interested members and entities

(dairy, egg, poultry, beef brands and industry groups).

## Funding Needed:

Seeking philanthropic funding for regenerative nutrient density testing and to work toward standardized industry metrics.

## Education:

Engaging all stakeholders across the food and agriculture industries about the importance of nutrient density tied to Regen Ag and consumer demand.

