



BIONUTRIENT FOOD ASSOCIATION

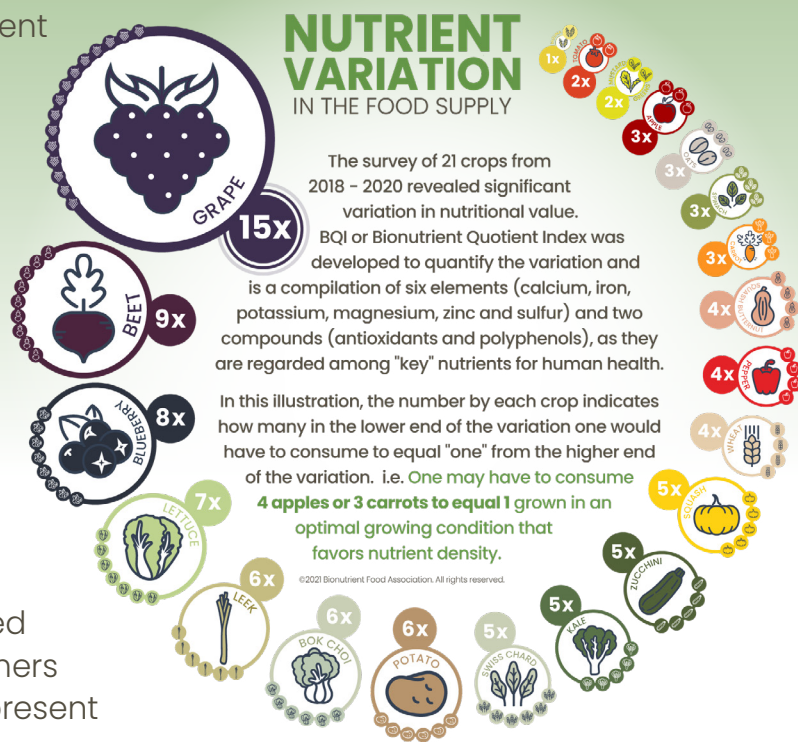
At this moment of apparently imminent existential crisis on numerous fronts,

The Bionutrient Food Association is Positioned to Align Personal, Environmental, & Economic Interest Around the Nutritional Quality or Nutrient Density of Food as a Path Forward.

Through the Bionutrient Institute, with labs on two continents, the BFA has directed years of research, confirming dramatic nutritional variation in the food supply, and its connection to environment and management practices.

Early findings suggest that the healthiest food is produced in biological systems that are naturally regenerative for Earth's ecological systems and climate. Industrial, monoculture, and factory farming methods were linked to lower nutrient levels, soil carbon, and biological activity in the soil.

Our objective is to develop the transparent measurements and means by which food, health and agriculture are inextricably linked to facilitate the communion between farmers and consumers, people and land, and present generations to future ones.



“Through engaging communities and coalitions around transparent, empirical assessment of the nutritional value in food, we can shift incentives in agriculture from supporting yield, uniformity and price, to one that is merited upon nutritional value, land rejuvenation, and its benefit to Earth, humans and Life.”

Dan Kittredge – Executive Director/Founder



BEEF

The Bionutrient Institute is now launching a project to formally define Nutrient Density in food and crops, to correlate agricultural practices to nutritional requirements in humans. The first crop to study is beef.

The Bionutrient Institute designed this particular study in collaboration with Dr. Stephan van Vliet of Duke University, to identify the range of nutrients and compounds that vary in beef based upon how it is produced.

The Institute lab teams have established a data collection framework that will not only assess the meat for nearly 200 elements and compounds, but will also assess the microbiome of the cows that produced it, as well as the forage or fodder they consumed, the soil it was grown in, and management practices that were applied.

This project will collect 3 beef samples from each of 200 global growers across the management spectrum, as well as 150 supermarket samples to establish sufficient data to build a first definition of Nutrient Density in beef.

We will also be able to provide every grower that participates with the data from their operation, to allow them to understand where their beef sits in the overall spectrum of variation, supporting those who are doing well with the information to make nutritional claims to their customers.

This data framework promises complete anonymity to participants unless they wish to share, and can be used by other growers globally to assess their own management practices and work to improve them based upon the guidance arising from the collective.

We have chosen beef first because it is the crop with the largest global market, largest global land footprint, and therefore the crop with an ability to affect the largest global shift towards climate health.

While dozens of growers have expressed interest in participating in the project, due to the foundational cost of the work (\$2500/farm), many are excluded from participation. The timeline to accomplish this work is limited now only by the resources to accomplish it. A total of \$1M is needed to support interested grower partners and bring this to fruition.

We are additionally prepared to initiate human trials with beef from the ends of our Nutrient Density spectrum to bring the final piece to bear - the connection to human health.

Preliminary data will be available by mid 2022, with a first generation definition of Nutrient Density in beef expected by the end of 2022.



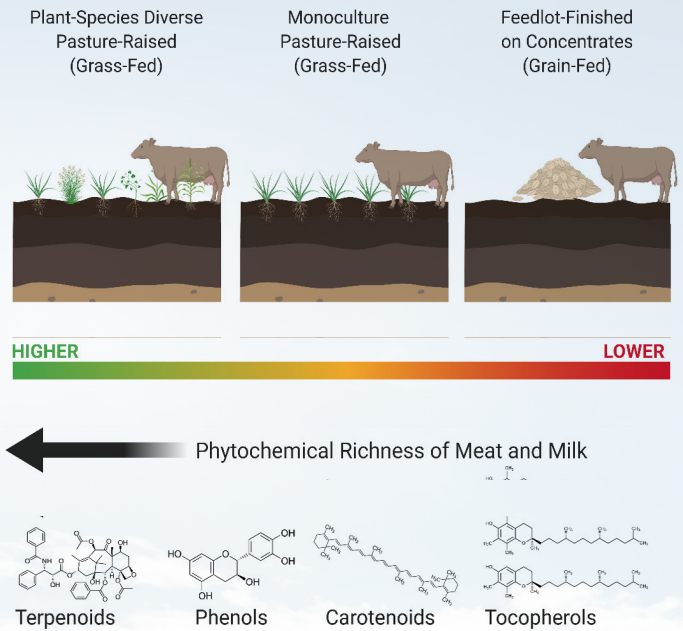
THE
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A project of the Bionutrient Food Association

To learn more, visit:
BionutrientInstitute.org/beef

This is a project that is designed to bring confirmation to data that has been generally understood for some time:

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1. That what an animal is fed, and the quality of its life before slaughter has a direct effect on levels and ratios of nutritional and anti-nutritional compounds in its meat that is consumed.
2. That these levels and ratios vary across the production spectrum. While cows finished on corn in feedlots have the lowest levels of human health-giving secondary metabolites, and cows finished on monoculture forage have moderate levels, those finished on poly-culture pastures have the highest levels. Similarly, with omega-6 and omega-3 ratios, and other fatty acid profiles, there is a continuum from poly-culture pasture to straight feed lot that ranges from health-giving to detrimental.
3. These production practices connect directly with soil health and environmental system function. Well managed poly-culture grazing ecosystems have profoundly positive soil and climate impacts, while mono-culture grain production and feedlot finishing system have opposite results.



4. Through a large enough data set systematically connecting soil, forage, micro-biome, and nutritional metrics, a categorical connection can be made between these pieces. More importantly, transparency in the market can be accomplished to allow for differentiation based upon results, not labels and marketing.

There are many dozens of organizations, research institutions, companies and thousands of producers who understand the essence of these points and are looking to be able to differentiate themselves in the broader market, based upon these human and environmental health claims. By coordinating a process to integrate these data sets, the BFA hopes to provide the support for these allies to more actively coordinate education, claims and marketing.

This data will all be of a caliber to be publishable in peer-reviewed journals.



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