Legume nutrition and quality in the context of climate change

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Embracing environmentally sustainable diets necessitates a shift towards plant-based food sources, especially in regions like the global north. However, various social, economic, and cultural obstacles impede progress towards more sustainable dietary habits. Despite being nutrient-rich, legume grains face certain nutrition-related challenges. This presentation explores three such challenges and stimulates contemplation:

1. While legumes are hailed as highly sustainable sources of plant-based protein, the prevailing protein-centric mindset in the global north markets (and beyond) warrants critical examination. Legumes offer more than just protein; their broader nutritional value merits attention.

2. Quality means fitness for the purpose. Despite being rich in phytochemicals, sometimes viewed negatively as anti-nutrients, legumes may confer health benefits by influencing the gut microbiome and possessing anti-inflammatory and antioxidant properties. Should we consider rebranding them to convey a more positive message?

3. The earth’s climate change poses a fundamental threat to humanity, and the rise of atmospheric CO2 is a main driver for most of these changes. Legumes have been with us for millennia. But has the nutritional value of legumes changed due to climate change, and will legumes be as nutritious in the future as they once were?

***References:***

[1] Duarte, RDC et al (2024) Frontiers in Plant Science 15, 1337653

[2] Deuchande et al (2024) Plant Soil 496:139–160