From Soil to Snake Oil: Possibilities and Limitations in Food Functionality. (S04-goldman143710-Oral)

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Abstract:

Plants are the foundation for a significant part of human medicine. Monomolecular drugs have been widely adopted, obscuring the collective wisdom of many traditional remedies. Plants contain secondary compounds that have the potential to influence human health. Functional foods deliver physiological benefits beyond nutrition, however the functional constituents of many foods may be unknown. Uptake and assimilation of nutrients by plants may dictate the kinds and amounts of functional secondary compounds in crops. For example, S uptake may dictate the health functionality of Brassicaceae and Alliaceae crops. Competitive S and Se uptake may further enhance or diminish the health functionality of these crops. Fertilization of Brassica with Na2SeO4 can increase Se accumulation but reduce glucosinolate concentration, thereby diminishing the benefits of these S-based compounds. Luxuriant fertility levels do not result in vitamin or secondary compound increases in crop plants, although mineral increases have been noted. The potential for improving and/or limiting food functionality through fertility practices will be considered from the perspective of nutrient uptake and assimilation.

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