

AN ONION A DAY KEEPS THE DOCTOR AWAY? REFLECTIONS ON THE POTENTIAL HEALTH-FUNCTIONALITY OF VEGETABLE CROPS

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Abstract

Plants are the foundation for many human medicines and were domesticated in part to serve both food and medicinal purposes. Their use as curatives for a variety of ailments has been a mainstay of human cultures since antiquity. In the past one hundred years, purified monomolecular drugs have been widely adopted by many cultures, partially obscuring the collective wisdom of traditional remedies. Plants contain secondary compounds that have the potential to influence human health in ways that are being described in today's marketplace as "health functional." Many of these secondary compounds were modified through the process of domestication and modern breeding, and our interest in their efficacy for human health has increased dramatically in recent years.

For the past seventeen years, we have studied some of the health-related properties of certain vegetable species. Our work has focused on understanding how the horticultural environment, in combination with modern genetics, influences the health functionality of these crops. We have built an interdisciplinary team of researchers from medicine, genetics, food science, and horticulture to bring diverse expertise to bear on our research.

Together with our students, we have been both inspired and humbled by the intricacies of unique secondary compounds from these vegetables. We have learned that the promises of food functionality also contain many pitfalls. The potential for health functionality from vegetable crops will be interpreted through the lens of crop domestication, modern breeding and production, and a marketplace hungry for health-promoting foods.