

# Symposium

## Impact of Foods on Trace Mineral Availability and Metabolism

### Presented at the 64th AACC Annual Meeting, Washington, DC

Cereal Chem. 58(1):1

#### Introduction

Consumer awareness and interest in nutrition and nutrition-related issues have stimulated numerous discussions and much research related to mineral availability and metabolism, especially with regard to protein/mineral and fiber/mineral relationships. This symposium was organized as an initial step toward bringing order out of chaos in these areas.

One area that has received increased attention recently is the effect of soy protein on dietary mineral bioavailability. A considerable amount of data has been generated with respect to experimental and farm animals. However, a limited amount of data is available from human studies, and this is addressed in this symposium. Also, the relationships among protein, zinc, and copper in human nutrition are discussed. Because zinc and copper are recognized as antagonists, will data from human studies demonstrate that varying intakes of zinc alter utilization of copper? Stable isotopes have potential usefulness in such studies. Another question under discussion is why foods of plant origin, as opposed to those of animal origin, decrease mineral bioavailabilities. Are these differences caused by some chemical entity such as phytic acid, or by food processing procedures, or by some other factor?

The literature about the effect of dietary fiber on iron balance is confusing because some studies indicate that fiber decreases iron balance and others do not show this. This confusion may be related to a particular component of dietary fiber. Although this

symposium does not answer that question per se, it provides information on a particular type of fiber, namely that from fruits and vegetables, which has a different chemical composition than that of wheat bran. Another goal of this symposium was to discuss the usefulness of animal models in assessing mineral bioavailability problems. Certainly a need exists for improving experimental designs using animals so that they more closely duplicate human dietary practices and problems. This approach should provide animal data more relevant to the human.

One of the major objectives of this symposium was to bring together a group of speakers with diverse interests, not only in protein nutrition but also in dietary fiber, as a means of stimulating discussions that would further our knowledge and research efforts in the future. The articles that follow discuss some of these areas and, I think, will stimulate new lines of effort in the future.

I wish to extend my sincere thanks to the participants in the symposium and to the authors who contributed manuscripts. I also wish to thank James Vetter of the American Institute of Baking, the technical program chairman for the 64th AACC Annual Meeting, for the privilege of working with him in the development of this symposium. A special thanks is extended to Daniel T. Hopkins of Ralston Purina Company for his assistance in inviting the speakers and cochairing the symposium, as well as for the development of the general symposium topic.

L. R. HACKLER  
Department of Foods and Nutrition  
University of Illinois  
Urbana 61801