University of California
Cooperative Extension
Tulare County

Agriculture and Natural Resources

UCCE News

Prepared by: Cathi Lamp

DO IRON POTS ENRICH THE FOODS COOKED IN THEM?

Cooking with iron pots may help prevent iron deficiency, according to a joint study by Cornell University and Agricultural Research Service scientists. They compared the bioavailability of iron in Chinese cabbage meals cooked in pots made of iron and aluminum. The study was conducted at the Agricultural Research Service U.S. Plant, Soil and Nutrition Laboratory.

Three Chinese cabbage dishes were cooked -- fresh Chinese cabbage, fresh Chinese cabbage with vinegar, and fermented Chinese cabbage (sauerkraut) -- identically in iron and aluminum pots, following a common recipe from northwest China. In each case, cabbage dishes that were cooked in iron pots had more available iron than those cooked in aluminum ones. The type of food being cooked also seemed to affect the pots' iron. Vinegar or acidic foods such as sauerkraut appeared to leach more iron from the pots, making more iron available for absorption.

To measure the bio-available iron, researchers used the ARS lab's revolutionary "fake gut." Coupling simulated digestion with a human intestinal cell line, it is the first system to accurately model in the laboratory what occurs in the human intestinal tract. Information about the "fake gut" appeared in the August 1999 Agricultural Research magazine, online at: http://www.ars.usda.gov/is/AR/archive/aug99/iron0899.htm.

Recipes from northwestern China from surveys showed significantly lower rates of iron deficiency in resource-poor regions, in comparison to similar regions elsewhere in the country. Plant-based diets that include lots of rice vinegar and sauerkraut cooked in iron pots are common in the region.

Iron deficiency anemia, the most serious form of iron deficiency, is among the developing world's most prevalent nutritional problems. It is associated with reduced capacity for physical and mental health and can lead to illness and death.

Iron deficiency anemia is problem is in many counties throughout California as well. The University of California Cooperative Extension Anemia workgroup is currently gleaning facts from a study of children in Contra Costa and Tulare counties in cooperation with the Department of Nutrition at the University of California Cooperative Extension. Work will be done in the coming year to share teaching strategies with professionals working with young children and their families to prevent anemia based upon facts discovered in the study and in other existing literature.

Source: Agriculture Research Service/United States Department of Agriculture News, September 25, 2002.

# # #