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ILSI PROJECT IDEA NEWSLETTER

IRON DEFICIENCY ELIMINATION ACTION

VOLUME 1 • NUMBER 1

ILSI launches Project IDEA Newsletter to increase awareness of iron deficiency anemia and report on worldwide food fortification activities

Newsletter promotes sharing of interest and information

Welcome to the first edition of *Project IDEA Newsletter*, the publication of Project IDEA designed to increase awareness of iron deficiency anemia (IDA), share information about current research and developing technology, and promote a global program of iron fortification of staple foods.

This newsletter has several goals. It will review country-specific fortification activities, discuss findings in iron studies, present Project IDEA

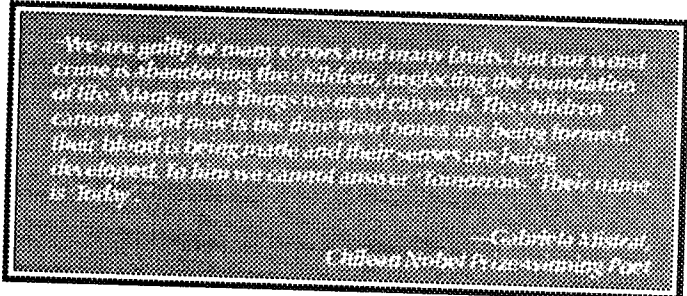
recommendations for appropriate food vehicles and fortificants, and review research on state-of-the-art fortification technologies. In addition, the

newsletter will cover the fortification activities of other agencies and review current applications in various micronutrients, such as vitamin A, iodine, zinc, folic acid, and B-complex vitamins.

Iron deficiency affects more than two billion people around the globe—more than a third of the world's population. Touching all groups, it is most common among infants, young chil-

dren, and women of childbearing age. IDA, the most severe form of iron deficiency, contributes to perinatal mortality and low-birth-weight infants, impairs growth and cognitive development in children, and causes fatigue and reduced productivity in adults. If left uncontrolled, it can limit the learning capacity and productivity of entire nations.

Project IDEA Newsletter hopes to promote dialogue and collaboration among a wide variety of Project IDEA partners in various countries. Through its broad distribution to nutrition technical advisors, collaborative organizations, ILSI branches, food companies, researchers, partners in academia, government officials, and other interested parties, the newsletter will encourage a worldwide sharing of interest and information.



Participants at the Workshop on Flour Fortification with Iron in Cairo included, from left to right: Dr. Farouk Shaheen, Nutrition Institute President; Dr. Anna Verster, WHO Regional Advisor on Nutrition and Food Security and Safety; Dr. Mamdouh Gabr, Chairman of Nutritional Committee of Nutritional Science; Dr. Reda Mostafa, Secretary General of General Organization for Teaching Hospitals & Institutes; Dr. Alex Malaspina, ILSI President; and Dr. Gamal Ghali, President ILSI North Africa and Gulf Region.

NEWS SUMMARY

China's efficacy study has shown that fortified soy sauce is effective in improving the hemoglobin status of school-age children. Preparations for a regional efficacy study are underway. Results of research may lead to commercial production of sodium iron EDTA. See page 3.

The fifty-third meeting of JECFA (Joint FAO/WHO Expert Committee on Food Additives) in June 1999 reviewed the safety of sodium iron EDTA. See page 3.

In India, ILSI India, the Micronutrient Initiative South Asia Regional Office (MISARO), and the National Institute of Nutrition in Hyderabad are pursuing research in the double fortification of salt. See page 4.

Project IDEA network convenes at ILSI Annual Meeting to report on global research to develop, test, and implement iron fortification programs

Scientific advisory committee includes experts in many areas of research

The January 1999 ILSI Annual Meeting in Nassau, Bahamas, provided an ideal opportunity for Project IDEA advisors and partners to come together and discuss global progress in iron fortification. At a luncheon on January 25, representatives from China, Japan, Vietnam, Indonesia, Thailand, Mexico, Colombia, and Egypt shared updates on iron fortification programs in their countries.

At this meeting the group decided to formalize a scientific advisory committee for Project IDEA and

agreed that the committee should consist of experts in food technology, hematology, medicine, and epidemiology. The following people have been invited to join the committee and are now providing ongoing advice to Project IDEA activities: **Dr. Richard Hurrell**, professor of human nutrition, Swiss Federal Institute of Technology, Zürich; **Dr. Sean Lynch**, professor of medicine, Veterans Affairs Medical Center, Virginia; **Dr. Rebecca Stoltzfus**, assistant professor, Johns Hopkins University; **Dr. Tomás Walter**, head of the

hematology unit, Institute of Nutrition and Food Technology, University of Chile; and **Dr. George Elton**, scientific technical consultant.

Discussions of micronutrients also were featured in the Scientific Program of the Annual Meeting. **Dr. Alex Malaspina**, ILSI president, spoke about iron fortification and the progress of Project IDEA, and **Dr. Walter** talked about the effects of iron deficiency anemia on the mental and cognitive development of infants.

NaFeEDTA recommended as the most appropriate fortificant when added to fish sauce in a rice-based diet

ILSI Japan compares efficacy of variety of iron fortificants

Dr. Shuichi Kimura, president ILSI Japan, and **Dr. Yukiko Nakanishi** of Showa Women's University, conducted iron bioavailability tests in rats, examining differences in the efficacy of various iron fortificants (ferrous sulfate, sodium iron EDTA, sodium iron citrate, and superdispersed ferric

pyrophosphate) in rice-based diets. The study also looked at the influence of iron fortificants on the behavior of other minerals. Major findings revealed that iron from NaFeEDTA was least affected by inhibitors in a rice-based diet and that it improved calcium and magne-

sium stores in the liver as well. From the study it was concluded that NaFeEDTA was the most appropriate fortificant to fortify fish sauce in a rice-based diet, a conclusion supported by earlier studies confirming that NaFeEDTA does not affect the taste, color, or smell of fish sauce.

IVACG and INACG symposia attract much interest in Durban

Nearly 600 professionals discuss vitamin A and anemia research programs

On March 8-11 of this year, the U.S. Agency for International Development (USAID) sponsored the 19th meeting of the International Vitamin A Consultative Group (IVACG) in Durban, South Africa. The meeting drew more than 580 health professionals from 66 countries to discussions about recent

vitamin A programs and research findings. Many attendees remained an additional day to attend the day-long symposium of the International Nutritional Anemia Consultative Group (INACG) on March 12. The symposium, also sponsored by USAID, focused particular attention on issues surrounding the prevention

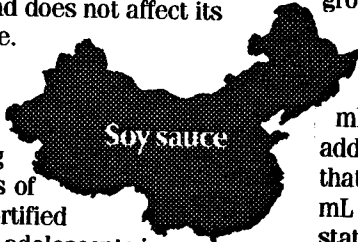
of iron deficiency and iron deficiency anemia, including assessment, supplementation, fortification, and dietary and public health interventions. **Dr. Alex Malaspina** presented recent developments in iron fortification technology and provided updates on the mission and progress of Project IDEA.

Focus on Fortification: activities in progress around the world

China

Several studies by the ILSI Focal Point in China have shown that sodium iron EDTA (NaFeEDTA) is an effective fortificant that is stable in soy sauce and does not affect its color or taste.

A school-based efficacy study looking at the effects of NaFeEDTA fortified soy sauce on adolescents in China indicates that it is effective in improving hemoglobin levels, significantly increasing hemoglobin in adolescents. **Dr. Junshi Chen**, deputy director of the ILSI Focal Point in China and the Chinese Academy of Preventive Medicine Institute of Food, Hygiene and Nutrition, was the principal investigator for the study that took place in three middle schools with 304



children, 14-17 years old. Participants were given a soup during lunch every day for 3 months. Three groups participated: a control group that received unfortified soy sauce, a treatment group that received 5 mg iron/5 mL soy sauce, and an additional treatment group that received 20 mg iron/5 mL soy sauce. Hemoglobin status was significantly improved in both the 5 mg and 20 mg iron fortified groups. In the 5 mg iron fortified group, hemoglobin increased from 11.5 g/dL at baseline to 13.6 g/dL at 3-month follow-up. In the 20 mg iron group, hemoglobin increased from 11.6 g/dL to 14.0 g/dL.



Last September, Alex Malaspina, ILSI President, met with Thailand's Princess, Her Royal Highness, Maha Chakri Sirindhorn, to discuss fortification strategies for the nation. The Princess has subsequently agreed to be a patron of ILSI Thailand.

Encouraged by the positive findings of the study, the ILSI Focal Point in China is preparing for a 2-year regional efficacy study. The study will be a randomized double-blind control

—see FOCUS, page 4

Breaking News...

ECFA approves sodium iron EDTA for food fortification programs

Sodium iron EDTA is an attractive fortificant because it is stable in food and enhances iron absorption in vegetarian diets, which contain high levels of phytates. INACC submitted safety data to the Joint Expert Committee on Food Additives of the WHO/FAO which met in Rome June 2-10. It is worth noting that "the Committee concluded that sodium iron EDTA could be considered to be safe when used in supervised food fortification programmes in response to a need for iron supplementation of the diet of a population as determined by public health officials. Such programmes would provide daily iron intakes of approximately 0.2 mg/kg bw."

Center for Health Promotion houses PAN and Project IDEA programs targeting nutrition research and community interventions

The ILSI Center for Health Promotion (CHP), established in 1998 to address, on an international basis, public health issues associated with diet and other health-related life choices, has focused initial programs on decreasing iron deficiency anemia around the world and encouraging physical activity and sound nutrition through public education.

Program activities bridge the gap between science and community programming. Two programs are underway to address these issues: the Physical Activity and Nutrition Program (PAN), aimed at reducing and preventing childhood obesity and designed to promote healthy physical activity and nutrition throughout adulthood and into older age; and Project IDEA, whose mission is to reduce the global burden of iron

deficiency and anemia through iron fortification of staple foods and condiments.

The goal of CHP is to reduce morbidity and mortality while enhancing the quality of life in populations around the world through targeted research and investigations designed to: identify innovative solutions; collaborate with community-based organizations to design, test, and implement intervention programs; and build coalitions among public and private institutions to address problems.

Adding to the global effectiveness of ILSI, this newly organized 501(c)(3) not-for-profit organization will help resolve public health issues and increase the opportunity for individuals to achieve their full potential unencumbered by avoidable health problems.

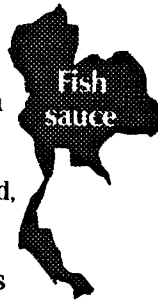
FOCUS, from page 3

trial involving four to six villages. Soy sauce fortified with NaFeEDTA will be given to the intervention group, while the control group will receive unfortified soy sauce.

Results from the research may lead to commercial production of NaFeEDTA in China. Such a manufacturing facility in China could provide the global market with another source of NaFeEDTA for fortification.

Thailand

An ILSI Thailand workshop on micronutrients is planned for September 23-24 in Bangkok. Presentations at the workshop will focus on current issues in micronutrient deficiency and case studies from China, Indonesia, Thailand, and Vietnam. Workshop objectives are to clarify the direction of Thailand's national micronutrient program and to identify key activities associated with it. Dr. Malaspina will present the keynote address.



India

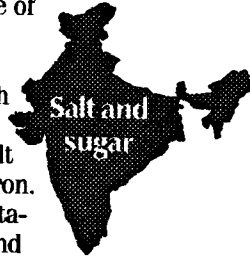
ILSI India and the Micronutrient Initiative South Asia Regional Office (MISARO) successfully conducted a National Conference on Micronutrient Fortification of Foods on February 8-9. Focused on strategies to reduce the high prevalence of micronutrient deficiencies throughout the nation, the well-attended conference issued a declaration calling on all sectors to mobilize a strong effort to address micronutrient deficiencies on a high priority basis. The document emphasizes the necessity for cooperation and commitment from industry, government, and the scientific community.

In an effort to mobilize physicians in India to take up the cause of micronutrient malnutrition (in particular iron deficiency anemia), ILSI India organized a meeting in New Delhi in May to discuss ways physi-

cians could be involved in efforts to control this problem. According to India's National Institute of Nutrition, no state in the country is free of iodine and iron deficiencies. Thus double fortification of salt with iodine and iron offers a unique opportunity to reduce these deficiencies. Presently, ILSI India, MISARO, and the National Institute of Nutrition in Hyderabad are pursuing research in the double fortification of salt with iodine and iron.

In May, representatives from ILSI and MISARO visited India to meet with salt producers to investigate the feasibility of this double fortification.

India also is considering a program to fortify sugar with vitamin A, a strategy that has proven effective in controlling vitamin A deficiency in Guatemala. ILSI India and MISARO are interested in helping with this effort as well.



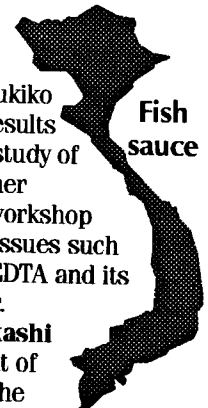
Vietnam

In August 1998, workshops sponsored by ILSI and the National Institute of Nutrition were held in Hanoi and Ho Chi Minh City to discuss the fortification of fish sauce with NaFeEDTA. Much progress has been made since then, and the protocol has been completed for an efficacy study of iron fortified fish sauce to control IDA in Vietnam. This study will be a randomized double-blind controlled trial involving two levels of fortification. Evaluations will take place at 3 and 6 months. The principal investigators of the study are **Dr. Pham Van Thuy**, researcher from the National Institute of Nutrition in Vietnam, **Dr. Nguyen Cong Khan**, vice-director of the National Institute of Nutrition in Vietnam, and **Dr. Jacques Berger**, researcher from Institut de Recherche pour le Developpement (IRD). A bioavailability study of fish sauce also is being planned. Researchers for the bioavailability study will include **Dr.**

Nguyen Xuan Ninh, researcher from the National Institute of Nutrition in Vietnam, **Dr. Richard Hurrell**, and **Dr. Jacques Berger**.

Project IDEA activities in Vietnam are supported by a generous grant from the **Nippon Foundation** and include: bioavailability studies, efficacy studies, production of fortified fish sauce, commercial model development, training, monitoring and evaluation of fortified fish sauce. A Nippon Foundation Grant Ceremony was held on May 19th in Hanoi.

Project IDEA's Coordination/Review Meeting for Fish Sauce Fortification was held May 20-21. The purpose of the meeting was to coordinate projects in China, Vietnam, and Japan. Results and lessons learned from China's efficacy trial of fortified soy sauce were shared by **Dr. Junshi Chen**. **Dr. Yukiko Nakanishi** discussed results from a bioavailability study of NaFeEDTA in rats. Other presentations at the workshop reviewed several key issues such as regulation of NaFeEDTA and its bioavailability. Both **Dr. Malaspina** and **Mr. Takashi Togami**, vice president of ILSI Japan, attended the Coordination/Review Meeting and the Nippon Foundation Grant Ceremony.

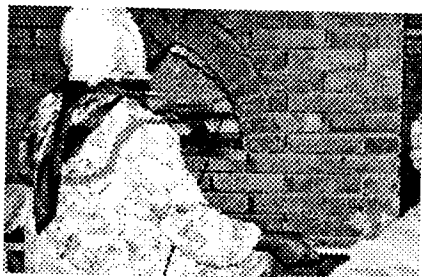


Indonesia

Iron fortification of wheat flour at 60 ppm elemental iron was launched in January 1999. UNICEF and ILSI assisted by providing scientific information.

Efforts are now focused on installing fortification facilities in a number of wheat mills. ILSI's support of the seventh Five Year Plan for Nutrition Workshop was instrumental in setting the scene for iron fortification of wheat flour.





Project IDEA pursues fortification activities in Egypt. Shown here is a woman baking baladi bread.

Egypt

Although the prevalence and risk of iron deficiency anemia is recognized as a significant health problem in Egypt, misconceptions about fortification hinder the progress of the fortification of wheat flour used in baladi bread, a major Egyptian staple food. To address the current obstacles to fortification, the Egyptian Nutrition Institute, the Micronutrient Initiative, and ILSI cosponsored a Workshop on Flour Fortification with Iron on April 19-20. The workshop focused on consumer perceptions of fortification and on how to make fortification acceptable to the public. The workshop was well received and had a strong representation from government agencies, academia, industry, and international experts.



Zambia

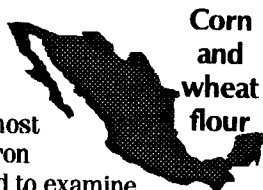
A 1998 national survey conducted by the National Food and Nutrition Commission (NFNC) of Zambia and the U.S. Agency for International Development (USAID) found high levels of anemia in women (41%) and children (65%). Ms. Dorothy Foote, program manager of Project IDEA, attended a USAID-sponsored data dissemination and planning workshop for micronutrient deficiencies in Zambia, April 20-24. Zambian partners outlined a 5-year national



program to control micronutrient malnutrition, one component of which was micronutrient fortification of maize meal. Maize millers in Zambia are positive about the program, and legislation for voluntary fortification is currently being reviewed. Project IDEA hopes to build partnerships in this country, working with local institutes and other donors to promote maize fortification and conduct relevant research on bioavailability and efficacy.

Mexico

As fortification of corn and wheat flour becomes mandatory in Mexico in 1999, Project IDEA plans to support an efficacy trial of fortified flours to help identify the most appropriate iron fortificant and to examine the efficacy of iron fortification as a way of controlling anemia. In addition, Project IDEA will support a bioavailability study using stable isotopes to compare the absorption of reduced iron alone with reduced iron plus Na_2EDTA . A workshop to review current research on iron fortification is tentatively being planned for the first part of the year 2000.



Russia

Project IDEA has begun preliminary discussions with the Centers for Disease Control and Prevention (CDC) and other agencies to sponsor a workshop on micronutrient deficiencies in Russia in the fall of 1999. Of particular importance on the agenda will be food fortification with iron and iodine.



Philippines

In the Philippines, double fortification of wheat flour with Vitamin A and iron is presently being pursued. A revised position paper is being

prepared by the National Nutrition Council that will support the fortification of wheat flour and cooking oil. In mid-August in Malaysia, the World Health Organization (WHO) and UNICEF will hold a regional working group meeting on micronutrient intervention programs to look for ways to accelerate progress. ILSI has been asked to invite participants with technical expertise in the areas of micronutrient malnutrition to the meeting.



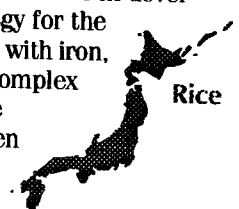
Brazil

In May 1999, wheat and corn flour millers in Brazil signed a "social pact" with the Ministry of Health to focus efforts on iron fortification. "Pena Branca," a large wheat flour mill in Brazil, recently decided to enrich 70,000 tons of wheat flour with iron, for domestic use until 2001. The iron fortificant to be used will be ferrous sulfate (FeSO_4). This is an important step forward. It is hoped that Brazil's initiation of fortification will act as an impetus for surrounding countries to implement micronutrient fortification programs. Dr. Agide Gorgatti Netto, Project IDEA consultant, will attend meetings with Brazilian flour millers at their mill sites and share scientific and technical expertise on the health benefits of fortification.



Japan

ILSI Japan has been active in developing the technology for the fortification of rice with iron, vitamin A, and B-complex vitamins. The base technology has been completed, and discussions with the National Institute of Nutrition in Vietnam in May addressed the potential impact of this technology and the feasibility of implementation in Southeast Asia.



CALENDAR

JANUARY 1999

26-28 ILSI *Annual Meeting*, Nassau, Bahamas

FEBRUARY 1999

- 3-5 Joint UNICEF/WHO *Iron Deficiency Anemia Consultation Meeting*, Geneva, Switzerland
 8-9 ILSI India/MISARO/Project IDEA *National Conference on Micronutrient Fortification of Foods*, Jaipur, India

MARCH 1999

12 USAID, *INACG Symposium*, Durban, South Africa

APRIL 1999

- 19-20 Egyptian Nutrition Institute/Micronutrient Initiative/ILSI North Africa and Gulf Region, *Workshop on Flour Fortification with Iron*, Cairo, Egypt
 21-24 USAID, *Dissemination and Planning Workshop for Control of Micronutrient Malnutrition*, Zambia

MAY 1999

- 19 Nippon Foundation Grant Ceremony, Hanoi, Vietnam
 20-21 *Project IDEA Coordination/Review Meeting on Fish Sauce Fortification*, Hanoi, Vietnam
 23-28 ILSI India, NIN India, *Project IDEA Meeting on Double Fortification of Salt*, Hyderabad, India
 28 ILSI India, *All India Institute of Medical Sciences Meeting*, New Delhi, India

AUGUST 1999

- 17-19 WHO/UNICEF *Regional Working Group Meeting on Micronutrient Intervention Programs*, Kuala Lumpur, Malaysia
 25-26/27 *ILSI Nor-Andino Study Group*, Workshop on Food Fortification, Santa Fe de Bogota, Colombia

SEPTEMBER 1999

- 23-24 ILSI Thailand, *Regional Conference on Micronutrients: The Current Issues*, Bangkok, Thailand

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The Child Cannot Wait...