Manual for employees in the program of monitoring and supervising supplementing table salt and flour with micronutrients program

Prepared by
Eng. Rawhia Borham
Eng. Hanan Massad

Supervision of the preparation
Dr. Ayoub Swaydeh

Directorate of Noncommunicable Diseases
Nutrition Department

Department of Health

UNICEF

For each child

Directory of employees in the follow-up program And monitoring of programs for supplementing table salt And flour with micronutrients

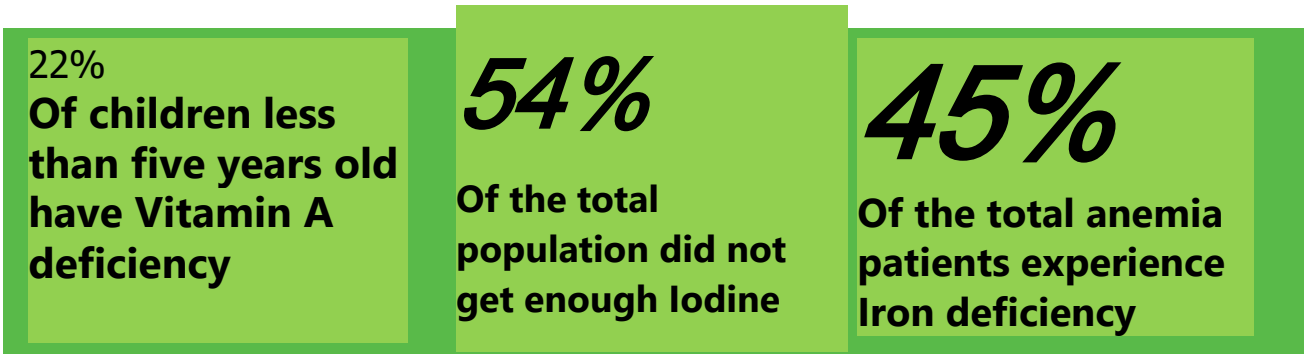
Directorate of Noncommunicable Diseases

Nutrition department

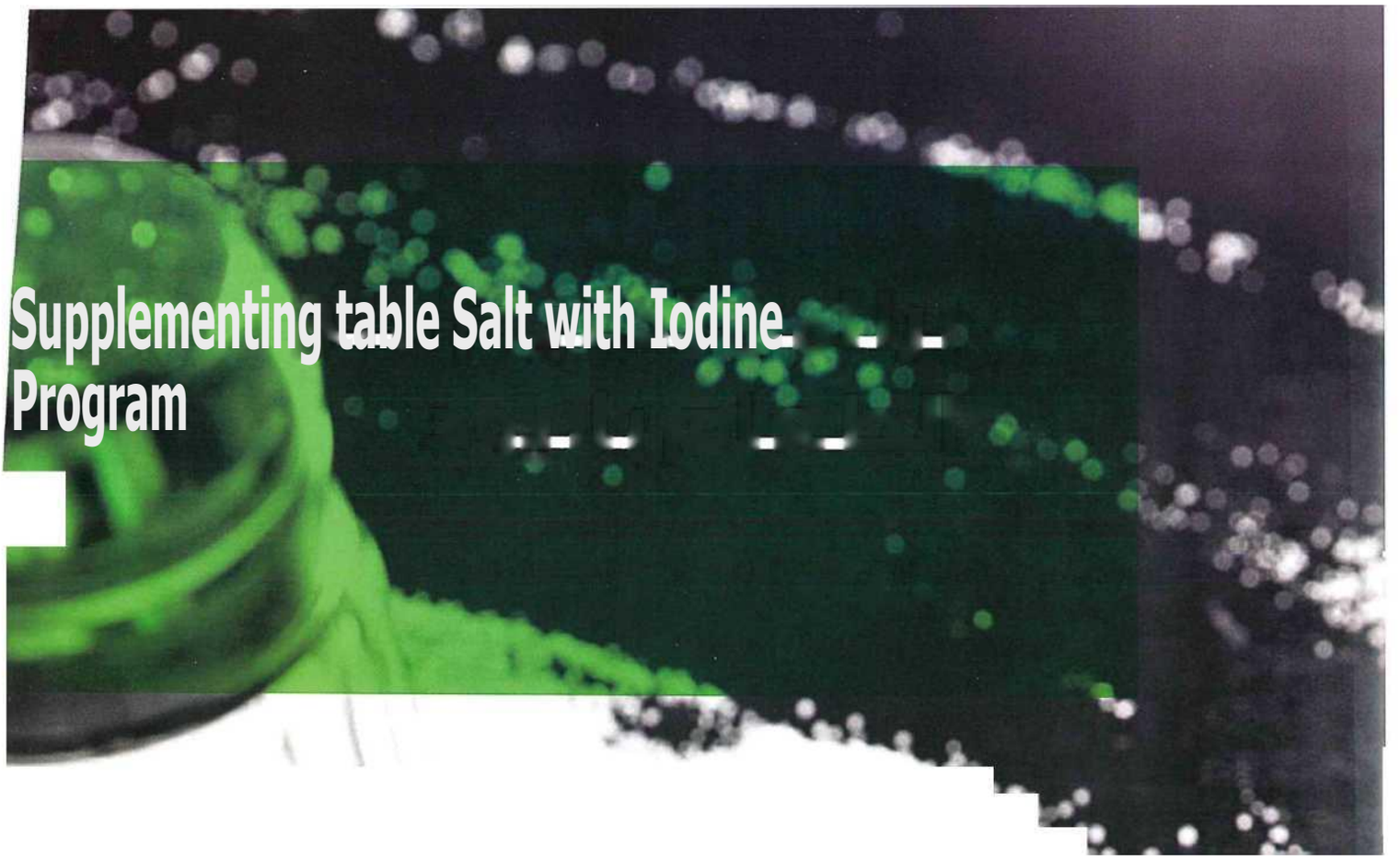
Introduction

micronutrients enable the body to produce enzymes, hormones, and other substances necessary for proper growth. Although the body needs these nutrients in very small quantities, even if they are at moderate levels, they can have serious adverse effects on bodily functions. Malnutrition emanating from Micronutrient deficiency has many adverse effects on human health that may not be apparent. In addition to direct health effects, Malnutrition emanating from Micronutrient deficiency has severe effects on economic growth and productivity, including public health costs and delayed human development.

Micronutrient malnutrition is widespread worldwide, but is concentrated in developing countries in particular. It can affect all age groups, but young children and women of reproductive age are most at risk. The three largest public health problems of micronutrient deficiencies in the Eastern Mediterranean Region are due to iodine deficiency, vitamin A and iron in the Eastern Mediterranean Region;



Jordan is one of the countries recovering from the problems of malnutrition resulting from the shortage of some micronutrition which became a global problem and the appropriate solutions must be developed. Where the Ministry of Health has adopted a number of strategies to address these nutritional problems to maintain human health, especially in relation to Problems of anemia and vitamin A deficiency And thyroid hyperplasia.



Supplementing table Salt with Iodine Program

Iodized food salt

Introduction

Iodine is an element that the body needs in small amounts but plays an important role in the formation of essential thyroid hormones for the growth of the embryo and the regulation of nutrient metabolism and cell activity. If you do not get enough Iodine this lead to health problems, notably thyroid swelling fetal death during pregnancy or Cretinism which is characterized by mental and physical growth.

The World Health Organization (WHO) estimates that 37% of school students and nearly 2 billion people do not have iodine in the required quantities. Therefore, iodine deficiency is a global health problem in more than 50 countries. UNICEF and the International Council for the Control of Iodine Deficiency Disorder (ICCID) have therefore enhanced the addition of iodized salt to the table because: salt is widely consumed by the entire population.

The addition of salt is easy to supervision because of the low number of Salt factories and packing plants.

The addition of iodine to salt is inexpensive as it does not affect the properties of salt.

.In Jordan, a study of the National Survey of Iodine Deficiency in 1993 showed that the proportion of thyroid glands was 37.7%. The 2000 national survey found that iodine deficiency remains a health problem in Jordan despite the application of salt iodization and that prevalence of thyroid glands is 33.5%, while 86% of Jordanians use iodine salt.To determine the program, a national survey was conducted to assess the impact of the iodization program for table salt among school students in 2010. The results of the national survey indicated an improvement in the health status. The prevalence of thyroid hyperplasia was 4.9%

Establishment of national table salt supplementation with Iodine program

In 1996, the Ministry of Health, in collaboration with UNICEF and WHO, launched the National iodization program for salt in 1996 as one of the main strategies to reduce iodine deficiency health problems. The responsibility was given to the Nutrition Section and a comprehensive national program including iodization of salt Food is compulsory for all kinds of table salt, so an integrated quality control system has been put in place to ensure its success and continuity.

Program Goals

1. Full supervision of the addition of iodine to salt at the level of salt plants.

3. Follow up and monitoring the process of Ionization of the salt in the market and follow the salt imported from outside Jordan.

3. Apply instructions and regulations to ensure the continuity of table salt iodinization.

Technical committee Duties

1. Establish monitoring and supervising system to ensure the addition of iodine to salt in all salt factories and plants located in the Kingdom.

03 Issue instructions and procedures taken regarding the potential violating salt factories and follow up on any other matters.

3. Inspect imported salt and ensure that it conforms to the Jordanian standards in terms of iodine ratio.

4. Periodic visits to salt producing plants.

5. Field supervision by Health inspectors to take Periodic samples for inspection and verifying The extent of their conformity with the Jordanian specifications.

6. Identify problems facing the salt producers and helping them to solve

Salt plants and labs

The following are factories in Jordan that produces salt: Amra Salt Factory / Al Faisaliah.

1. Al Khaleej Al Zarqa Factory / Al Daleel.

2. Raher Factory for the manufacture of salts Al-Muwaqqar Rjam Shami.

3. Rashed, Mughair and Rifa'i Factory Al-Muwaqqar/ Najir Al-Shahi

There are also grinding and packaging laboratories for table salt, most notbaly: 1. Abu-Sbika / Al-whehdat

4. Packaging labs Jordan/Al-Jarkaa / Wadi-al-Ish

5. Al-Tawakol/ Sohab

6. ASIA PACKAGING FACTORY / SOUTH AVAR / ALKARAK

7. Warehouse of Habiba / Mqablain

8. Nabil Wadi Laba / Sahab

Iodine supplementation levels

The daily per capita requirement ranges from 150 to 300 µg of iodine. Therefore, the Jordanian standard specifies the iodization of Table Salt by 30-40 mg per million. It has been agreed that the use of potassium iodate (KLO3) because this compound has a high degree of stability and bear the conditions of temperature and humidity and has a high degree of safety in terms of toxicity.

In addition, salt is imported from outside Jordan with iodine added to it in form of KI .

Jordanian standard for food salt

1. The Jordanian Standard (Technical Regulation) No. 2012/32 regarding the table salt requires the addition of iodine in the form of potassium or sodium iodate or in the form of potassium or sodium iodide compound, with an iodine ratio of 40-20 mg / kg in the final product.

2. The declaration card was amended in terms of validity and became one year instead of three years..

3. The Jordanian standard stipulated that the product should be dry, smooth and clean.

Monitoring and supervision system

First: Monthly inspections are done as follows: Random samples of table salt from supermarkets and grocery stores are taken by health monitors in the kingdom's directorates

Examine samples of the table salt by rapid reagent Spot Kit

Send reports to the nutrition department

Second: follow-up periodically (every 4 months)

Random samples of table salt of various varieties taken by health monitors in the Kingdom's directorates

Examination of salt samples in the laboratories of the Food and Drug Administration and determining the percentage of iodine in it

Send reports to the nutrition department

Registering offense record for samples of table salt that proves the increase or deficiency of iodine

(b)

Field visits to salt plants by technical committee to add iodine to table salt

Random sampling of production and laboratory testing by some directorates
Reporting to the Nutrition Section by the Committee

Taking necessary legal actions against factories when proven irregular results in the amount of iodine added

Duties of health inspectors and inspectors in the field of iodization salt iodization

1. Monitoring and inspecting the effectiveness of supplementing table salt with iodine program, where an immediate test is carried out using the test spot inside the factory or laboratory to determine whether the sample contains iodine. If a negative result is detected by the quick reagent, it is transferred to the laboratories of the SFDA for quantitative examination.
2. Monitoring and inspecting the capacity of salt samples in terms of the date of production, completion (validity period), brand name, factory or Sample packaging laboratory and indicating that the samples should contains iodine.
3. Where the internal record must be kept for each plant indicating production follow-up records within the plant, operating numbers, dates of production, amount of iodine added, and monitoring in order to control the recommended amounts of iodine.

4. Follow the iodine before adding it in terms of storage, and its presence in sealed cans to maintain its effectiveness.
5. Permanently keeping the quick checker with the health inspector and check its validity and request it from the Nutrition / Noncommunicable Diseases Directorate / Ministry of Health.
6. The supplementation supervision team will follow up the effectiveness of Iodine.

Supplementing flour with micronutrient Program

Introduction

Iron deficiency anemia is a public health problem in the Eastern Mediterranean Region, with reports citing that more than a third of the population in the Region is anemic. Pregnant women and young children are most at risk of anemia; about 50% of pregnant women and 63% of children under the age of five have iron deficiency anemia.

There are many types of anemia, which are very different in their causes and treatments, including anemia caused by iron deficiency which is the most common and can be easily treated with modifications in the diet and iron supplementation. Anemia, known as hemoglobin or hematocrit, is commonly used to describe severe iron deficiency in the population. The health consequences of anemia can include multiple pregnancy problems, corporal growth and cognitive impairment, increased risk of morbidity in children, and reduced labor productivity in adults.

In Jordan, the Ministry of Health has adopted a number of national strategies to combat iron deficiency, such as adding iron and folic acid to flour. The program has been implemented in most of the Kingdom's mills since 4/15/2002. In the year 2006, the Ministry of Health expanded the program by adding the following elements to the standard flour, namely vitamin B1 vitamin B 2 vitamin B6 vitamin B12 vitamin A zinc. At the end of 2010, vitamin D was added to the supplemented flour in addition to the previous nutrients.

Benefits of micronutrient

Supplementing the flour with micronutrients has several benefits, including: 1. Provides safety and health for the child and mother during childbirth.

3. Increases the ability of mothers to care for their children.

3. Increases child activity as well as the educational cognitive ability

4. Reduces infection of children.

Technical Committee of the micronutrient supplementation

Technical committees from different sectors in the Kingdom were established to follow up the implementation of supplementing flour with micronutrient program in 2003 from the following: 1. Ministry of Health Directorate of Noncommunicable Diseases.

3. Ministry of Industry and Trade.

3. Grain Mills Association union

4. Food and Drug Administration.

5. Specifications and Standards

The Technical Committee's tasks were to monitor and evaluate through field visits, provide mill support and maintain the quality control system.

Wheat Mills in Jordan

The number of mills located in the Kingdom is 14 mills distributed across the Kingdom's governorates.

Numbers of Mills and distribution to the provinces

Number	Governorate
8	The Capital
1	**Zarqa**
4	Irbid
1	Ajloun
14	Total

Mills Names

Governorate	Mill
Oman	Al-jewaida
Oman	Al-Haditha
Oman	White Gold
Oman	New Station (Oman)
Oman	Al-Hashemia
Oman	Jordanian Flour
Oman	South of Amman
Oman	An AlKubra
Irbid	Irbid National (Not producing currently)
Irbid	Al-Namish
Irbid	Al-Fakhr (Qmim)
Irbid	Al-Malah
Ajlun	Abo Nosir
Zarqa	Greater Zarqa

Premix Compound

Flour is supplemented by Micronutrient by adding the latter to the flour through the Premix. The Premix is composed of the following active ingredients:

Iron. Folic acid, Vitamin A, Vitamin D, Vitamin B, Vitamin B2, Vitamin B6, Vitamin B13, Niacin, Zinc, as well as an inactive conveyor component to maintain compound homogeneity.

Primix is a soft powder that has a streamlined feature that makes it easy to add it to the flour using the mixing device.

Addition Levels:

Add the primix with 250 g / t of standard flour by the feeder.Where the addition is mandatory and binding to all mills and this is subject to the Jordanian standard of grain and Beans and their products - Wheat flour (Flour) (MS 293/2009 ..

Follow up and evaluating flour supplementing program:

Premix shall be packed in sealed containers with a net weight of 25 Kg, made of aluminum, with an internal labeling card and packed with cardboard boxes and an external statement card.

Types of monitoring, follow - up and evaluation of the flour - supplementation

Objective	Type
To ensure that the flour meets the required quality standards and safe specifications from the beginning (production stage to distribution warehouses) and includes: - Internal control (quality control and confirmation) - External control (inspection and supervision of mills) - Commercial surveillance(inspecting Marketplaces)	Continuous Routine Monitoring
Assessing the availability of subsidized bread and availability for consumption and coverage for individuals and the extent of the citizens'	Monitoring and evaluation at the consumer level

Internal control (self-supervision)

Responsible entity	Follow-up Methods	Time	Indicators for success	Activity
Mills	• Use daily quality control templates • Reviewing stocks of Premix and using it • Review the daily laboratory tests of the mills • Calculate the percentage of addition	daily	Use of quality control forms Process success	Periodic inspection of the addition process
Mills	Monitor storage facilities and provide adequate storage conditions	daily	Provides health conditions for storage in mills	Premix
Mills	Conducting laboratory tests on samples Conducting laboratory tests daily by rapid reagent and recording them in the mills registers	daily	Number of Lab tests	Conducting laboratory tests

External follow-up

Responsible entity	Implemented procedures	Time	Indicators for success	Activity
Producer Department of Health	Getting the producer certificate Analyzing Premix in local labs	for every Batch of Premix	Getting the percentages of premix within required concentration of vitamins and minerals	Ensuing the availability of the Premix certificate
Technical Follow-up Committee. Nutrition department	Mills visits Courses Reports on the progress of the addition process in mills	2-3 months	The existence of records with the required information The right additional process Periodic examinations	• Periodic visits to the mills for ensuring the addition procedure • Development of surveillance models • Development of quality control records • Ensure laboratory testing by mills • Development of sampling

Responsible entity	Implemented	Time	Indicators for success	Activity
• Food and Drug Administration Laboratories • Royal Scientific Society Laboratories	• Conduct laboratory tests to show the rate of addition and stability • Conducting laboratory tests	quarterly Semiannually	Stability of the percentage of micronutrients according to the supplementation percentage Existence of adequate Storage conditions suitable for ensuring the stability of the added compound	Bakeries Collect flour samples Collect samples of subsidized bread
	Conduct laboratory tests to show the effect of storage on the percentage of	quarterly	Provide appropriate sanitary storage conditions	Warehouses in local markets
		According to imported shipments	Import subsidized flour supported based on the required percentages specified in the Jordanian standard specifications	Imported flour

Application of the monitoring system for

Role of health inspectors in directorates:

Their duties are:

Monitoring the role of mills in flour supplementation program under the following items:

a. Premix:

Provide adequate storage conditions (good ventilation, proper temperature, avoidance of direct heat and adequate humidity) - Provide input and recording system for Premix compound. Use and store the mixture according to the FIFO Standard.

Controlling the balance of the Premix and its availability (dividing the amount used on the quantity of flour produced)

2.Mixer/ Feeder:

Monitoring the operation of the device and the presence of Premix in it

Adjusting and calibrating the mixing device according to the quantity of milled material

Sampling instructions:

Samples are collected from the end of the production line (packing site) and from pre-packaged samples

Protect samples from heat and humidity until analysis time.

the samples well before inspection to ensure complete sample homogeneity

The sample weight is about 500 grams.

A label shall be placed with the sample indicating the name of the mill, the date of production and the place of sampling.

3. Monitoring the storage of flour in mills and markets

Provide special storage conditions to maintain Effectiveness of vitamins and minerals added.