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The Flour Fortification Initiative: A Technical Progress Report

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Flour Fortification Initiative
A Public-Private-Civic Investment in Each Nation

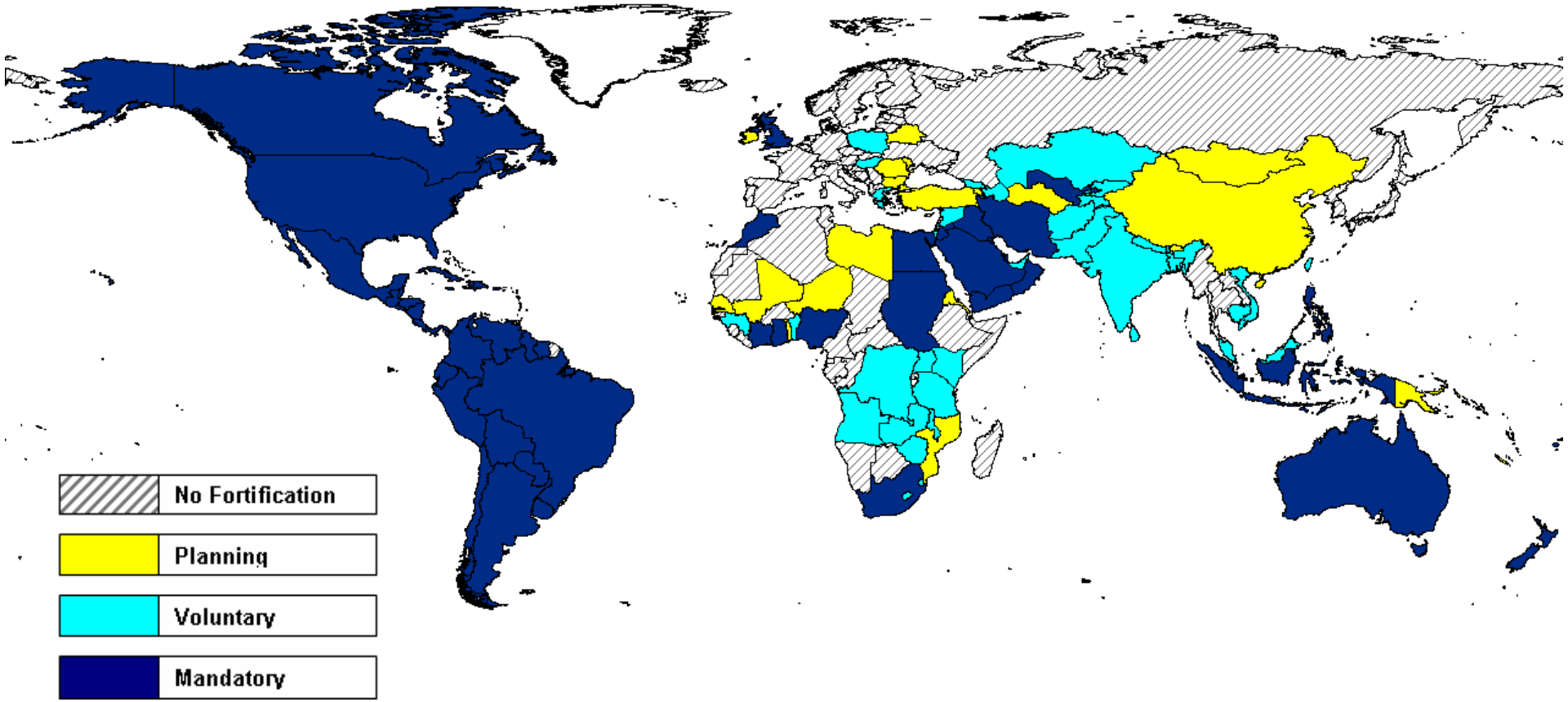
Presentation Topics Covered

- Flour Fortification Progress as of September 2008
- Atlanta Workshop on Practical Guidelines and Recommendations for Flour Fortification
- Millers Best Practices Guidelines
- Premix Manufacturers Best Practices

Flour Fortification Progress

September 2008

Fortifying with at least iron and/or folic acid



Flour Fortification Progress

Since 2004:

- ✓ Nearly 2 billion people now have access to fortified flour - 858 million more than in 2004.
- ✓ Growth in fortified flour from roller mills increased from 18% to 30%
- ✓ The number of countries with documented national regulations for mandatory wheat flour fortification increased from 33 to 55.

Atlanta Workshop Leading Experts

Nearly 100 leading nutrition, pharmaceutical and cereal scientists and milling experts from the public and private sectors worldwide met March 30 to April 3, 2008, in Atlanta, Georgia, to harmonize advice on flour fortification.

Scientifically Sound; Operationally Feasible

Expert research considered:

- Low- and high-extraction flour
- Fortification with iron, zinc, folic acid, vitamin A and vitamin B12
- Broad ranges of flour consumption
- Efficacy, effectiveness and safety

Scientific recommendations were reviewed by technicians and millers for operational feasibility before becoming the basis of the workshop's discussion.

General Observations

Flour fortification:

- Should be considered whenever industrially produced flour is regularly consumed
- Is most effective if mandated at a national level
- Will achieve optimal results when efficacy and effectiveness are monitored
- Is a preventive approach to improving micronutrient status over time
- Is only one food-based intervention; others should be considered as applicable

Fortification Considerations

- Nutritional needs and deficiencies of the population
- Per capita consumption of “fortifiable” flour
- Sensory and physical effects of the fortificant
- Fortification of other food vehicles
- Population consumption of vitamin and mineral supplements
- Cost

When sufficient levels of the fortificant are used, flour fortification:

- Reduces neural tube defects by increasing folic acid intake
- Improves iron status, if a *bioavailable* iron is used
- Improves zinc status
- Can increase vitamin A intake and improve status
- Could be a feasible approach to improve B12 status

Fortification Programs Should Include:

- Quality Assurance and Quality Control (QA/QC) programs at mills
- Regulatory and public health monitoring of the nutrient content of fortified foods
- Assessment of the nutritional/health impacts

Recommendations

Nutrient	Type of flour (extraction)	Fortificant	Level of nutrient to be added (parts per million) By per capita wheat flour intake (g/day)			
			<75 g/day	75-149 g/day	150-300 g/day	>300 g/day
Iron	Low	NaFeEDTA Sulfate/Fumarate Electrolytic	40 60 NR	40 60 NR	20 30 60	15 20 40
	High	NaFeEDTA	40	40	20	15
Zinc	Low	Zinc Oxide	95	55	40	30
	High	Zinc Oxide	100	100	80	70
Folic Acid	Low or High	Folic Acid	5.0	2.6	1.3	1.0
Vitamin B12	Low or High	Cyancobalamin	0.04	0.02	0.01	0.008
Vitamin A	Low or High	Vitamin A palmitate	5.9	3.0	1.5	1.0

Millers Toolkit

- CDs in Arabic, Chinese, English, Russian,
- French and Spanish: under development
- On-line version in English available at www.sph.emory.edu/wheatflour

Purpose: Designed to Complement Existing Documents and Manuals

- Define Basic and Best Practices for Millers and Food Control Authorities
- Provide set of conditions for Basic and Best Practices

NOTE: Food control authorities must ensure level playing field for both national producers and importers to avoid potential WTO conflicts

Topics covered:

- Quality systems
- Premixes
- Feeders
- Fortification Set-up
- Fortification Process
- Mill Quality Control
- Quality Assurance
- Record Keeping
- Comparative Check List

Basic/Best Practices Matrix - Example

Component	Basic Practice	Indicator	Best Practice	Indicator
Quality system	GMPs	GMP Manual docs	HACCP ISO	Manuals Docs 3rd party audits
Premix				
Feeders				
Fortification Practices				

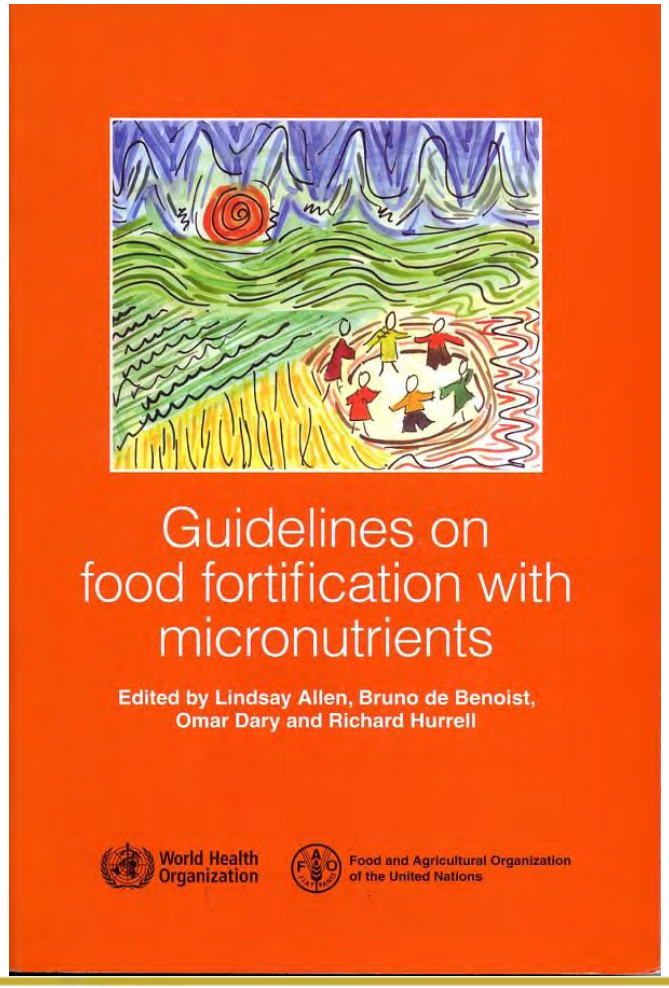
Premix Manufacturers Best Practices Document

- Designed to provide information to Premix Manufacturers for the production, distribution and procurement of premixes for flour fortification.
- Designed for use by Premix Manufacturers and for millers to ensure the manufacture and procurement of good quality premixes.
- Good quality premixes will ensure that flour fortification programmes will have the intended public health impact
- Document was prepared with input from micronutrient and premix suppliers, technical consultants and millers
- Endorsed by the participants of the Atlanta Fortification Guidelines workshop in March 2008

Premix Manufacturers Best Practices Document

- Consists of 12 sections covering the following topics for Premix Manufacturers.
- Introduction and Rationale
- Cereal Fortification
- Premix formulation and Ingredients
- Premix Ordering and Tenders
- Premix Manufacturing
- Quality Control
- Technical Information
- Mill Responsibilities and Supplier Relationships
- Premix Pricing and Quotations

WHO/FAO Guidelines Book and CD



- 2006 WHO/FAO "Guidelines on Food Fortification With Micronutrients"

For more information, see:

www.sph.emory.edu/wheatflour/atlanta08/

www.sph.emory.edu/wheatflour

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