

GOBIERNO FEDERAL SALUD

Cofepris
Comisión Federal para la Protección contra Riesgos Sanitarios

10 años
Protegiendo tu salud

APEC Scientific Seminar-Workshop on Food Safety Risk-Benefit Analysis

Federal Commission for the Protection from Sanitary Risks (COFEPRIS)
Ministry of Health

22-24 November 2011
Manila, Philippines

1

GOBIERNO FEDERAL SALUD

Cofepris
Comisión Federal para la Protección contra Riesgos Sanitarios

10 años
Protegiendo tu salud

- ✓ **Competent authority for regulation, control and encouragement to protect public health**
- ✓ **Federal agency dependent from the Secretariat of Health**
- ✓ **Technical and operationally autonomous**

2

GOBIERNO FEDERAL SALUD

Cofepris
Comisión Federal para la Protección contra Riesgos Sanitarios

10 años
Protegiendo tu salud

FIELD OF RESPONSIBILITY

Production, commercialization, imports, exports and publicity

<p>Medicine & health technologies</p> <ul style="list-style-type: none"> Medical devices Medicine & drugs Herbal remedies Tissue transplants Medical services 	<p>Toxic & dangerous substances</p> <ul style="list-style-type: none"> Pesticides Fertilizers Chemical precursors Essential chemicals 	<p>Consumer products</p> <ul style="list-style-type: none"> Food Beverages Tabacco Cosmetics LMO's
<p>Occupational health</p>		<p>Environmental risks</p>
	<p>Basic sanitation</p>	

3

GOBIERNO FEDERAL SALUD

Cofepris
Comisión Federal para la Protección contra Riesgos Sanitarios

10 años
Protegiendo tu salud

COFEPRIS OPERATIVE MODEL

International and National Legal Assistance

Evidence and Sanitary Risk Management → Sanitary Risk Authorization and Registries → Sanitary Risk Surveillance and enforcement

Sanitary Risk Communication → Sanitary Risk Analytical Laboratory

Administrative staff

Processes

4

GOBIERNO FEDERAL SALUD

Cofepris
Comisión Federal para la Protección contra Riesgos Sanitarios

10 años
Protegiendo tu salud

COORDINATION AGREEMENTS

Regulation & policies

Entidades federativas States

Operation
Inspection, control and encouragement

FEDERAL SANITARY SYSTEM

5

GOBIERNO FEDERAL SALUD

Cofepris
Comisión Federal para la Protección contra Riesgos Sanitarios

10 años
Protegiendo tu salud

Impact Assessment

Epidemiologic Analysis:

Contamination of food and health impacts

6



Gobierno Federal
SALUD

Cofepris
Comisión Federal para el Protección de Riesgos Alimentarios

10 AÑOS
Protegiendo tu salud

- Foodborne diseases (FBD) are a growing problem worldwide. There are several critical points in the process of food surveillance, which involves aspects related to the processing and handling of food as well as the characteristics of germs and their transmission mechanisms.
- FDB is defined as the one episode that a person has diarrhea syndrome that is associated with food intake, by that is essential to establish an epidemiological surveillance to identify early FDB cases, prevent the spread of disease and early detection of outbreaks . (Rosa R & Castro M. Food Inocuity. IICA. 2010)
- A foodborne disease outbreak is the episode in which two or more people have a similar illness after eating and / or water, linked by their origin, place of consumption or sale (excluding the cases of botulism, red tides, and Amanita phalloides poisoning)

8

Gobierno Federal
SALUD

Cofepris
Comisión Federal para el Protección de Riesgos Alimentarios

10 AÑOS
Protegiendo tu salud

In worldwide recognizes two major types of food-intake diseases transmitted:

- Intoxications
- Intestinal Infections

Both terms has been used to refer a FBD, however is convenient to be more specific

The most common diseases that have been identified as caused by contamination of food are:

- Those caused by microorganisms's **toxins** (*Staphylococcus aureus* y *Bacillus cereus*)
- **Toxins from some fish** (increasing histamine levels) or cause local damage such as *Clostridium perfringens*
- The greatest group of intestinal infections that includes virus, bacteria and parasites (like *E. coli*, Hepatitis A, Listeriosis, salmonellosis, shigellosis, toxoplasmosis, viral gastroenteritis (rotavirus and others), amebiasis, taeniasis, trichinosis, vibrio and others)

a

Gobierno Federal
SALUD

Cofepris
Comisión Federal para el Protección de Riesgos Alimentarios

10 AÑOS
Protegiendo tu salud

- WHO has reported that 88% of cases of diarrhea worldwide are attributable to: sanitation, potable water availability and hygiene behaviors (particularly within the household (Convalan and Prüss-Ustün, WHO 2006).
- Globally, in 2004 reported that about 1.5 million deaths from diarrhea (mainly in children under 5 years), were attributed to environmental factors, mainly water, sanitation (excreta disposal and drainage systems) and poor hygiene (Convalan and Prüss-Ustün, WHO 2006).
- In the european child population, these factors have been evaluated and determined that 5.3% of deaths from diarrheal disease is caused by the consumption of water of poor quality and inadequate sanitary measures (Valent et al 2004)

10

Gobierno Federal
SALUD

Cofepris
Comisión Federal para el Protección de Riesgos Alimentarios

10 AÑOS
Protegiendo tu salud

- In 1997...

	Deaths
Developing countries	17.2 mills
Undeveloped countries	120 thousand

(INSP. Urban Survey of Food and Nutrition in the Metropolitan Area of Mexico City. 2002).

11

Gobierno Federal
SALUD

Cofepris
Comisión Federal para el Protección de Riesgos Alimentarios

10 AÑOS
Protegiendo tu salud

- Some age ranges are specially susceptible. In 2000, the prevalence on children <5 years was 11.5% and in 2006 increased to 12.9% in Mexico

(INSP. Health National Survey (HNS). 2006).

12

Gobierno Federal SALUD

Cofepris
Comisión Federal para el Protección de los Riesgos Sanitarios

10 AÑOS
Protegiendo tu salud

- In the same Mexican survey (HNS, 2006), 11.7% of children under five years said have diarrhea (on the two weeks previous), from which almost half (49.8%) went to the doctor. By this way, the under-registry can be calculated as 1:1.

13

Gobierno Federal SALUD

Cofepris
Comisión Federal para el Protección de los Riesgos Sanitarios

10 AÑOS
Protegiendo tu salud

Illness	Etiological agent	Mechanism of Transmission	Reported on Unique Mexican Information System for Epidemiological Surveillance
Typhoid and paratyphoid	<i>Salmonella typhimurium / Salmonella enteritidis</i>	Raw (meat and human feces) Raw (eggs, milk, water, meat, poultry, fruits and vegetables)	Reported
Shigellosis	<i>Shigella dysenteriae</i>	Hand to mouth Fecal contact Contaminated food (with or water)	Reported
Food poisoning	<i>Staphylococcus aureus</i>	Food (food handlers) Milk products Meat products (cooked, inadequately)	Reported
Brucellosis	<i>Brucella melitensis</i>	Raw milk Unpasteurized cheese Tissues of infected animals	Reported
Amebiasis	<i>Entamoeba histolytica</i>	Water and feces contaminated with amebae cysts eggs Hand to mouth	Reported
Giardiasis	<i>Giardia lamblia</i>	Hand-mouth (person to person) Contaminated food and water	Reported
Cholera	<i>Vibrio cholerae / Vibrio parahaemolyticus</i>	Ingestion of seafood (raw) Contaminated food and water	Reported

1

Gobierno Federal SALUD

Cofepris
Comisión Federal para el Protección de los Riesgos Sanitarios

10 AÑOS
Protegiendo tu salud

Diseases transmitted by food and water

Illness	Water	Food
Cholera	90%	10%
Giardiasis	90%	10%
Intestinal Amebiasis	80%	20%
Shigellosis	80%	20%
Other Intestinales Infections ^a	70%	30%
Typhoid fever (Salmonellosis)	20%	80%
By protozoos	10%	90%
Paratyphoid and others salmonellosis	5%	95%
Bacterial food poisoning	0%	100%

^a Of these diseases, 50% may be caused by rotavirus and the other half by E coli

15

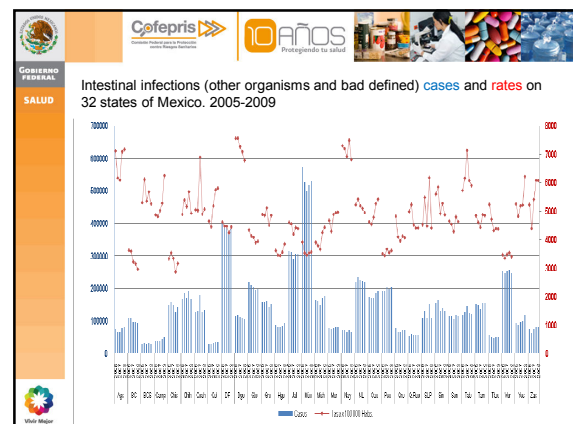
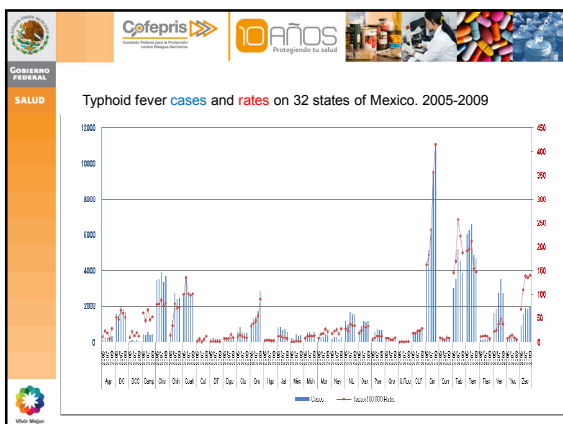
Gobierno Federal SALUD

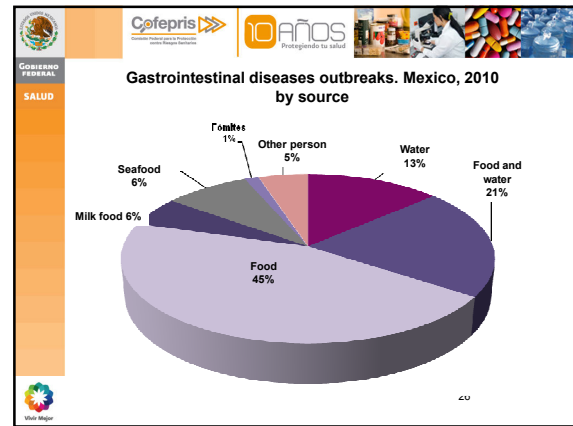
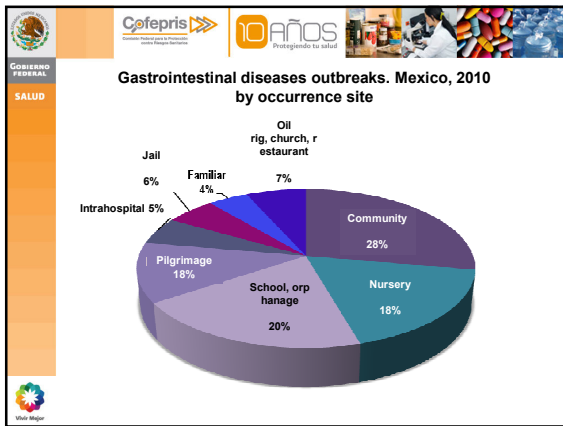
Cofepris
Comisión Federal para el Protección de los Riesgos Sanitarios

10 AÑOS
Protegiendo tu salud

Unique Mexican Information System for Epidemiological Surveillance

16





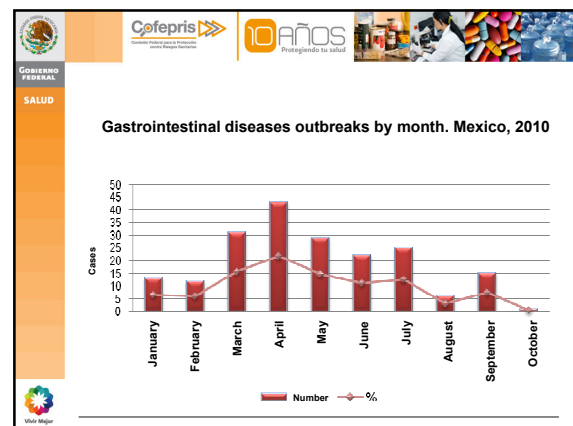
Source	Times	%
Food*	128	72
Water & food	27	15
Water**	22	12
Total	177	100

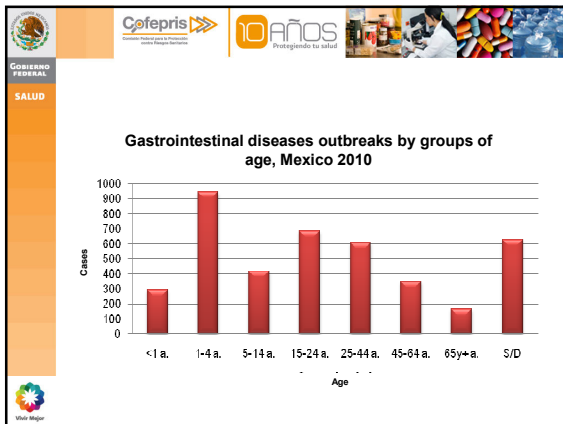
* Served in party, buy in: street snack, market, community, scholar cooperative, restaurant, inadequate sanitary food management, in schools, hospitals and jails
 ** From: water tank, spring, stream, treadmill, well, water supply network. Without chlorination and improperly stored.

Source	Times	%
Chicken*	10	50
Meat**	6	30
Pork***	2	20
Lamb	2	20
Total	20	100

* With: rice, nugglets, roast, etc.
 ** With sauce, taco on street snack
 *** Loín

Source	Times	%
Other person (hands, nails)	6	38
Fruit water (jamaica, watermelon)	4	25
Fomites (kitchen utensils)	3	19
Milk formula	2	13
Expired canned juice	1	6
Total	16	100





Mexican regulations have two major objectives:

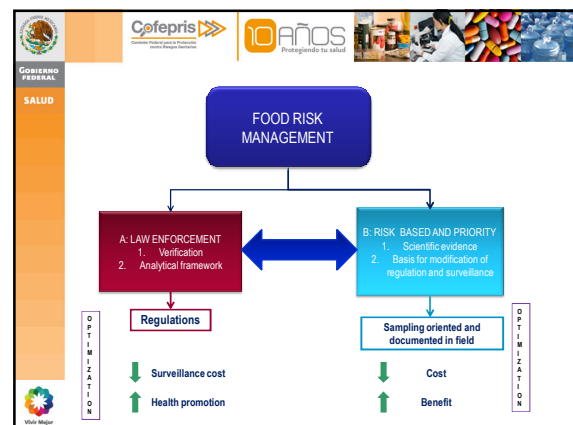
- rules for regulated agents;
- direct protection to the population

Regulations are update as:

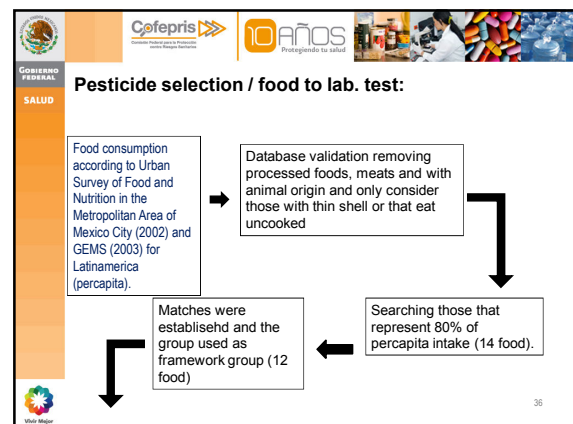
- New risk assessed
- New analytical methodologies

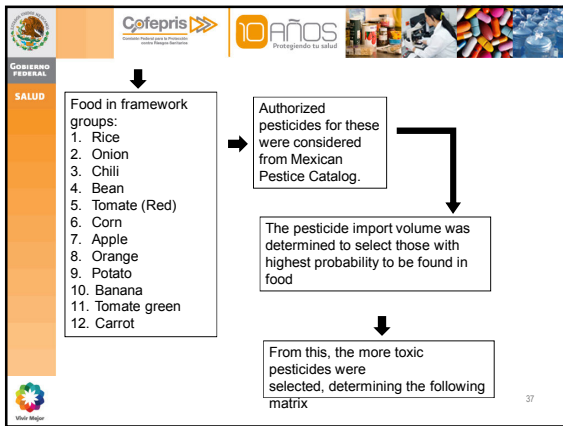
Current epidemiological evidence is used to:

- ✓ Support the health impact assessment of different exposures
- ✓ It can be applied to a range of actions, policies or projects on various health determinants (risk management).



Pesticide Surveillance Program, Mexico 2011





Culture/ Pesticide	TOXICITY LEVEL				
	1	2	3	4	5
1 Corn	carbofuran	paraquat	clorpirifos	acetoclor	2,4 d
2 Banana	paraquat	ametrina	propiconazol	diazinon	glifosato
3 Rice	carbofuran	clorpirifos	deltametrina	tiobencarb	glifosato
4 Tomate (red)	fenpropratin	oxamil	paraquat	dimetoato	clethodim
5 Potato	paraquat	clethodim	cymoxanil	glifosato	setoxidim
6 Bean	aldicarb	paraquat	clorpirifos	clethodim	glifosato
7 Orange	paraquat	clorpirifos etil	dimetoato	diazinon	glifosato
8 Tomate (green)	metamidofos	endosulfan	clethodim	permetrina	diazinon
9 Onion	paraquat	diazinon	glifosato	setoxidim	clorotalonil
10 Apple	oxamil	paraquat	vamidoion	fomet	dimetoato
11 Carrot	paraquat	linuron	glifosato	clorotalonil	malation
12 Chili	carbofuran	oxamil	paraquat	clorpirifos etil	clethodim

	Corn	Banana	Rice	Potato	Bean	Orange	Tomate (green)	Onion	Apple	Carrot	Chili	Toxicity level	Import	Disponibility
ORGANOCLORADOS														
Proclorazoxiprol												3		X
FOSFORORGANICOS														
Chlorpirifos												1		X
Metamidofos	X		X									4		X
Clorpirifos												3		X
Diazinon												4		X
Glifosato												4		X
AMINOCARBONICOS														
Metidatol												4		X
PIRIMIDINICOS														
Carbofuran	X											1		X
Endosulfan												1		X
Trietanolamin												1		X
TRIFLUOROMETANOS														
Fenpropratin												1		X
ametrina												1		X
ORGANOFOSFOROS														
Paraquat												1		X
HERBICIDAS														
Clorpirifos	X											1		X
Glifosato												1		X
Ametrina												1		X
Trietanolamin												1		X
OTROS														
Carbofuran	X											1		X
OTROS														
Propiconazol												1		X
Clorotalonil												1		X
Malation												1		X
Setoxidim												1		X
Permetrina												1		X
Clorpirifos etil												1		X
Dimetoato												1		X
Acetoclor												1		X
2,4 d												1		X

Rules to evaluate pesticide monitoring

1. **Health risk:** authorized, prohibited y/o restricted.
2. Presence in basic consumption products.
3. Methodology: Multiresidues pesticide analysis.
4. Trained personnel on pesticide analysis.
5. Instalations and equipment.
6. State laboratories participation

Commission of Evidence and Risk Management

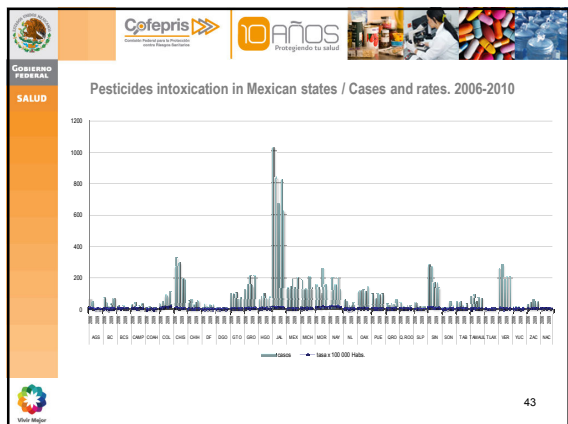
Laboratories

Proposal

1. Selection of pesticides to monitoring: organophosphate pesticide.
2. Pesticide analysis by matrix: seeds and grains.
3. Pesticide analysis by geographic zone.
4. Health state laboratories participation
5. Train to state laboratories in methodologies according to each matrix.

Pesticides Acute Intoxications in Mexico

2006-2010



43

Thank you

Matiana Ramírez Aguilar DrSc
Jose Jesus Herrera Bazan MSc
Commission of Evidence and Risk Management

(COFEPRIS)

mramireza@cofepris.gob.mx
jjherrera@cofepris.gob.mx

www.cofepris.gob.mx

44