

OFFICIAL PROGRAMS FOR THE CONTROL OF TOXIC RESIDUES IN PRODUCTS AND BY-PRODUCTS FROM ANIMAL ORIGIN

*Flores Hernández O. and *Fragoso Sánchez H.*

*Centro Nacional de Servicios de Constatación en Salud Animal,
SENASICA, SAGARPA. Carretera federal a Cuautla Km. 11.5,
Jiutepec, Morelos, CP 62550, México
E-mail: cenapa@infosel.net.mx*

Guarantee safety foods for the population is one the main reasons of world concern and one of the biggest responsibilities for the governments with their countries inhabitants. As consumer's health is directly influenced by the aspects of food safety there is a particular interest related to the activities of commercial exchange between countries. The imports and exports of products and nutrimental by-products should comply higher quality standards, this has caused intensification of actions to regulate the acceptable maximum concentrations of chemical substances and patogen agents in foods.

Inside this frame, the Secretaria de Agricultura, Ganaderia, Desarrollo Rural, Pesca y Alimentación, SAGARPA (Ministry of Agriculture, Livestock, Rural Development, Fishery and Feeding), is responsible of the sureveillance over food safety in the aspects that impact directly to the agricultural practices and the exchange of food products among countries.

The Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria, SENASICA (National Service of Sanitary, Safety and Agricultural food Quality) as part of SAGRAPA has designed programs that enclose official and technical standards of quality, these programas look after the presence of toxic residues and pollution in products from animal origin. There are included meat and meat products from bovine, horses, swine and poultryyirds; milk; egg; honey and fisheries and sea food, by means of food sampling and monitoring for national consumption, as well as those for of export purposes.

SENASICA, through the Dirección General de Salud Animal, DGSA (General Direction for Animal Health (DGSA), applies in a permanent manner the National Program for the Control of Toxic Residues in Products and by-products of Animal Origin, its objectives are:

GENERAL OBJECTIVES

- Cooperation to improve the hygienic quality of products and by-products from animal origin, promoting better handling conditions and processing of the products, this with the participation of other federal, state and municipal agencies, as well as producers, industry and agents of the productive chain and comercial trades.
- To contribute to the certification of quality of meat in Mexico.

SPECIFIC OBJECTIVES

- To diagnose, prevent and control the toxic, biological residues and pollution in meat and meat products.

- To avoid the risks in human health caused by the presence of toxic residues in food from cattle.
- To have information available to allow identify the regional problems of pollution in foods, to guide to the establishment of inductive measures that lead to the elimination of the factors or practices which originate this problems.
- To cooperate in the control of use of chemical, pharmaceutical, biological and nutrimental products in animals.
- To contribute to the surveillance and reporting of animal diseases.
- To promote research lines on the use of innocuous medications, growth promotants, pesticides.

CHARACTERISTIC OF THE PROGRAM

To fulfill the program it has 2 systems:

- 1) Inspection of products in charge of the DGSA which responsibility is to approve, coordinate, watch over and to offer sanitary support for the inspection and control of the foods considered in the program. About concerns for food imports, the functions of the inspection system is executed by the General Direction for Sanitary Inspection in Animal and Plants, through Offices of Inspection for Agricultural Sanitary and Sites of Animal sanitary Inspection.
- 2) Detection and evaluation of Toxic Residues in the different products and by-products for human consumption, which is carried out by the DGSA, through the National Center of Services of Verification in Animal Health and by approved laboratories authorized by SAGARPA.

LABORATORIES

The Official Laboratory for the analysis of the samples is the Centro Nacional de Servicios de Constatación en Salud Animal (National Center of Services in Verification of Animal Health), located in the Km 11.5 of the Federal Road Cuernavaca–Cuautla, Jiutepec 62550, Morelos. Likewise the DGSA has a system for the approval of laboratories, in the frame of the Metrologic, Regulatory and Animal Sanitary Laws. These laboratories operate as auxiliar for the official laboratory and also run official analysis.

MONITORING AND SURVEILLANCE

For the identification of possible residues of toxic substances it is carried out an unbiased sampling or monitoring which is applied in order to have get annual information of affected areas and presence of products above the limit: Maximum Residues Limits (MRL). When necessary a directed sampling is applied or if surveillance is focused to samples taking toward those explotations or areas where the presence of toxic residuals is identified.

SAMPLING

SAGARPA designs a schedule a calendar to have samples annually for the detection of toxic residues, in which is indicated the participants, general conditions for the sampling, number and type of samples, as well as dates for the collection. The number of samples during the year for each

animal species, products, by-products, based on the specifications and approaches settled down by the Codex Alimentarius.

PROCEDURES OF SAMPLES OBTAINING

The collection procedures, packing, registration of data, required documentation and shipment of cases to the official, approved or authorized laboratories, they are established in a procedure approved by the SAGARPA and are direct responsibility of each one of the participant establishments, through the official personnel.

In the case of the imported products it is considered that the countries exporters of meat and meat products, have reliable programs for detection of toxic residues and are audited by Mexican authorities. About these products the official personnel performs monitoring based on aleatory taking of samples from each one of the lots of products to enter to the country, to be subjected to analysis of one of the chemical groups regulated by the Program, which is determined in an alternate and sequential way, however when the inspector suspects of violatory levels of residues in the meat, viscera or meat products, he should request to the laboratory to make the analysis of the entire compounds considered onf the Program.

RESIDUES CONSIDERED IN THE PROGRAM

At the moment the National Program considers the analysis of 4 tissues: liver, kidney, muscle and fat, for detection of 56 chemical compounds, among those that are:

Antibiotics: Penicilline, Eritromycine, Streptomicyne, Neomicyine, Tetracycline and Chloramphenicol.

Sulfonamydes: Sulfadimetoxyine, Sulfapirydine, Sulfametazine and Sulfatiazol.

Heavy metals: Cadmium, Lead, Copper, Arsenic and Mercury.

Organophosphates: Diazinon, Phorate, Di-syston, Malathion, Fenitrothion, Parathion, Ethyl Parathion, Ethion, Trithion, Ronnel, Chlorpyrifos, Coumaphos, Chlorfenvinfos, Diclorvos and Fenthion.

Chlorinated Hydrocarbons: Alfa-BHC, Lindane, Heptachlor, Heptachlor Epoxide, Aldrin, Dieldrin, Endrin, DDT, Mirex, DDE.

Polichlorinated Biphenyls: Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260

Ivermectine: Ivermectine B1a.

Bencimidazoles: Albendazole, Febendazole, Benomyl, Oxfendazol, Tiabendazol, Cambendazol and Mebendazol.

Anabolic Steroids: Diethystilbestrol, Zeranol and Taleranol. Recently, Clenbuterol has been included.

CORRECTIVE ACTIONS AND SURVEILLANCE

These are applied in coordinated efforts among the DGSA, the Delegation of the SAGARPA in the Federative Entities and the State Governments, considering diverse strategies, such as the setting in March of directed samplings, programs of technical assistance for handling and specific control of residues and pollution as well as the appropriate use of chemical products.

In imported products, the procedure includes to inform to all the verification points, the name, approval number and location of the plant of origin of the product. The following shipment of the Plant detected with violatory levels of residues will be retained and sampled in the entrance point, until having the results of analysys from the Official Laboratory and in case of findings for

second time in high levels of toxic residues toxic superiors, its authorization as approved Plant to export meat to Mexico.

PERSPECTIVES OF THE PROGRAM

- Strengthening of the control programs and quality assurance system in the different points according to international requirements.
- Development of technical experts and specialized personnel.
- Improvement of the capability verification services by means of the authorization of laboratories, permanent assistance, as well as the enforcement of the official laboratory.
- Modernization of the surveillance system as a tool for the design of political, strategies and sanitary programs, directed to Public Health and to animal species.
- Promote of research programs and training by means of the coordination between the SENASICA and research and training institutes.
- Strengthen the bonding for collaboration and technical exchange regarding to monitoring and control of toxic residues, with other countries.
- Invigoration of the cooperation with international systems of surveillance as the IEO, PHO, OIRSA, IICA and other national and international organizations involved in the animal sanitary and food safety.