A Framework of Routine Monitoring program for Agricultural products by Ministry of Agriculture and its design

—— pesticide residue in crop products

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Outlines

- Origin of routine monitoring
- Main contents of monitoring
- Implementation and management of plan
Background 1: Development steps of Quality and Safety of Agricultural Products in China

- **From 1949 to 1978**: Ensure security in quantity.
- **From 1978 to 1992**: Started to be concerned about quality safety.
- **From 1992 to 2001**: Equal attention to quantity and quality.
- **From 2001 to 2006**: Comprehensive attention to quality and safety.
- **From 2006 ~ now**: Issued the Law on quality and safety of Agricultural Products.

- **Launched** “Plan of Action on Agri-safe Food nationwide”.
- **Supervision of quality & safety by law**.
Background 2: “Plan of Action on Agri-safe Food Nationwide”

In April, 2001, the Ministry of Agriculture launched the “Plan of Action on Agri-safe Food Nationwide with approval of the State Council.

Reasons of the plan:
- The quantity shortage of agricultural products was solved. However, the quality problems are relatively serious.
- Due to the acceleration of industrialization and urbanization, the situation of producing area pollution is more serious.
- The problem of pollution in agriculture itself is neglected in pursuit of quantity.
- With the improvement of economic globalization and trade liberalization, more attention is paid on quality and safety of agricultural products.
- The export of agricultural products are frequently stumbled because of quality and safety problems since China participated into WTO in 2001.
Background 2: “Plan of Action on Agri-safe Food Nationwide ”

Working ideas

- With the “vegetable basket” products as a breakthrough, to solve the problems of highly toxic pesticides, illegal use of veterinary drugs and excessive residues which are concerned about by people;
- With the management of three segments including agricultural inputs, agricultural production and market access as key points, to promote the entire processing supervision from farmland to market;
- With the routine monitoring as an approach, to enhance the quality and safety awareness and to implement managing responsibility in various regions;
- With the promotion of agricultural standardization as a carrier, to improve the production and management levels for agricultural quality and safety.
The origin and development of routine monitoring work

Plan of Action on Agri-safe Food Nationwide


Designated monitoring for quality and safety of agri-products by MOA

2. Monitoring scope
   • Vegetables: five cities (pilot cities and Shouguang city in Shandong), 16 kinds of pesticides;
   • Pork liver and swine urine: 4 pilot cities, residue of clenbuterol hydrochloride

Routine monitoring for quality and safety of agri-products

1. MOA routine monitoring scope was extended continuously.
   • Amount of monitoring cities
   • Category of monitoring products
   • Monitoring parameters
2. Monitoring for quality and safety of agri-products step in legal management. Routine monitoring work are started in various regions.
Legislation for monitoring quality and safety of agricultural products

- **Law of the People's Republic of China on Quality and Safety of Agricultural Products** (issued on April 29th, 2006 and implemented on November 1st.)
  - Article 34: The State establishes a system for monitoring the quality and safety of agricultural products. The administrative departments for agriculture under the people's governments at or above the county level shall draw up plans for monitoring the quality and safety of agricultural products and organize implementation of the plans, and conduct regular supervision and make spot checks of the agricultural products under production or on the market.

- **The administrative measures on monitoring agri-product quality and safety** (made by the Ministry of Agriculture, issued on August 14, 2012 and implemented on October 1.)
The main types of monitoring for the agri-products quality and safety

- **Risk monitoring**
  - Monitoring and analysis evaluation of the adverse factor on the quality and safety of agricultural products
  - It aims to have a good command of quality and safety of agricultural products dynamically and to carry out risk assessment of quality and safety of agricultural products timely.
  - It must be planned, be focused, be sustained and be systematic.

- **Supervision and spot checking**
  - Sampling for the purpose of law enforcement
  - It usually focuses on serious problems of the quality and safety of products and locations with relatively concentrated problems.
  - It is carried out at regular or irregular intervals with random sampling.
The main types of monitoring for the agri-products quality and safety

- **Routine monitoring**
  - **Risk monitoring**
  - **Special monitoring**

- **Routine monitoring for quality and safety of agri-products by the MOA** (state-level, organized and implemented by the MOA)
  - Provincial level, prefecture level, county-level
  - Routine monitoring for quality and safety of agri-products

- **Supervision and spot check**

It is the supplement and extension of routine monitoring. -- the supplement to products or parameters
Outlines

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- Implementation and management of plan
## The main contents of monitoring plan

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Monitoring sites and time

Monitoring sites

- Monitoring sites are selected in the major large and medium-size cities with the total amount of about 150 in China. The city fixed as monitoring site is invariable in one year.
  - Provincial capital cities, municipalities directly under the central government and municipalities with independent planning status are compulsory monitoring cities.
  - Except for several provinces, two prefecture-level cities in each province (autonomous region) are selected as monitoring sites for each type of products.

Monitoring time

- Once per quarter, a total of four times in one year
- For tea, monitoring time is only in second and fourth quarter, a total of twice in one year.
Monitoring varieties

- **Crop products**
  - Vegetables, edible mushrooms, fruits and tea

- **Animal products**
  - Pork, beef, lamb, poultry
  - Pork liver and eggs.

- **Fishery products**
  - Local mass breeding fishery products
Sampling location

- Vegetables and edible mushrooms
  - Production base, wholesale market (Farmer's market as supplement), supermarket

- Fruits
  - Wholesale market, farmer's market, supermarket

- Tea
  - Wholesale market, supermarket (including specialty store)

- Animal products
  - Wholesale market, farmer's market, slaughter house and supermarket

- Fishery products
  - Wholesale market (including transport cart and storage pond), farmer's market and supermarket.
Vegetable production base

Wholesale market

Farmer's market

Supermarket
The general situation of routine monitoring in 2014- crop products

**Vegetables and edible mushrooms:** acceptability is 96.2%.

Samples including 87 varieties with total amount of 18434 are collected from 89 cities in 31 provinces.

For vegetables, 58 kinds of pesticides residues are detected. For edible mushrooms (fresh), 39 kinds of pesticides residues and fluorescent brightener are examined.

**Fruits:** acceptability is 98.9%

4049 fruits samples involving strawberry, banana, grape, peach, watermelon, apple, pear, orange and jujube are collected from 88 cities in 31 provinces. 58 kinds of pesticides residues are detected.

**Tea:** acceptability is 96.3%

711 tea samples including green tea and oolong tea are obtained form 56 cities in 24 provinces. 11 kinds of pesticides residues are determined.
Outlines

- Origin of routine monitoring
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- Implementation and management plan
Implementation and management of plan

Supervision Bureau of Agricultural product Quality and Safety, Ministry of Agriculture

Organization and management

Center for Research on Agro-product Quality Standards, Ministry of Agriculture (Technology focal points)

Vegetable Quality Supervision and Inspection Center, Ministry of Agriculture (Beijing)
- vegetables, edible mushroom, fruits,
- 37 testing agencies at ministerial level
  - Sampling and testing
Tea Quality Supervision and Inspection Center, Ministry of Agriculture
- Tea
- 37 testing agencies at ministerial level
  - Sampling and testing
Animal Product Quality Supervision and Inspection Center, Ministry of Agriculture
- Animal products
- 32 testing agencies at ministerial level
  - Sampling and testing
Fishery Products Quality Supervision and Inspection Center, Ministry of Agriculture (Shanghai)
- Fishery products
- 23 testing agencies at ministerial level
  - Sampling and testing
Implementation and management of plan

Technical leading department

The leading unit: Agricultural products quality standard research center of the ministry of agriculture

Crop products

- Vegetables, edible mushrooms and fruits: Vegetable quality supervision and inspection center of the Ministry of Agriculture (Beijing)
- Tea: tea quality supervision and inspection center of the Ministry of Agriculture
- Animal products: animal product quality supervision and inspection center of the Ministry of Agriculture

Fishery products: fishery products quality supervision and inspection center of the Ministry of Agriculture (Shanghai)

The selection of undertaking department

The undertaking departments are selected by proficiency testing and results of spot check the recheck among 277 national- and agricultural ministerial-level Quality and Inspection Centers
The implementation and management of plan

- Submitting the summarized results in time

  [Diagram: undertaking department → technical supporting department → leading department]

- Establishing mechanism of results consultation

  In order to promote the data evaluation, analysis of situation and information communication of monitoring result, consultation system of routine monitoring has been established by the Ministry of Agriculture since 2009.

  The relevant divisions of the Ministry of Agriculture, the Bureau of Agriculture in Province

- Establishing monitoring information platform

  The national monitoring information platform of quality and safety of agricultural products
The functional orientation of monitoring information platform

- Rapid data acquisition
- Statistical summary and intelligent analysis
- Risk analysis and early warning
- Hierarchical query and application
- Good extensibility
Functional orientation

Five types of user

- Provincial administrative Department
- Industrial technical supporting department
- Testing organizations
- Standard center
- Supervision bureau

Monitoring information platform
The basic framework of monitoring information platform

The monitoring information platform of quality and safety of agricultural products

(1) Network reporting
(2) Client end software
Data transmission system

Database system

The information of quality and safety

Monitoring and analyzing system
Risk assessment system
Risk early warning system

Supporting websites
The basic framework of monitoring information platform

Oracle Database

Shared storage SAN

Oracle Database

Application Server Tomcat

Load Balancing Server

Mail Server

Firewall

Inspector from Ministerial department

Inspector from Provincial department

Inspector from Prefectural department

The public

Internal user
The goal of monitoring information platform construction

To realize the integration management of monitoring data and information of quality and safety of agricultural products
Thank You for Your Attention!

Institute of Quality Standard & Testing Technology for Agro-Products
Chinese Academy of Agricultural Sciences