

Food Safety: Solving Pesticide-Related Problems**Definition:**

(1) A Good Agricultural Practice (GAP) refers to universal agricultural practice standards covering good agricultural practices in every stage of production at farm level and at small-scale farmer level.

(2) In this context, agrochemicals specifically refer to chemical pesticides or plant protection substances.

Situation:

1. Thailand is an agricultural country because over 38 percent of its population embraces farming as their vocation¹, and agriculture is a production sector which is intertwined with ways of life, livelihood and culture of the majority of Thai people. Therefore, formulation of agriculture-related policies and laws, especially reform of the chemical system through efficient control of chemical pesticide registration, must be transparent and stringent, placing emphasis on the participatory process of stakeholders and promotion of quality management of good agricultural practices for primary plants. The objective to provide safe raw materials for cooking, this must be done urgently. This is because Thailand is the world's important food production source that can produce a variety of foods. Not only is food production sufficient for domestic consumption, but Thailand also exports its food products to other countries. Thailand is regarded as the world's key exporter of agricultural products with an average growth of 9 percent per annum, and agricultural exports makes up around 23 percent of its total export value.

2. Even though agrochemicals are beneficial to the control of the spread of plant diseases and insect pests to a certain degree, these chemicals are inherently toxic. Coupled with improper use of chemicals by farmers, lack of strict policies and legal measures, and irresponsible sales promotion, agrochemicals adversely affect the health of farmers and consumers, environment and society, and bring about enormous economic losses, both short term and long term. Reportedly, agrochemical use has risen every year because they are production factors used by most farmers. Based on the volume of active ingredients, in 2011 Thailand imported 87,619 tons of agrochemicals, valued at 22,044 million baht, broken down into 10,671, 6,980, 67,608, and 2,360 tons of active ingredients for insecticide, fungicide, herbicide and other types of pesticide respectively.² When comparing the proportion between chemical farming and non-chemical or organic farming, it was found that the rate of local farmers using chemicals as a production factor is as high as 99 percent, while non-chemical or organic farming is less than one percent.

3. Thailand is a member of the World Trade Organization (WTO), which in 1994 put into effect the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) prescribing rules to be complied by various countries with respect to food standards and safety and control of imported agricultural products and foods in order to prevent importation of contaminated products. Moreover, a lack of food safety and spread of mad cow disease and melamine-contaminated milk among others prompt traders to build confidence in the food safety system by applying the risk management system from "from farm to table". Moreover, at the farm level, good farming practices also adhere to the principles and guidelines issued by the Food

¹ Office of Agricultural Economics, 2005

² Office of Plant Control and Agricultural Materials, 2012 (go to http://www.doa.go.th/ard/images/stories/stat/stat_411.pdf)

and Agriculture Organization (FAO) and international food standards (Codex) which everyone can adopt as quality management approaches to achieve Good Agricultural Practices (GAP). Furthermore, there are also international agreements directly related to these issues, such as the Rotterdam Convention concerning advance notification of chemical data of hazardous substances and pesticides for international trade, and the Stockholm Convention on Persistent Organic Pollutants.

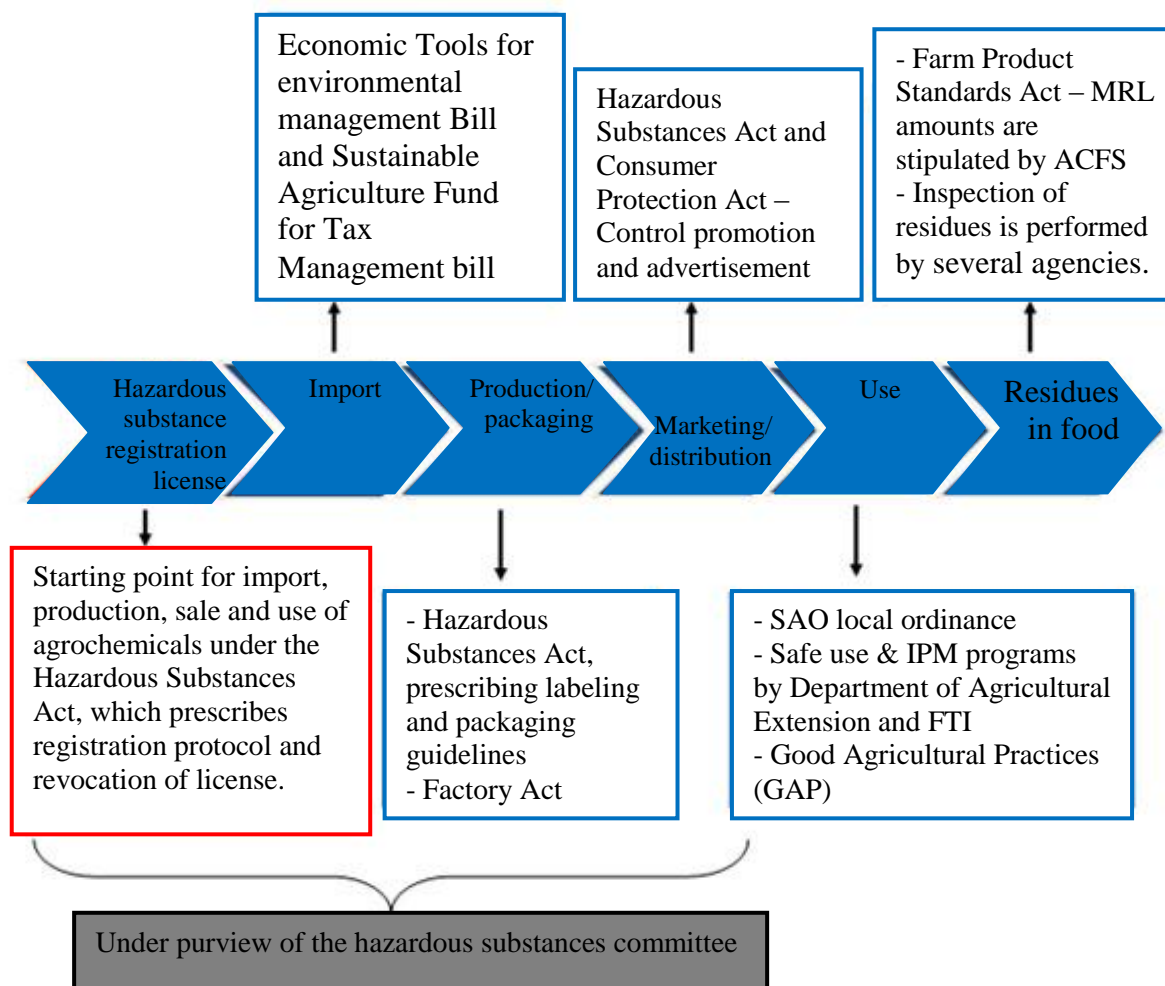
Significance of the problems:

4. The trend of agrochemical import in Thailand has been on the rise every year. Among them are chemical pesticides slapped with a total ban on production, use and registration by both western and eastern developed countries and neighboring countries in the ASEAN. These pesticides include 1) Carbofuran – banned in the United States, Canada, China, Jamaica, New Zealand and Japan; 2) Methomyl – banned in the United Kingdom, Germany, Finland, Cambodia, Singapore, Malaysia, Laos and India (some formulas); 3) Dicrotophos – banned in European Union, Taiwan, India, Pakistan, Bangladesh, Canada, Australia, New Zealand, Singapore, Japan, Malaysia, the Philippines and Laos; and 4) EPN – banned in the United States, European Union, Taiwan, Cambodia, Myanmar, Indonesia, India, Australia, New Zealand, Vietnam, Malaysia, Singapore, the Philippines, Bangladesh and Laos. All these four chemicals have been proven scientifically and clinically beyond any doubt that they have severe health effects.³

5. The agrochemical registration process is ineffective. In principle, before pesticides can be imported for sale in the market, an application must be filed to register them as hazardous agricultural substance (Chart 1). According to the Department of Agriculture's Notification on Stipulation of Detailed Guidelines and Methods for Registration, Issuance and Renewal of Hazardous Substance Registration License under the Responsibility by the Department of Agriculture B.E. 2552 (2009), Article 4 states that hazardous substance registration involves three stages – preliminary trial to obtain information on their efficacy and acute and persistent toxicity; temporary use to demonstrate their application and to obtain information on medium-term and chronic toxicity; and final evaluation before registering them as hazardous substances to obtain information on their efficacy and impacts on human and environmental safety as well as chronic toxicity in laboratory animals for a period of two years. All these four chemical pesticides have been proven beyond any doubt that they have severe health effects. Under the Hazardous Substances Act B.E. 2535 (1992), Section 38 prohibits officials from endorsing registration of any hazardous substance which, after use, may be harmful to humans, animals, plants, property or environment, where no conventional method can reasonably protect them. While sale of chemical pesticides imported before 22 August 2011, including four chemical pesticides mentioned above, is allowed to continue for another two years, such permission does not only accord with the intent of the law to protect public well-being, but it may cause Thailand to lose international markets of agricultural products when agricultural products contaminated with these pesticides are rejected.

³ Detailed information on health, environment and economic impacts of four chemical pesticides in <http://thaipan.org/>

Chart 1 Routes and laws on the control of chemical pesticides, starting from applying for registration of hazardous substance used in agriculture, post-registration importation, production and packaging, marketing and distribution, use in farmer's field and residues in food



6. According to the Hazardous Substances Act (Issue 3) B.E. 2551 (2008), Section 4 stipulates that there should be representatives of public interest organizations with experience in the field of health protection, consumer protection, sustainable agriculture, management of local hazardous substance issues or environment to serve as qualified members of the hazardous substance committee. However, this provision may contradict the intent of the law which fosters participatory process of the civil society. Since stakeholders are involved in the hazardous substance committee in the capacity of representatives of public interest organizations, the committee's review may lack good governance and transparency and may disregard protection of the well-being of the public and society as well as the environment, resulting in conflict of interest that may lead to health loss of the general public.

7. The use of chemical pesticides for pest control and crop protection may leave residues in fruits and vegetables and may be harmful to the health of consumers and accumulate in the environment. In developed countries like Japan or the European Union, there have been movements to advocate and pass laws that protect the well-being of the public and consumers from adverse effects and to ensure comprehensiveness and supplement them with effective measures. Thailand has in place agricultural product and food standards with respect to toxic

residues, that is, Maximum Residue Limit (MRL) which is a maximum allowable value or amount of toxic residue in contaminated agricultural products, including fruits and vegetables. These values are determined by the Agricultural Commodity and Food Standards Committee. However, presently they are not mandatory standards and there is still some confusing information about the degree of health effects. This is because there are two extreme views. There is a notion that there is no need to pay attention to or worry about improper use of agrochemicals by farmers or when contaminants are found in excess of standards. It is argued that these values are prescribed only for commercial purposes and good agricultural practices also allow agrochemical use, while this issue concerns only fruits and vegetables. Nevertheless, it is discerned that contamination problems in produce are found regularly, and there is confusing information. It is important, therefore, to communicate knowledge to the frontline staff and operators concerned as well as consumers.

8. Although Thailand has faced food safety problems for a long time, a food alert center has not yet been set up to promptly convey messages to the general public. Even though the Food Alert System of Thailand (FAST), based on the Rapid Alert System for Food and Feed (RASFF), was set up in 2007, it only sent alert messages to different agencies in the network for information or request cooperation in efforts to resolve and prevent incidents faced by the regulator. Moreover, there is still a lack of public communication to raise awareness and suggest consumption alternatives to avoid the alerted food on sale in the market. Importantly, FAST still lacks integration with the social sectors concerned, particularly farmers and consumers.

9. Even though the government announced implementation of relevant policies and laws pertaining to chemical use, these laws, such as the Hazardous Substances Act B.E. 2535 (1992), fall under the purview of several ministries, particularly the Ministry of Agriculture and Cooperatives, Ministry of Public Health, Ministry of Industry and Ministry of Defense. Moreover, one type of agrochemical may be used in other non-agricultural activities. As a result, the control or ban of agricultural-related use cannot be implemented extensively and efficiently. For instance, in the case of lannate which is effective for termite control in home use, farmers use this chemical to kill insects in their fields, and in the case of glyphosate herbicide, it has more than 1,000 trade names that cause confusion among farmers and make them vulnerable to unsafe chemical use.

Adverse effects:

10. Health effects from agrochemical use are very severe. Consequently, government agencies responsible for agricultural product standards, particularly the National Bureau of Agricultural Commodity and Food Standards, have issued quality management standards for Good Agricultural Practices (GAP) for each produce, which is regarded as voluntary standards. However, when exported produce was found to be unsafe because it was contaminated with agrochemical residues, the Department of Agriculture issued a notification requiring the exporter to show a certificate to affirm that this produce originated from certified plots of land. Meanwhile, Thai consumers still continue to face a very high risk of adverse health effects from consumption of fruits and vegetables tainted with agrochemical residues. Based on a survey of seven popular vegetables among consumers, i.e. cabbage, Chinese kale, string bean, Chinese cabbage, morning glory, coriander and bird chilli sold in large department stores, traditional fresh food markets and mobile vegetable trucks in Bangkok Metropolitan region, it was found that pesticide residues exceed EU standards as much as 40 percent. Among them are carbofuran, methomyl, dicotophos and EPN.⁴ In addition, the survey findings of the Food and Drug

⁴ Read additional information of the vegetable survey in Bangkok Metropolitan report in <http://www.thaipan.org/>

Administration also revealed that out of 359 samples of fresh vegetables sold in Bangkok Metropolitan region, highly toxic pesticides were found in 51.8 and 63.7 percent of vegetables with and without a “chemical-free” sign respectively. Moreover, blood test results of farmers also showed that 40 percent of them had risky and unsafe levels of pesticides in their blood. Similarly, blood tests conducted by the Bureau of Occupational and Environmental Diseases showed that out of 563,353 farmers, as much as 16.35 percent or 89,926 persons had unsafe levels of pesticides and faced the risk of pesticide toxicity stemming from use of chemical pesticides, and the trend has risen significantly since then. In 2011, a random examination found that 38 percent of tested farmers faced such health risks.⁵

11. In Thailand, environmental impacts from agrochemical use have reached a dangerous level because production and use of hazardous and highly toxic agrochemicals have left persistent residues in the environment for a long time. According to the monitoring conducted by the Pollution Control Department to study accumulation of agrochemical residues in the Fang river basin during 2002-2004, residues were found but their amounts did not exceed standards. Moreover, the Department of Medical Sciences, the Ministry of Public Health, reported the findings of agrochemical residues in surface water in 2004 that endosulfan residues were found in water samples taken from the Chao Phraya River and sources of water supply in Bangkok Metropolitan region. Furthermore, in 2005 the Department of Environmental Quality Promotion reported the findings of agrochemicals of organophosphate and carbamate groups in soil, air and surface water samples around the Fang river basin, even though the concentrations of all identified chemicals did not exceed the standards.

Relevant legal measures and policies:

12. Even though the public sector has consistently announced implementation of chemical management policies, programs, laws and regulations. For instance 1) Pesticide use policy and master plan for the year 2002-2006 which adopted three-pronged strategies, including fully integrated control and management of hazardous substances used in agriculture, research and development focusing on impact analysis and pesticide-related knowledge and technology transfer; 2) Agriculture product and food safety standards strategies for the year 2010-2013 which actively encourage producers to engage in the safety standard system; 4) the Third National Chemical Management Strategic Plan (2007-2011) which placed emphasis on development of a chemical management system, mitigation of risks and hazards of agricultural and industrial chemicals and promotion of safety and public roles in chemical management, as well as Development of Pollution Management Plan 2012-2016) designed to involve participation of every sector in national pollution management. Additionally, there are also laws that control and regulate chemical management, including the Hazardous Substances Act B.E. 2535 (1992), Enhancement of National Environmental Quality Act B.E. 2535 (1992), and Public Health Act B.E. 2535 (1992), but the enforcement of these laws and policies has not been carried out effectively enough to ensure food safety.

13. Even though on 10 March 2009 the cabinet resolved to endorse the chemical pesticide management policy to mitigate health impacts as proposed by the National Health Commission, there has been no implementation of its core principle, which advises the hazardous substances committee and concerned agencies to open opportunities for public participation in program implementation of the authorities that deal with hazardous substances and to control advertisement and direct sales of hazardous substances used in agriculture. At the same time, the trend of pesticide import and use has risen every year despite the fact that concerned authorities

⁵ [Statistics](#) of occupational and environmental diseases in 2011, Bureau of Occupational and Environmental Diseases

like the Ministry of Commerce, Ministry of Agriculture and Cooperatives and Ministry of Industry have shown their support of this policy.

14. Regarding crisis management related to unsafe use of pesticides without burdening Thai society, the Pollution Control Department under the Ministry of Natural Resources and Environment proposed the Pollution Management Plan (2012-2016) approved by the cabinet on 20 March 2012. This plan calls for imposition of environmental tax on agrochemicals according to toxicity level of each product so as to reduce chemical use and requires that agrochemical producers and importers put up a financial guarantee intended for the setup of a fund, which will be used for disposal of persistent/degraded agrochemicals, rehabilitation efforts in chemical accident incidents, and damage compensation in events that affect people's lives and properties as well the environment.

15. With respect to campaigns that encourage farmers to adhere to GAP and dissemination of knowledge on proper agrochemical use, the private sector has undergone some changes over the years to accommodate consumer needs regarding health, safety and environment. Consequently, the private sector issued Thai GAP, whose safety standards are on par with Global GAP, to promote safe produce. Initially, Thai GAP was applied to fresh fruits and vegetables, which are primary staple foods. These standards encompasses management system and risk management in the whole production chain, starting from seed selection, soil analysis and preparation, irrigation, fertilizer use, pest management, and harvesting until the produce is transported from the farm. Basically, all these steps are recorded thoroughly, and efficient methods are also applied to ensure traceability and product recall. In 2012, ThaiGAP standards have been introduced by the retailer association to establish ThaiGAP as a mechanism for ensuring safety in fresh fruits and vegetables with a coherent, transparent management system which can be further developed sustainably. Even though the system and mechanism to promote ThaiGAP are voluntary, they can help bring about sustainable trade competition because the already available system and mechanism of the private sector can be utilized promptly. The more widely these standards are applied with tangible results, the more the "kitchen of the world" image of Thailand will be solidified because they will build confidence in quality and safety of Thai agricultural products among trade partners and consumers. It is worth noting that total value of fruits and vegetables circulated in the retailer system, especially supermarkets located in department stores, makes up as much as 75 percent of the total value of domestic trade.

16. The establishment of effective food safety standards for pesticide-free food not only requires strict enforcement of the law but also needs to have additional tax and fiscal mechanism known as the "polluter pays principle (PPP)," effective control of advertisement and direct sales of chemical pesticides, and stringent pesticide registration which welcomes public participation, especially farmers and consumers. In addition, quality management based on Good Management Practices (GAP) must be advocated so that it can be made a mandatory legal measure with an aim to eliminate unsafe food problems, and ThaiGAP must also be used as a voluntary measure. All this will ensure safety throughout the food production processes and the whole production chain, and Thai farmers and consumers as well as products sold in the local retail market are as safe as those in export markets. The accountability system associated with safety in production and distribution of fresh fruits and vegetables throughout the food chain according to GAP standards constitutes a fundamental mechanism that will broaden its scope throughout the country. This can be done by starting from the domestic retail system, importation and local production and using the existing mechanism of the private sector, supported by the Thai Chamber of Commerce and affiliated network of the Thai Retailer Association. To support such efforts, the public sector and Kasetsart University should promote knowledge and develop personnel in the entire production and supply chains. Eventually, farmers can properly use agrochemicals, especially chemical

pesticides, so that our produce can meet local and international demands because they are safe and free from chemicals.

Issues for consideration by the National Health Assembly:

Requesting the National Health Assembly to consider Document Health Assembly 5/
Draft Resolution 8