

# Situation of antibiotic residues in pork, chicken and beef in Thailand

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## Abstract

Humans can exist by consuming food. In our daily lives, some free foods and foods contain residues such as drug resistance in meat. They were obtaining Food residues from various sources such as agriculture, pesticides, fruit residues, livestock, and aquatic animals. When humans have an increased demand for food, they increasingly consume it. As a result, many food sources use various substances to increase productivity and result in residues, such as the use of accelerants for pigs to proliferate, increasing the weight of pigs in a matter of months. The constant detection of antibiotic residues in pork, chicken, and cows shows the problem of residues that have not improved. That is due to farm antibiotics, hygiene, and incorrect drug habits. It affects many of our daily lives when consuming foods containing large quantities of residues for a long time. These residues can cause long-term effects, with the impact of exposure to large amounts of residues in the body, possibly leading to the development of antibiotic bacteria. As a result, various ailments followed later. This study contains objects intended to study the situation of antibiotic residues in pork, chicken, and cows, which are the primary food days of Thai people, and to increase awareness of safe food. The study was based on government reports and relevant research to collect and analyse data.

Keywords: Various sources ; such as pig red meat enhancers, fungicides, bleaches, borax, formalin, or pesticides.

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## Food Safety

Food safety means that food must be free from toxic substances and not cause harm to consumers. Food safety requires procedures to prepare, cook, mix and eat correctly according to the intent of the food. However, there are many global food safety problems, such as the 1996 mad cow disease problem in England, which continues to be a problem. E. coli outbreaks in Japan and the U.S., Encephalitis outbreaks in pigs in Malaysia, and bird flu outbreaks in many countries worldwide.

The situation of food safety in the country in 2001-2002, the position of problems, and the impacts of food insecurity in Thailand classify according to food contamination from pathogens and parasites, contamination from various chemicals, and contamination from unsanitary conditions food sources. The Ministry of Public Health has concluded that the sanitation situation of food has found that Thai people are healthy, and the risk of consuming contaminated food increases yearly, such as diarrhea and poisonous food diseases. Hazards are present in food and affect insecurity in consumers. In nature, toxins from pesticides in fruits and vegetables, antibiotic residues in meat, the misuse of chemical additives in foods, and certain substances in foods that

cause allergies for certain groups of people, such as seafood allergies, peanut allergies, etc. Biological hazards refer to the dangers posed by living things, such as microorganisms that cause food poisoning and can begin illnesses in the gastrointestinal tract and systems in the body. There are two types: 1. Physical hazard refers to the danger caused by counterfeit materials such as scrap metal, glass fragments accidentally contaminated in food, etc. 2. Chemical hazard refers to the danger posed by chemicals.

### **Food Safety – Meat products**

The use of antibiotics to accelerate growth or prophylaxis in animals is an essential factor that causes antibiotic resistance much faster. Both terrestrial and aquatic animals (such as chickens, pigs, cows, fish, and shrimps) that receive antibiotics, especially the use of antibiotics to accelerate growth or prophylaxis, cause bacteria can live in animals (skin, oral, beam, guts) and the environment exposing to antibiotics. Antibiotic-resistant bacteria remain and may increase in number, replacing the destroyed ones. Bacteria that are sensitive to antibiotics, but others may develop resistance to those similar antibiotics, or they can also be resistant to other parallel antibiotics.

Antibiotics needed to treat diseases associated with bacterial infections in humans are used on farms in more significant proportions than treating the disease in people (Van Boeckel et al., 2015). The meat industry has been using antibiotics in farming systems since the 1950s, with drug resistance found in the meat industry caused by improper use.

According to a Food and Drug Administration (FDA) database 2016 in Thailand, there are 5,371 registered antibiotics, two-thirds of which use on humans, with the rest used for animals; some of the use in animal feed expect to increase due to increased demand for meat.

The United Nations Food and Agriculture Organization (FAO) says that only 42 countries worldwide have storage systems for antibiotic use in the livestock sector. This lack of disclosure makes it impossible for us to know how much of the actual proportion of antibiotic use in our country is and how vulnerable it is to spread drug-resistant infections.

### **Antibiotic residue detection**

Although Thailand is a major exporter of chicken meat, the actual figures on antibiotic use in the meat industry are still tiny. A recent study by the Consumer Foundation found that in more than 40 percent of chicken meat and chicken liver surveyed, founding antibiotic residues. ReAct (Action on Antibiotic Resistance) revealed farm drug use patterns are generally based on the recommendations of companies that send chicken breeds to be raised, with the main antibiotics used including amoxicillin, colistin, doxycycline, and oxytetracycline. Four of these are the same antibiotics used on humans. The World Health Organization recommends that reducing the unnecessary use of these drugs is critical to maintaining the effectiveness of medications for treating human well-being and essential diseases such as tuberculosis.

The problem of drug resistance, in addition to affecting a person's health, also threatens industrial animals and their products because of the distribution of drug-resistant infections. Expect an increase in the spread of various diseases and inflict huge losses.

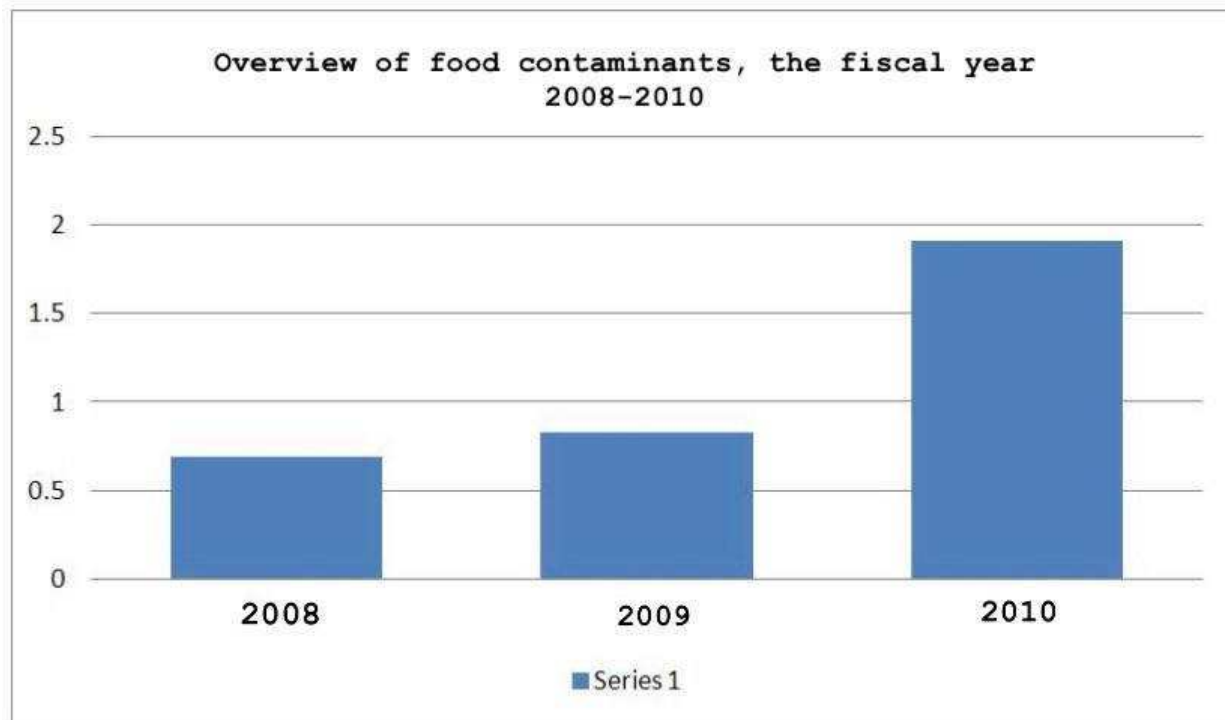
However, situation data also indicates that globally, there are about 700,000 drug-resistant deaths annually. And if the problem is not accelerated, it is estimated that by 2050 (or 34 years), drug-resistant deaths will reach 10 million. The most deaths in Asian countries are 4.7 million. It has an economic impact of about 3.5 billion baht (100 trillion USD).

While for Thailand, Preliminary studies have shown that there are approximately 88,000 drug-resistant

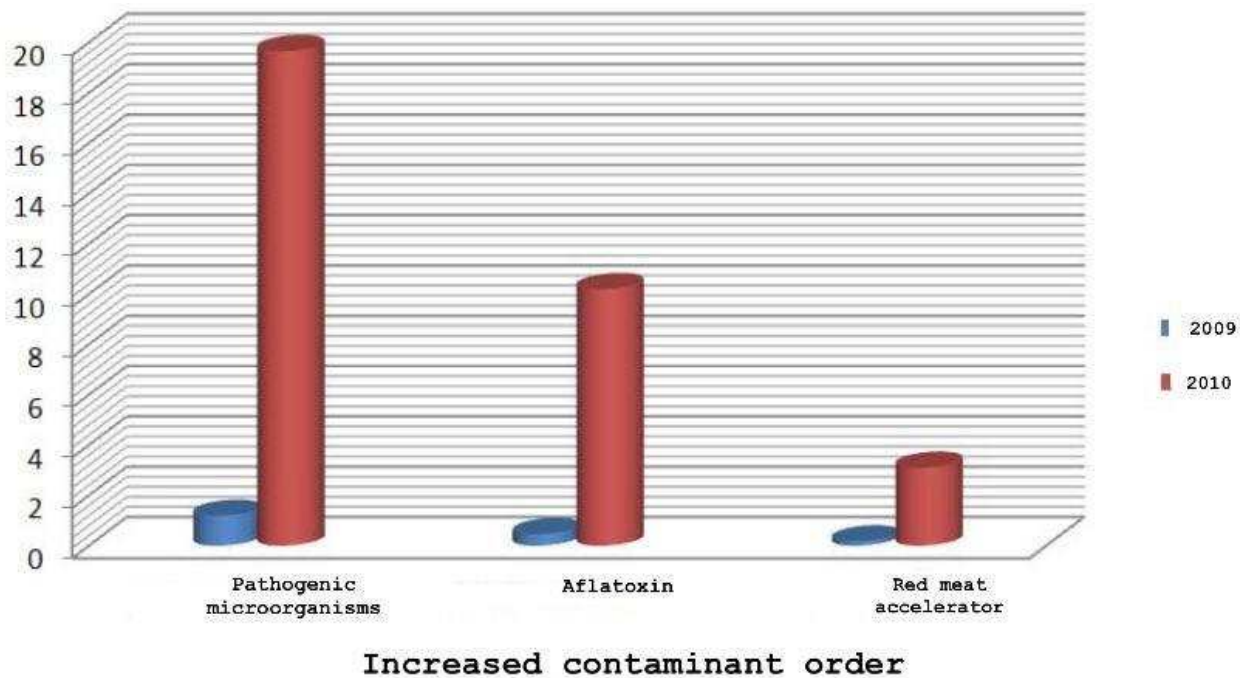
bacterial infections a year, with an estimated 38,000 deaths a year, accounting for an overall economic loss of 4.2 billion baht. Factors affecting the occurrence and spread of drug resistance were seen in the agricultural sector in November 2015. Colistin-resistant gram-negative bacteria were reported with a new drug resistance mechanism that can more and faster transmit drug-resistant genes. (Plasmid-Mediated Colistin Resistance: MCR-1) on China's ranches. Later in December 2015, bacteria with the MCR-1-resistant gene were reportedly found in people and meat in England. Bacteria with the MRC-1 resistant gene are currently located in many countries, including Thailand.

### Explore the types of pesticide residues in food.

The Food Safety Operations Center has summarized the results of a random sampling of 10 contaminants, pathogenic microorganisms in food. And randomly assessing the fresh market type 1 according to the bazaar criterion to buy and food stalls according to CFGT criteria from the report of the Provincial Public Health Office. (According to provincial indicators) the fiscal year 2008-2010, It was found that the overall number of contaminants increased steadily from 0.69% in 2008 to 0.83 in 2009 and 1.91 in 2010.



Pathogenic microorganisms are the number one contaminant causing concern, from 1.19 percent in 2009 to 19.66 percent in 2010. The second place is aflatoxin, from 0.46 percent in 2009, increasing to a hundred. 10.20 percent in 2010, the third place was red meat accelerator, from 0.17% in 2009 to 3.10% in 2010, followed by pesticides, formaldehyde, bleach, and fungicide, respectively.



### What is drug resistance, how does it spread, trending drug resistance problems?

Drug resistance tendencies are those that are resistant to multiple antibiotics and are resistant to the last or almost last antibiotics to treat patients. Healthy people are not usually harmed by drug resistance, but those who are weak or terminally ill can have a severe infection that can lead to death. Therefore, it is necessary to use expensive or unprocessed drugs to kill these.

#### People at risk of drug-resistant infections

- Patients who have been treated in wards with drug-resistant patients
- Critically ill patients admitted to intensive care wards
- Patients who have been given multiple antibiotics or have been given antibiotics for a long time
- Patients undergoing major surgery
- Patients who have undergone organ transplants

#### Spread of drug-resistant infections

- The infection is high in feces, urine, and skin around the patient's anus.

- If you do not wash your hands properly, drug resistance is spread by direct contact with others or touching other items.
- Patients must wash their hands every time with soapy water after defecation or urine.
- Relatives and healthcare workers who care for patients, if their hands are not stained with feces, urine, or ulcer fluid, wash hands with soapy water, or use alcohol gel to rub hands.

The Department of Medical Sciences, the Ministry of Public Health, and the network jointly developed the potential of Thailand's antimicrobial resistance laboratories and ASEAN member states to provide quality antimicrobial resistance surveillance systems and address antimicrobial resistance in the same direction at national and ASEAN levels. Dr. Mayura Kusum, Advisor to the Minister of Health, spoke after chairing the opening of the symposium on the Development of the potential of the ASEAN Community's Antimicrobial Resistant Bacteria Network Laboratory at Richmond Hotel, Nonthaburi, the research and surveillance of antimicrobial resistance problems of the National Antimicrobial Resistance Monitoring Center was conducted. The Institute of Public Health Sciences Research, Department of Medical Sciences, found that the issue of antimicrobial resistance or antibiotics of bacteria in Thailand is worrying. Because many infections are more likely to become resistant, such as *Streptococcus pneumoniae*, which causes pneumonia in children up to 5 years old, there was a 47% increase in drug resistance by 1998, but in 2013 found 77.8% and *E.coli* was consistently prone to carbapenems resistance.

### Dealing with drug resistance

- Eat cooked foods such as boiling, frying, and grilling.
- Choose to consume meat from reliable stores and have labels indicating the origin of the food source.
- Avoid eating raw items such as fresh shrimp, fresh shellfish, and fresh meat.
- Wash the ingredients thoroughly before cooking every time.

### Conclusion

The consumption of safe food is essential because if we neglect to shop for raw materials or consume food at a non-quality store, it can cause consequences later on, where meat residues can affect us with illnesses such as dizziness, nausea, vomiting, intolerance, or can be fatal. Therefore, eating safe foods should be taken into account before consuming them, which is a safe way to consume food; inevitably, eating cooked foods, since cooking can kill germs as well as reduce residues in raw materials. We should avoid eating natural foods such as fresh shrimp and fresh shellfish because we cannot know how much detritus we eat in the foods we eat.

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Written on Friday, 20 July 2018 at 12:58 PM. Written by Thaireform. ( <https://www.isranews.org/content-page/item/67941-antibiotic.html> )

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