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Theoretical Application of Supervision over Quality and Safety of Agricultural Products

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Abstract Supervision over quality and safety of agricultural products has received high attention of management department. Competent authorities have formulated and issued many measures to strengthen supervision over quality and safety of agricultural products and improve China's agricultural product quality and safety level. From the perspective of management science, this paper elaborates basic contents of two basic management theories, Broken Windows Effect and Effect of Heat Furnace. Then, it analyzes influence of Broken Windows Effect and Effect of Heat Furnace on supervision over quality and safety of agricultural products. Finally, it comes up with recommendations for supervision over quality and safety of agricultural products.

Key words Agricultural products, Quality and safety, Supervision theories

Food comes first to human, so does safety to food. Food safety and agricultural product safety are fundamental requirement for human beings, and also the key to continuing and safeguarding of human life and health. In recent years, quality and safety accidents of agricultural products are of frequent occurrence, such as lean meat powder, Melamine, poisonous bean sprouts, tainted steamed buns, and swill-cooked dirty oil. A series of major agricultural product quality and safety problems have created panic and bewilderment and received high attention of management department. Government has taken many measures to strengthen safety management of agricultural products, but the effect is not satisfactory. In this study, we are intended to make a brief analysis on two basic theories, Broken Windows Effect and Effect of Heat Furnace.

1 Overview of basic theories

1.1 Broken Windows Effect

1.1.1 Concept and connotation of the Broken Windows Effect. The Broken Windows theory was introduced in a 1982 article by social scientists James Q. Wilson and George L. Kelling. "Consider a building with a few broken windows. If the windows are not repaired, the tendency is for vandals to break a few more windows. Eventually, they may even break into the building, and if it's unoccupied, perhaps become squatters or light fires inside". This theory is a criminological theory of the norm-setting and signaling effect of urban disorder and vandalism on additional crime and anti-social behavior. The theory states that maintaining and monitoring urban environments in a well-ordered condition may stop further vandalism and escalation into more serious crime.

1.1.2 Principle of the Broken Windows Effect. In the supervision over quality and safety of agricultural products, supervisors

must be highly vigilant about small faults that look like very few and slight, but offend core value of quality and safety management, and shall stick to the principle of management in strict accordance with laws. If the first broken window fails to be repaired in time, it will connive at more people breaking more windows. As a result, a small leak will sink a great ship and bring unrecoverable losses. In the process of quality and safety supervision of agricultural products, there are often industrial practices, codes or implicit rules influencing quality and safety of agricultural products, such as improper use of agricultural inputs and inappropriate addition of additives. These acts, if without timely supervision and control of government department, will induce many enterprises to follow. Finally, it will form a type of industrial secret or industrial rule and consequently influence quality and safety of agricultural products.

1.2 Effect of Heat Furnace

1.2.1 Concept and connotation of the Effect of Heat Furnace. Any work or cause has certain regulation and system, so any participant in violation of the regulation and system will be punished. The essence of this effect is the punishment principle. Since the heat furnace is red as fire, everybody knows it is hot and will get burn if touching (this is warning principle). Once you touch the furnace, you will get burn definitely (this is consistency principle). When you touch the furnace, you will get burn immediately (this is instant principle). Any one who touches the furnace will get burn (this is fairness principle).

1.2.2 Principle of the Effect of Heat Furnace. In the process of quality and safety supervision of agricultural products, it is required to firstly warn producers and operators, set up and improve long-term supervision mechanism, and provide proper guidance on the basis of both positive and negative sides, to make producers and operators consciously act and observe related regulations and systems. Besides, the punishment shall be instant. Any producer or operator, no matter close or distant, rich or poor, small or big,

will be instantly punished in case of violation of provisions of quality and safety. System implementation shall be firm and resolute, not sloppy, and shall not have time difference. In addition, when implementing the system, the punishment shall be resolute, not overcautious and indecisive, take advantage of the Effect of Heat Furnace, to strengthen supervision over quality and safety of agricultural products more effectively.

2 Influence of the Broken Windows Effect and the Effect of Heat Furnace on supervision over quality and safety of agricultural products

2.1 Influence of the Broken Windows Effect The Broken Windows Effect can be applied into the supervision over quality and safety of agricultural products. Take melamine milk powder accident as an example, when melamine (protein concentrate) is added to milk powder, the test result of milk powder will indicate high content of protein, while cost of enterprise will be greatly reduced. Therefore, some enterprises can reduce sales price to increase sales volume and expand their market share. If supervision department fails to find the problem and repair the "broken window" in time, other dairy product enterprises will think that government permits such action and will follow one after another, add more protein concentrates into dairy products (namely, breaking more windows), and more problem milk powder appear in market, and finally the market is in disorder. This accident greatly influences the whole dairy product enterprises and makes them suffer tremendous losses. After the melamine accident, many places had the serious problem of milk pouring. Dairy enterprises were ordered to recover and destruct unacceptable products, and needed taking various measures to regain market confidence. The entire dairy industry suffered a loss of more than 20 billion yuan by now. To date, the confidence of consumers in dairy enterprises is still weak. Although foreign milk powders rise in price and the customs increases, as well as problem of New Zealand milk powder, it still fails to prevent domestic consumers from buying foreign dairy products. Hong Kong has formulated restriction policy to limit domestic consumers buying foreign milk products. These indicate that the melamine accident makes the domestic dairy products difficult to restore vitality. To win approval and support of consumers, domestic dairy enterprises and industry have to make more efforts.

The lean meat powder was used by some southern pig farms registered to export to Hong Kong as early as the middle of the 1990s, to increase price of pigs exporting to Hong Kong. In spring of 1998, the lean meat powder poisoning accident occurred in Hong Kong. From May in the same year, the State Administration for Entry – Exit Inspection forbade the use of lean meat powder in production of pigs exporting to Hong Kong. In China's mainland, some pig raisers found that the use of lean meat powder can significantly increase the lean meat percentage of live pigs, and then a lot of pig raisers use lean meat powder as feed additives. Although it is clearly prohibited to use the lean meat powder, there are still

users violating regulations. Agricultural departments have taken various measures to crack down the use of lean meat powder, and have made certain achievements. However, it still fails to put an end to use and addition of the lean meat powder. In other words, the broken window fails to be repaired all the time. As a result, more windows are broken, and more pig raisers start using the lean meat powder. In March 2011, Shuanghui Lean Meat Powder accident broke out and exerted considerable influence on the entire live pig industry. Only Shuanghui Company suffered a loss of more than 10 billion yuan. Because of the lean meat powder, Olympic champion Tong Wen nearly lost her gold medal. China's women volleyball players dared not to eat meat. What's worse, Union of European Football Associations (UEFA) included China into the blacklist. Many sports clubs were warned of paying attention to food safety when having dinners in China.

Similar accidents are of frequent occurrence, such as red – yolk eggs, Turbot fishes, tainted steamed buns, and poisonous bean sprouts. Each time of food safety accident exerts earthquake influence on respective industry and inflicts substantial economic losses. All these are largely resulted from inadequate supervision. In sum, the Broken Window Effect is to warn us of rectifying current problem in time.

2.2 Influence of the Effect of Heat Furnace At present, quality and safety accidents of agricultural products are of frequent occurrence in China, and remain incessant after repeated prohibition. Apart from inadequate management, enterprises' weak awareness of legal system, and light punishment, reasons for these accidents also include weak supervision. *The Amendment (VIII) to the Criminal Law of the People's Republic of China* approved in 2011 added "crimes of producing and marketing fake or substandard products", "crimes of producing poisonous or harmful foods" and "crimes of dereliction of duty in food supervision", worsened the punishment of "fixed-term imprisonment of not more than five years" to "death", and cancelled the limit of fines. Nevertheless, under such severe system, the hope of safeguarding food safety is not realized, and food safety accidents still occur frequently. Now, food safety is still beset with weak supervision and law enforcement, failure to enforce laws, and not strict in enforcing the laws. In addition, the conviction criterion is too general, pecuniary penalty is poorly operational, compensation provisions are not clear, and language expression is not definite, so that supervision department has excessive discretionary power. Such situation in addition to weak public monitoring inevitably leads to lenient law enforcement and strict law enforcement alternately from time to time. Therefore, the law executor or higher official has the power to decide lenient or strict law enforcement, which finally returns to the rule by men.

In the melamine milk powder accident, the principal criminal involved in production and sales of 10 000 kg melamine milk powders was only sentenced to fixed-term imprisonment of 3 years with suspension of sentence for 3 years. A high official from a dairy product enterprise in Tianjin comforted his family members

when arrested: "Do not be afraid, the term of sentence will be not longer than 3 years". This obviously runs against the warning principle of the Effect of Heat Furnace. In the Sanlu (Three Deer) Milk Powder accident which gives rise to earthquake of dairy products, the former president of Sanlu Group was sentenced to imprisonment for life, while people engaged in production and sales of melamine mixture was sentenced to death. It is clearly violates the fairness principle of the Effect of Heat Furnace. Food safety accidents, such as poisonous bean sprouts, tainted steamed buns, swill-cooked dirty oil, plasticizer, and toxic capsule, are formed not in one day, but found after a long time. That means it seriously runs against the instant principle of the Effect of Heat Furnace. Marx once described the pursuit of capitalists for profit: "With adequate profit, capital is very bold. A certain 10% profit will ensure its employment anywhere; 20% certain will produce eagerness; 50%, positive audacity; 100% will make it ready to trample on all human laws; 300%, and there is not a crime at which it will scruple, nor a risk it will not run, even to the chance of its owner being hanged." Refraining from punishing law-breakers and lenient punishment can hardly frighten crimes, and it is difficult to bring into play functions of the Effect of Heat Furnace.

3 Recommendations for supervision over quality and safety of agricultural products

In 2011, China launched a big control campaign for food safety. In the whole year, it tracked down more than 5 200 crime cases about food safety, arrested more than 7 000 people involved, and 286 people were sentenced to fixed term imprisonment, life imprisonment or death penalty with reprieve. Such achievement can be described as remarkable. However, there are still many hidden worries about food safety. It is required to strengthen supervision and scientifically apply principle of management science, and timely change current situation of agricultural product quality and safety in China.

3.1 Actively implementing management principle of the Broken Windows Effect, and eliminating potential safety hazards in food safety field At present, problem foods involve wider and wider fields and the harm becomes greater and greater. Means of breaking laws are varied and hidden. Thus, it becomes more and more difficult to find and rectify potential safety hazards and implicit rules in food production and operation. As supervision department of food safety, finding and repairing broken windows are its inescapable responsibility.

3.1.1 Introducing the third party supervision. It is recommended to set up the third party supervision organization. Such organization dispatches supervisors to reside in production and operation enterprises for a long term to supervise food production. In case of any problem found, the supervisor shall stop the act. Besides, the supervisor has the right to veto marketing of certain product, takes the safety responsibility of product on market, and takes the place of government to exercise the supervision power. In this way, it is

expected to find broken windows (illegal acts) in the production and operation of enterprises, and rectify the acts and repair broken windows in time.

3.1.2 Strengthening supervision effort. As government, the more important function is to supervise acts of the entire industry. On the basis of supervision situations and enterprises' production and operation situations, it is recommended to get to know existing common potential hazards and implicit rules in agricultural products for foods and food production and operation links. Besides, it is proposed to improve production standards and regulations, repair broken windows in time, and let other enterprises have no chance to take, no loophole to use, so as to effectively prevent food problems and promote benign and healthy development of food safety works.

3.2 Actively implementing management principle of the Effect of Heat Furnace and promoting legal supervision over food safety At present, objects of supervision over quality and safety of agricultural products in China are numerous, and the supervision scope is wide. In addition, the supervision system is not well established. Related laws and regulations are not perfect. Also, law enforcement is not strict, and punishment is too lenient. In this situation, giving full play to warning, instant, consistency and fairness principles of the Effect of Heat Furnace is an effective method to solve current problems in supervision over food quality and safety.

3.2.1 Improving related laws and regulations. It is recommended to revise and rectify loopholes and defects in system management, make clear supervision system and detailed rules of supervision, and make producers and operators know consequences of breaking rules. The *Food Safety Law* clearly stipulates that providing safe and healthy foods is the primary responsibility of food production and operation enterprises. Enterprises are production and operation entities of foods and also responsibility entities of food safety. Thus, it is required to make enterprises realize the concept of "enterprise engaged in production shall take charge and enterprise engaged in operation shall be responsible". Through enterprise self-discipline and improvement of related supporting mechanism, it is expected to realize the target of enterprises not daring to break laws, not committing laws, and not violating laws.

3.2.2 Strengthening supervision effort and increasing punishment. It is recommended to increase law enforcing supervision input and improve management level of supervisors. Violators must be brought to justice and violators will be severely punished. The "zero tolerance" should be realized in the food safety field. In addition, it should stick to the strict, severe and quick principle, and let lawless people pay a high price, and then they may not dare to break laws. Finally, it is proposed to implement instant and consistency of the Effect of Heat Furnace, so as to effectively realize the change of rule by men to rule by laws in food safety field, and ultimately realize the perfect state of rule by consciousness.

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