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“十一五”“211工程”重点学科建设项目

四川省农村发展研究中心

浙江大学“985工程”项目

资助

我国猪肉质量安全管理体系研究

Research on the Management System
of Pork Quality and Safety in China

◎ 吴秀敏 著

中国农业出版

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摘 要

对优质、安全农产食品的需求是国内外消费者的普遍行为取向，然而，与猪肉有关的食品安全事件频繁发生。猪肉质量安全问题，无论是对消费者的健康还是对猪肉在国际贸易中的竞争力都已经构成威胁，它还直接影响到生猪产业的发展和农民收入的持续增长。中国目前是世界上最大的猪肉生产国和消费国，猪肉的质量安全问题尤为重要和紧迫。因此，对猪肉质量安全管理体系进行研究，不仅具有理论意义，而且在实践上可以为我国猪肉乃至农产品质量安全管理提供指导。

目前，国内外学者对食品安全问题进行了不少研究，取得了不少成果。但是，还缺乏对猪肉质量安全及其管理体系进行深入、系统的理论分析和实证研究。本书应用消费者行为理论、生产者行为理论、管制经济学、契约经济学、博弈论等，结合已有的国内外研究成果，对这一问题展开研究。猪肉质量安全管理体系建设这一宏观命题的探讨，必须建立在对微观经济主体——消费者、生产者、屠宰加工企业行为的分析基础上。基于此，本研究总的思路是在对猪肉质量安全市场进行理论分析和借鉴国外猪肉质量安全保障实践的基础上，从消费者需求行为的分析入手，探讨安全猪肉的供给问题，最后探讨我国猪肉质量安全管理体系的建设。由于

四川是中国生猪生产、猪肉消费和出口的主要省份之一。因此，在对消费者需求行为和养猪户的质量安全控制行为的实证研究中，分别以四川的城市消费者、养猪户为例进行研究具有代表性和典型性。

本书的研究内容大致分为五个部分，由 10 章组成。其中，第三、四、五部分是全书的核心内容。

第一部分，导论与文献综述。包括第 1、2 章。第 1 章导论。主要包括研究背景和意义、界定概念、研究对象和研究的基本思路。第 2 章文献综述。主要对食品安全、猪肉市场、博弈论及其应用等方面的国内外研究进展进行回顾与评述。

第二部分，理论分析与实践借鉴。包括第 3、4 章。第 3 章猪肉质量安全市场的经济学分析及政府管制，是本书研究的理论基础。第 4 章典型国家的猪肉质量保障体系及兽医管理体制。

第三部分，消费者需求行为的实证分析。即第 5 章消费者对猪肉质量安全及有关信息的需求行为分析——对四川城市消费者的实证分析。主要内容包括中国猪肉的需求情况（数量上的需求）、消费者对猪肉质量安全的认知、对安全猪肉的购买情况、对安全猪肉的支付意愿及其影响因素、消费者对猪肉质量安全信息的需求及其影响因素等。

第四部分，安全猪肉的供给分析。包括第 6、7、8 章。第 6 章中国猪肉的供给状况及猪肉生产过程中存在的主要问题。主要内容包括中国猪肉的供给状况、猪肉生产过程中存在的问题——基于产业链的分析、猪肉生

产过程中存在的问题——对资中县的实证分析。第7章农户对猪肉质量安全的控制行为分析——对四川养猪户的实证分析。主要包括苗猪的购买、饲料的选择、使用安全兽药的意愿及其影响因素分析等。第8章安全猪肉产业化经营中加工企业与养猪户行为选择的博弈机理及契约选择机理。

第五部分，猪肉质量安全管理体的探讨。包括第9、10章。第9章我国猪肉质量安全管理体的现状与问题；第10章我国猪肉质量安全管理体的构建及政策措施。本部分在微观经济主体行为分析的基础上，以政府干预理论为指导，借鉴典型国家的经验，对我国猪肉质量安全管理体的现状及存在的问题进行分析，并提出若干政策措施。

通过研究，得出的主要结论有：

1. 经过对中国猪肉的需求状况的分析，指出我国猪肉少部分供出口，大部分供国内消费，为了扩大猪肉的对外出口，为了保护国内广大消费者的健康和生命，政府应该加强对猪肉质量安全的管理。

2. 通过以四川19个城市608个消费者为例对消费者的需求行为进行Logistic回归分析，结果表明：大多数消费者对猪肉质量安全比较关注，对猪肉质量安全状况及其影响因素等有一定程度的认知，但是，认知还存在一定的困难、偏差甚至错误；有多种因素影响消费者对无公害猪肉、绿色猪肉、有机猪肉的认知；消费者对无公害猪肉、绿色猪肉、有机猪肉等安全猪肉有一定的支付意愿；消费者平时比较关注猪肉质量安全信息，

也有一定需求；消费者比较信任具有权威性的政府和专业机构等信息发布主体；只有消费者的年龄、婚姻状况、猪肉质量安全信息了解度三个变量对消费者是否信任政府等机构提供的食品安全信息有影响，其他变量如文化程度、人均月收入、对食品安全法律法规的了解度和对健康信息的关注度等都不显著。

3. 按照产业链分析框架对猪肉生产过程中存在问题的分析以及对资中县生猪生产各环节的考察，结果显示，种猪及繁育体系、饲料、饲养规模及组织化程度、疫病、屠宰与加工等方面都存在一定的问題，严重影响到猪肉的质量安全。

4. 通过对四川省 316 户养猪户采用安全兽药的意见及其影响因素的 Logistic 回归分析，得出养猪户采用安全兽药的意见主要受养猪户的性别、年龄、养猪年数、是否了解兽药残留对人体的危害、是否了解安全兽药的效果、产业化组织是否提供服务以及是否得到政府的支持等因素的影响，且不同因素的影响程度和显著性各不相同。

5. 利用不完全契约理论，运用格鲁斯曼—哈特—穆尔模型（Grossman—Hart—Moore 模型）对安全猪肉产业化经营过程中加工企业与养猪户之间的契约选择进行了理论探讨，得出在安全猪肉产业化经营过程中，加工企业与养猪户之间利益的联结方式是采用要素契约还是商品契约，不能一概而论，要视具体情况而定的结论。

最后，本书提出加强我国猪肉质量安全体系建设的若干政策措施。比如，猪肉质量安全管理体系的构建，

必须在整个食品安全管理体制重构的基础上进行；用 10 年左右的时间逐步形成国家食品药品监督管理局（SFDA）总体负责、统一协调，农业部和其他部局配合的猪肉质量安全管理体制；逐步建立官方兽医和执业兽医相结合的新型兽医管理体制；加强猪肉质量安全法律法规体系、标准体系、检验检测体系、质量认证体系、信息体系和技术支撑体系的建设；加强生猪屠宰、市场准入、可追溯性和动物疫病的防疫等制度建设；猪肉生产经营企业加强内部质量控制；改变经营方式，提高生猪生产的组织化程度；等等。

关键词：猪肉 食品安全 政府管制 消费者 养猪户

Abstract

Nowadays, there is a trend to consumers home and abroad demanding high-quality and safe agri-food. However, the food safety problems related to the pork have always broken out. The issue of the pork quality and safety has posed threat either to the consumers' health or to the pork competitiveness in international trade; it has also affected the development of pig industry and the growth of farmers' income. As the production and the consumption of pork in china have been on the top of the world so far, the issue of the pork quality and safety becomes especially important and urgent. Therefore, the research on the management system of pork quality and safety does not only have its theoretical significance, but also provides some practical advices on the quality and safety management of pork and other agri-food in China.

Domestic and international scholars have studied food safety issue a lot and made a lot of achievements. However, there isn't any further and systematic theory analysis and demonstration research on the management system of pork quality and safety. It is studied in the book, basing on the consumer behavior theory, the producer behavior theory, regulation economics, contract economics and game theory, and the existent research achievements. The discussion on the pork quality and safety management system must be based on the analysis of behavior of the

micro-economy main bodies——consumers, producers and slaughtering companies. Therefore, in the book, the consumers' demand behavior is first analyzed, and then is the supply of safe pork, in the end, the construction of pork quality and safety management system in China is discussed, based on the theoretical analysis of the pork quality and safety market and the experiences of foreign government regulation on pork quality and safety. Sichuan is one of the most important provinces of pork production, consumption and exportation in China, so it is typical that the consumers and the pig farmers in Sichuan are taken as an example in the book, when demonstration study is made on the consumer's demand behavior and the farmers' quality and safety control behavior.

There are five sections that consist of ten chapters in the book, of which, Section Three, Four and Five are the core.

Section One is introduction and literatures, which contains Chapter One and Two. Chapter One is introduction, including the background and importance of research on the management system of pork quality and safety, the definition of concept, the object to research and the basic thoughts of the whole book. Chapter Two is literatures. It mainly reviews and commends on the development of the researches in China and foreign about the food safety, pork market, theory of game and its implication.

Section Two is theoretical analysis and practice reference, which contains Chapter Three, Four. Chapter Three is economics analysis of the pork quality and safety market and government regulation, which is theoretical basis of the whole research. Chapter Four is introduction of typical country's pork quality guarantees system and the veterinarian management system.

Section Three is demonstration on the consumer's demand behavior. Namely Chapter Five, the consumer's demand on the pork quality and safety and the related information were analyzed. The behavior of the city consumers' in Sichuan province is analyzed empirically. In this chapter, the consumer's recognition about the pork quality and safety, the consumption of safe pork, the Willingness To Pay (WTP) to safe pork and the influencing factors, and the consumer's demand on the information about the pork quality and safety are discussed.

Section Four is analysis on safe pork's supply, which contains Chapter Six, Seven, Eight. In Chapter Six, pork's supply and the problems existing in the production process have been analyzed from the point of view of the industry chain. Chapter Seven is the pig farmer's behavior on controlling the pork quality and safety—a case from the pig farmer in Sichuan province. In Chapter Eight, according to the theory of game, the behavior option and contract option between the slaughtering and processing enterprises and the farmers have been analyzed in the pig industry process.

Section Five, including Chapter Nine and Ten, is the discussion about the management system of pork quality and safety. Chapter Nine is status quo and the main problems that exists in present the management system of pork quality and safety in China. Chapter Ten is proposes of certain policies in order to strengthen the construction of this system in China. In this part, based on the analysis of behavior of the micro-economy main bodies, according to government regulation theory, status quo and the main problems which exists the management system of pork quality and safety in China is thoroughly analyzed, certain

proposes of policies is put forward in the end.

Through the research of this book, some beneficial conclusions have been drawn:

According to the analysis of Chinese pork's demand situation, the author points out that little pork is exported while most is consumed in the domestic area. In order to enlarge exported amount and protect the domestic consumer's health and life, the author thinks that the government should strengthen to the management of the pork quality and safety.

Through logistic regression analysis on demand of 608 consumers in the 19 cities of Sichuan, it is concluded that the majority consumers pay more attention to the pork quality and safety, and that they have cognitions to a certain degree to the situation of the pork quality and safety and its influence factor while their cognitions also have a certain difficulties, deviations even errors, and that these cognitions about the pork of pollution-free, the green pork and the organic pork are influenced by many factors, and that some consumers will pay more to the safe pork, and that the consumers pay more attention to the information of the pork quality and safety and believe this information issued by the authority government and specialized organizations. Through logistic regression analysis on demand of the information of the pork quality and safety, it is found that only three variables, the consumers' age, marriage and the cognition of these information are remarkable while other variables aren't very obvious, such as education level, average month income of per person, cognitions of food safety laws and regulations, attention to the health information and so on.

The problems existed in the pork production process have

been analyzed according to the industrial chain analysis frame, and Zizhong County is taken for example. The result of analysis indicated that there are some problems on the system of the boar and its breeding, the feed, the raising scale and the organization degree, the epidemic disease, slaughters and the machining etc, which have affected the pork quality and safety seriously.

The logistic regression analysis is made on whether the 316 pig farmers in Sichuan want to buy the safety veterinary medicine or not and the factors which influence their demand desires. It indicates that the demand desires on the safety veterinary medicine are influenced mostly by many factors, such as the people's sex, age, the years that the farmers have raised the pigs for, the cognitions of the harm that the veterinary medicine remains, the cognitions of the effect of the safety veterinary medicine, the cognitions of the service which is provided by the industrial organization, as well as the supporting of the government etc, and that each factor has different influence degree and different remarkable nature.

The incomplete contract theory and the Grossman-Hart - Moore mode are applied to research and discuss the choice of the contract between the machining enterprises and the pig farmers in the process of the safety pork industrial production. It indicates that we could not generally speak that the benefit joint way must be the elements of the contract contract or the commodity contract, and the choice of which should depends on the concrete circumstance.

In the end, some policy measures are recommended that strengthen the construction of the management system of pork quality and safety. For instance, construction of the management

system of pork quality and safety must base on the construction of the food safety management system; it will be 10 years to form gradually the management system of pork quality and safety that SFDA is responsible overall and the Ministry of Agriculture and the other bureaus coordinate; the new veterinarian management system unified by the official veterinarian and the practicing veterinarian should be established gradually in China; the construction on the pork safety laws and regulations system, the standard system, the examination and measure system, quality authentication system, the information system and the technical supporting system should be strengthened; and the pigs slaughtered system, the market access system, the traceability system and the animal disease prevention system and so on should be constructed; and the interior quality control in the pork production enterprises should be strengthened, and the way of business should be changed to enhance the organization degree of the pig production.

Keywords: Pork Food safety Government regulation Consumer Pig farmer

序

随着农产品国际贸易的日益发展和各国对消费者权益及其健康关注度的不断提高，农产品质量安全问题越来越受到世界各国的高度重视，已经成为政府、企业和消费者共同关注的世界性热点问题，也由此成为学术界一个持久的国际性研究课题。

毫无疑问，农产品质量安全问题的解决需要相应的技术手段，因此是技术科学关注的问题，但是，这又并不是仅靠技术科学就完全能够解决的。要解决这一问题，明显地，我们至少还需要回答下列这一系列问题：生产者有生产安全农产品的激励吗？消费者在购买农产品时是否具有完整的信息以识别安全农产品从而作出理性的选择？消费者是否愿意为安全农产品支付额外的费用？在有多种质量安全程度不同的农产品同时供给时，仅仅依靠市场机制能否自动地实现市场均衡？政府是否需要干预？政府如何干预更有效？……以上这些问题，显然已经超越了技术科学的范畴，需要从经济学、管理学的角度进行更加深入的理论分析和实证研究，从而在对市场微观主体——生产者和消费者意愿及其行为进行深入把握的基础上，提出农产品质量安全管理体系的构想，这就是本书作者试图努力解答的问题。

目前，国内外学者已对农产品乃至食品安全问题进

行了不少研究,取得了许多富有价值的成果。但总体来看,似乎是“分割式”的研究居多,即大部分相关论文多从消费者需求、生产者行为、政府行为等方面分别进行研究,而且大多是针对农产品大类而非品种展开的。专门针对某个产品,把消费者的需求行为、生产者的质量安全控制行为和政府管理结合起来,进行全面和系统的研究非常少,因此,就很难提出令人信服的既有理论依据又切合实际的加强农产品质量安全管理体系、提高农产品质量安全水平的对策建议。正是针对现有研究工作中的这一薄弱环节,吴秀敏博士的这本专著选取了猪肉这一与人们生活密切相关的产品,对其质量安全问题及管理体系进行了一次比较全面和系统的探索性研究。

中国目前是世界上最大的猪肉生产国和消费国。但近年来国内出现了许多诸如“瘦肉精”残留、人感染猪链球菌疫情、“注水猪肉”等食品安全事件,严重影响了消费者的健康乃至生命,甚至由此而影响了人们对经济和社会安全的预期;从国际贸易的情况看,质量问题严重影响了我 国猪肉在国际贸易中的竞争力,中国猪肉产品的出口数量非常少、比例非常低,这与中国作为猪肉最大生产国的地位是严重不相称的。秀敏选择这样一个具有重要现实意义的问题作为自己的博士论文选题,应当说是很有眼光,也是很合适的。

本书是作者在博士论文的基础上,经过认真修改而成的,以猪肉这一中国最主要的肉类产品为对象,对其质量安全管理体系问题进行了深入的研究。本书的总体思路是:以政府行为经济学和食品科学为指导,以典型

国家猪肉质量安全保障体系的实践为借鉴，采用供给—需求分析法，从消费者需求入手，探讨安全猪肉的供给以及猪肉质量安全管理体的建设问题。本书的特色主要表现在以下几个方面：

一、对猪肉质量安全问题的相关经济学理论进行了较为深入的梳理和分析。本书以对政府行为经济学的探讨和对猪肉质量安全市场的经济学分析为基础，为猪肉质量安全的政府管理提供了理论依据。

二、研究视角比较独到。本书从消费者对猪肉质量安全的需求出发来探讨安全猪肉的供给问题，从微观经济主体的行为（消费者的需求行为、养猪户的质量安全控制行为、屠宰加工企业的行为）的分析，结合生猪产业链的分析，来把握猪肉质量安全管理体建设这一宏观命题，就笔者所见，在国内同类研究中尚属首次。

三、大量的调查资料和实证研究。由于这一问题的研究难以获得官方统计数据，因此，更多地需要通过调查掌握实际资料，并以此为基础进行实证分析。在消费者需求行为方面，该书以四川城市消费者为例，就消费者对猪肉质量安全的认知、对安全猪肉的支付意愿及其影响因素、对猪肉质量安全信息的需求及其影响因素等进行了实证分析。在安全猪肉供给方面，以农户散养为主的生猪生产方式使我国猪肉质量安全问题面临着严峻的挑战。本书以中国生猪生产大省——四川省的散养农户为例，对苗猪的购买等质量安全控制行为进行了描述性统计分析，对养猪户采用安全兽药的意愿及其影响因素进行了计量经济分析。