



*THE STUDY ON COST AND
ECONOMICAL BENEFIT
OF MAIZE IN CHINA*

中国玉米成本 及经济效益研究

柴斌锋◎著

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户种植成本和经济效益，并对两者的关系进行计量分析，以期真正发现在实际中决定种植玉米经济效益的主要影响因素，从而有针对性地进行成本控制。

全书共由 8 章内容构成：

第 1 章 导论 本章主要阐述了本书的选题背景、研究目的和意义，论述了玉米成本核算、价格和经济效益的国内外研究动态，说明了研究的思路、方法和可能的创新之处。

第 2 章 玉米成本及其经济效益的基本理论 本章主要论述了玉米成本的有关概念和玉米价格的涵义、形成特点和分类；玉米生产经济效益的涵义，计算公式和对农户的意义。

第 3 章 玉米成本确认与计量 本章首先阐述了玉米成本现行的核算制度和原则，进而说明了玉米生产的特点对成本核算的影响，在此基础上，阐述了玉米成本核算的程序；论述了玉米成本要素具体有哪些、各成本要素按照生物资产的确认和计量方法在成本核算中该如何确认和计量。主要结论是将各种外部成本如环境成本、农用水资源成本等纳入玉米成本核算范围，具体量化方法是把使用农药、化肥和灌溉引起的对社会的整个环境成本按照使用量的比例进行计算，从而得到每千克农药和化肥造成的环境成本以及每公顷灌溉引起的环境成本。

第 4 章 玉米成本分析 本章主要利用 1975—2006 年《全国农产品成本收益资料汇编》中的关于玉米成本

和收益的省级层面的数据，对 1975 年来的玉米总成本和生产成本以及它们各自结构进行统计分析；还利用其中的美国玉米成本收益资料和中国平均的数据进行比较分析；最后，利用成本差异模型对国内各玉米主要生产区间成本差异进行实证研究。主要结论有：（1）玉米成本及其各构成要素变化趋势和所占比重大小不一样，化肥、种子、农家肥、畜力等对玉米生产有直接明显作用的投入要素占了绝大部分的比例，而且，其变化趋势和总成本的变化趋势差异不大；（2）不同地区和中美之间由于农业发展的宏观趋势、资源禀赋状况、机械技术和生物技术的诱导及农业政策取向等不同导致影响玉米成本的主要因素各不相同。

第 5 章 玉米成本控制 本章首先阐述了种植玉米中对各种因素该如何选择；然后论述了各种成本控制方法，并最终得出了玉米成本控制方法；利用实际调查农户数据和统计数据对玉米成本进行了标准成本、实际成本和成本差异计算和会计处理，并对差异原因进行分析后得出玉米成本控制的具体措施。

第 6 章 玉米成本和价格关系的实证分析 本章主要利用玉米生产的成本函数和收益函数相结合的方法得出计量模型对玉米价格如何决定进行实证研究，得出了玉米价格决定的协整模型和误差修正模型。实证发现：玉米生产成本和农业生产资料价格指数变动与玉米市场价格的变动成反向关系；而玉米生产中的额外费用和玉米主要产品产量则呈现与玉米市场价格变动同一方向的

趋势。在这四个自变量中，玉米主要产品产量对玉米市场价格的变动影响最大，玉米生产的额外费用对玉米市场价格影响最小。

第7章 玉米经济效益分析 本章通过对陕西、山东和贵州三省的农户调查数据分析，把农户分为不同等级和不同地区两个角度来考察三省农户玉米各项投入及产出水平，了解农户现有的玉米生产模式和现状，找到影响农户玉米产出的主要因素，对农户的玉米生产行为进行研究；本章利用调查数据估算出不同等级农户和不同地区农户各自生产函数的具体形式，在此基础上，又分别针对不同的生产函数用 OAXACA 分解方法进行经济效益差异的分解。主要结论有：（1）玉米的生产成本 and 经济效益与土地等级、细碎化和农户的贫富等级有关；（2）人工费用的计量方法将直接影响玉米生产成本和经济效益的核算；（3）影响农户玉米生产经济行为的差异的各主要因素因农户等级和地区不同在数量和质量上呈现不同的作用力和作用程度。

第8章 研究结论与政策建议 本章主要对本书的研究结论进行归纳、总结，并提出相关政策建议。

Abstract



Maize plays an increasingly important position in the agricultural and national economy development. Since 1983, China's maize production increase year by year. What factors support the production of maize harvest? In the micro-level of farmers operating, which are more obvious in these key factors, acreage, fertilizer and irrigation water inputs, farmers labor input, and a good climate? Understanding of the composition of maize costs, the elements in the proportion of the total cost of maize and proper accounting of the costs, the market price of maize, as well as how to form the cost in the price actually played what role is to improve household income and maize planting in the Maize the international market, the key to competitiveness, but also guarantee the sustainable development of maize industry an important way.

This book first tell about the basic theoretical knowledge about the concept, characteristics and classification of China's maize, maize cost and maize prices the concept, characteristics and classification. On this basis, then, this book discusses cost accounting system and principles, the cost of maize, as well as the constituent elements of the cost elements in the accounting on how to identify and measure; this book also have the Empirical Study on the cost of maize and constitute elements of the movements in the domestic inter-regional and Sino-US maize

costs and elements and structure. This book also uses econometric model Empirical Analysis of the various cost elements of the cost of maize, maize costs with a view to finding the deep-seated reasons for change and the inherent laws. In the analysis of costs, the paper on maize price formation mechanism of the empirical study and hope to really explore the market price of maize to the formation of the inherent law. Finally, we use the actual survey data analysis of the farmers planting costs and economic benefits, and the relationship between the two for quantitative analysis with a view to the real decision in the actual planting maize found in the main economic factors, which targeted manner cost control. This book studies the content and main conclusions are as follows:

Chapter I Introduction. This chapter of the main topics on the paper background, the purpose and significance of cost accounting and maize on the decisions of the domestic and international prices of dynamic study shows that the idea of this book, methods and possible innovation.

Chapter II the basic theory of maize costs and economic benefit. This chapter focuses on the costs of maize and maize prices the concept of the meaning of formation characteristics and classification; maize production cost implications, and the formula for calculating the significance of the farmers.

Chapter III maize affirming and measuring This chapter first expounded on the current cost of maize for the accounting system and principles, which described the characteristics of the maize production cost accounting impact of this foundation, but also on cost accounting procedures of maize; The chapter also

discusses specific elements of the cost of maize which, in accordance with the cost elements of the recognition and measurement of assets in the cost accounting method in how to recognize and measure. The main conclusions of this chapter is all external costs such as environmental costs, the cost of agricultural water into maize costing scope of the specific quantitative method is the use of pesticides, fertilizers, and irrigation caused by the social environment as a whole in accordance with the utilization of the cost ratio, and thus gained per kg of pesticides and fertilizers as well as the environmental costs per hectare irrigation caused by environmental costs.

Chapter IV maize cost analysis. 1975—2006, the main use of this chapter, “National Agricultural Costs and Returns compilation of information” on the costs and benefits of maize provincial level data, since 1975 the total cost to the maize and the cost of production as well as their respective structure statistical analysis;

The chapter also use maize costs which the United States and China, the average income information to compare the data analysis; finally, the chapter also differences in the cost model on the use of domestic maize production cost variances range of empirical studies. The main conclusions of this chapter are: (1) the cost of maize and its constituent elements of trends and changes in size and proportion, fertilizers, seeds, manure, animal such as maize production is directly evident in the role of the elements of the majority the ratio, and its total cost trends and changes in the trend of changes little difference; (2) different regions and between China and the United States due to the macro-trends in

the development of agriculture, natural resources situation, mechanical and biological technology induction and orientation of agricultural policies lead to different effects, such as the cost of maize is not the same as the main factors.

Chapter V maize cost control. This chapter first expounded on planting maize on the various factors in the selection and then discussed a variety of cost-control method, and eventually obtained maize cost control methods; The chapter also use the actual farmers survey data and statistical data on the maize cost of the standard costs, actual costs and cost calculation and accounting differences, and differences in the reasons for maize derived from the analysis of specific cost control measures.

Chapter VI maize prices and the cost of Empirical Analysis. This chapter major maize production costs and benefits function that the method of combining econometric model to determine the price of maize empirical research shows that maize prices decisions cointegration models and error correction model. Empirical found: maize production costs and prices of agricultural means of production, changes in index changes in the prices of maize market into reverse; and maize production and the additional cost of the production of maize and maize showed the same changes in the direction of the market price trends. Of the four variables in the production of maize on the main changes in the prices of maize market greatest impact, the additional costs of maize production on the market price of maize minimal impact.

Chapter VII maize economic benefit analysis. This chapter through Shaanxi, Shandong and Guizhou provinces analysis of

the survey data farmers, farmers divided into different levels and different parts of the two provinces to examine the perspective of maize farmers inputs and outputs, farmers understand the existing modes of production and maize the status quo, farmers find maize output affect the main factors for the production of maize farmers conduct research; this chapter use survey data to estimate the different levels of farmers and farmers different parts of the production function of each specific form, and on this basis, and were aimed at different production function decomposition method used OAXACA economic differences decomposition. The main conclusions of this chapter are: (1) the cost of production for maize and economic benefits and land grading, and a chronology of the rich and the poor farmers grading; (2) Measurement of the labor costs will be directly affected maize production costs and cost accounting; (3) the economic impact of the production of maize farmers the difference between the major factors for farmers in different levels and the quantity and quality of the force is different and the role extent.

Chapter VIII research findings and policy recommendations. This chapter of the main conclusions of the study on summarizing, sum up, and the relevant government departments and relevant policy recommendations.

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Abstract

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第 1 章

导 论

..... [中国玉米成本及经济效益研究]

1.1 选题背景

新中国成立以来的半个多世纪，玉米在我国食物系统中始终占据重要地位。虽然人类栽培农作物已经有近万年的历史，但现在人类的食物仍主要来源于 20 多种农作物，其中 75% 来源于水稻、小麦和玉米，玉米总产量的大部分转化为人类必需的畜禽产品。随着畜牧业的发展和综合利用新技术的应用，玉米已经发展成为全世界重要的粮食作物、饲料作物和经济作物，在农业生产和国民经济发展中占有越来越重要的地位。

从 1983 到 2006 年，我国玉米的播种面积由 18 824 千公顷，增加到 26 971 千公顷；单产由每公顷 3 623.56 千克，提高到 5 393.94 千克；总产量由 6 821 万吨增加到 14 548 万吨；面积增加了 43.28%，单产提高了 48.86%，总产量提高了 113.28%。

玉米不仅是重要的粮食作物、饲料作物，而且是重要的经济作物及工业原料。高油玉米、高蛋白玉米、高淀粉玉米等价值强化玉米品种的选育成功及其在生产中日益广泛的应用，使玉米经济作物功能明显凸现，已成为重要的油料、糖料作物。伴随科学进步，对玉米研究的不断深入，玉米工业用价值备受重视，应用范围不断拓展。以玉米为主要原料的深加工领域现已涉及食品工