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China Knowledge Centre for Engineering Sciences and Technology

# 《互联网农产品质量》专题快报

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中国工程科技知识中心地理资源与生态专业分中心  
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《中国工程院战略咨询项目信息参考》是中国工程科技知识中心提供的一项信息推送服务，该服务组织专业团队，基于中国工程科技知识中心地理资源与生态专业分中心在工程科技领域积累的数据资源，面向战略咨询研究项目需求提供信息的搜集、整理、加工、推送服务。

该信息参考面向院士专家开放订阅，每两周一期，欢迎订阅。



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## 【动态信息】

### 1. 标题：扫码可对食品全程追溯！深圳发布首批 18 种“供深食品”

【羊城派】8 月 31 日上午，由深圳市市场监督管理局主办的“供深食品”上市启动仪式在福田区皇庭广场举行，现场发布了首批 18 种“供深食品”，囊括了鸡肉、猪肉、鱼、食用油、蔬菜等。华润五丰、晨光乳业等共计 11 家企业，成为首批供深食品的供应单位。深圳市副市长黄敏，全国政协委员林武，深圳市市场监管局党组书记、局长邝兵等领导，共同见证首批“供深食品”上市销售。

链接：

<https://baijiahao.baidu.com/s?id=1643376456273949429&wfr=spider&for=pc>

### 2. 标题：我国农产品质量安全形势较好 新举措推动优质农产品“优价热销”

【新华网】8 月 23 日，首届农产品质量安全高峰论坛暨农安县优质农产品精品馆上线仪式在宁波举行。会上，农业农村部农产品质量安全监管司司长肖放说，近 20 年来，在广大农产品质量安全工作者的共同努力下，我国农产品质量安全工作取得了令人瞩目的历史性成就，农产品质量安全水平大幅提升。

链接：<http://country.people.com.cn/n1/2019/0823/c419842-31314237.html>

## 【文献速递】

### 1. 基于侧链技术的供应链溯源系统设计与实现

作者：张朝栋，王宝生，邓文平

文献源：计算机工程，2019

摘要：采用中心化设计的供应链溯源系统存在诸多弊端，其系统性能与安全性依赖于中心服务器，除此之外还存在监管追责难、中间流转节点多、数据不透明等问题。为此，本文将区块链技术应用用于供应链溯源领域，综合考虑了实际生产中的问题，设计并实现了基于侧链技术的供应链溯源系统。该系统通过以太坊智能合约实现供应链中的货物管理、信息共享与产品溯源，同时，利用侧链技术对以太坊进行扩容，使其满足实际应用的需求。实验分析表明，该系统能够对供应链上产品进行全生命周期的追踪溯源，方便用户验证查询以及第三方的监管。性能方面，系统吞吐量可达 200TPS，每笔交易开销降至 0.07 元，与传统的方案相比具有较大优势。

### 2. 基于 LNMP 架构的农产品电商一体化溯源系统的设计与实现

作者：汤哲君，宋佳乾

文献源：电子测试，2018

摘要：本文介绍了使用 LNMP 构架下开发的“六盘山珍菌菇类农产品溯源电子商务一体化平台”系统，该系统在生产者与消费者之间产生了良好的连接及推动的效果。

### 3. 我国渔业科技发展特点及展望

作者：孙昭宁，孔伟丽，潘洋，李强，闫路路

文献源：农业科技管理，2019

摘要：文章回顾了我国渔业科技支撑体系建设、科技投入、科技平台建设和科技产出等发展历史，总结了我国渔业科技发展具有产业导向性、种业引领性和技术多样性的特点。在此基础上，提出我国渔业科技发展将更加注重水域生态养护技术创新、绿色水产养殖技术创新、智能化设施装备应用和基础科学数据积累的发展趋势。

#### **4. 浅析县级农产品质量安全监管的意义及发展对策**

作者：王晓妮，董亮，傅存仓，梁建锋，郑宏生

文献源：农业科技通讯，2019

摘要：文章分析了加强农产品质量安全监管工作的背景，分析了当前农产品质量安全工作中的问题隐患和制约因素，提出了明确职能定位、完善法规和标准体系、健全监管制度、规范生产经营行为、加强质量监测等对策建议。

#### **5. Farming Approaches for Greater Biodiversity, Livelihoods, and Food Security**

作者：Lucas A.Garibaldi, Barbara Gemmill-Herren,Raffaele D'Annolfo,Benjamin E.Graeub,Saul A.Cunningham, Tom D.Breeze

文献源：Trends in Ecology&Evolution,2017

摘要：Scientists and policy-makers globally are calling for alternative approaches to conventional intensification of agriculture that enhance ecosystem services provided by biodiversity. The evidence reviewed here suggests that alternative approaches can achieve high crop yields and profits, but the performance of other socioeconomic indicators (as well as long-term trends) is surprisingly poorly documented. Consequently, the implementation of conventional intensification and the discussion of alternative approaches are not based on quantitative evidence of their simultaneous ecological and socioeconomic impacts across the globe. To close this knowledge gap, we propose a participatory assessment framework. Given the impacts of conventional intensification on biodiversity loss and greenhouse gas emissions, such evidence is urgently needed to direct science-policy initiatives, such as the United Nations (UN) 2030 Agenda for Sustainable Development.

#### **6. Food quality traceability prototype for restaurants using blockchain and food quality data index**

作者：Reno Varghese George,Hari Om Harsh,Papri Ray,Alex K.Babu

文献源：Journal of Cleaner Production, 2019

摘要： As competition between organizations are evolving into competition between supply chains, to survive and indeed grow, it is necessary to deliver added value to customers. Traceability has emerged as one of the key measures of operational efficiencies within supply chains and ultimately, customer service. Over the years, organizations have deployed number of methods in delivering food traceability. This paper examines major methods of food traceability currently in existence and proposes a restaurant prototype for implementing more reliable food traceability using Blockchain and product identifiers. The prototype captures data from various stakeholders across the food supply chain, segregates it and finally, applies the Food Quality Index (FQI) algorithm to generate an FQI value. The FQI value helps in identifying whether the food is good for consumption on specified parameters. FQI value is generated based on extant standard storage and handling regulations specified by food safety authorities, and checks whether value so derived, is within the permissible range. The prototype helps in grading food quality for human consumption besides strengthening food (product) traceability. This prototype can be customized to address future requirements of traceability triggered through n

## **7. How blockchain improves the supply chain: case study alimentary supply chain**

作者： Roberto Casado-Vara, Javier Prieto, Fernando De la Prieta, Juan M. Corchado

文献源： Procedia Computer Science, 2018

摘要： Current supply chain is a linear economy model that directly or indirectly fulfills supply needs. But this model has some disadvantages, such as the relationships between the members of the supply chain or the lack of information for the consumer about the origin of the products. In this paper we propose a new model of supply chain via blockchain. This new model enables the concept of circular economy and eliminates many of the disadvantages of the current supply chain. In order to coordinate all the transactions that take place in the supply chain a multi-agent system is created for this paper.

## **8. 1 Blockchain's roles in meeting key supply chain management objectives**

作者：Nir Kshetri

文献源：International Journal of Information Management, 2018

摘要：Arrival of blockchain is set to transform supply chain activities. Scholars have barely begun to systematically assess the effects of blockchain on various organizational activities. This paper examines how blockchain is likely to affect key supply chain management objectives such as cost, quality, speed, dependability, risk reduction, sustainability and flexibility. We present early evidence linking the use of blockchain in supply chain activities to increase transparency and accountability. Case studies of blockchain projects at various phases of development for diverse purposes are discussed. This study illustrates the various mechanisms by which blockchain help achieve the above supply chain objectives. Special emphasis has been placed on the roles of the incorporation of the IoT in blockchain-based solutions and the degree of deployment of blockchain to validate individuals' and assets' identities.

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