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《互联网农产品质量》专题快报

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【动态信息】

1. 标题：良品铺子食品安全保障机制：全产业链可追溯

【凤凰网】今年 6 月，良品铺子斩获食品界的“奥斯卡奖”——“世界品质品鉴大会”大奖，并凭借其优良的品质获得了“顶级美味奖章”。这意味着良品铺子所代表的中国零食，获得国际食品行业的认可与推荐。获得国际认可与推荐的背后，离不开良品铺子对食品安全的严格把控——全产业链可追溯系统。

链接：**http://finance.ifeng.com/c/7rFORBka5B7**

2. 标题：“史上最严”！广西新出四十九条措施强化食品安全

【东方网】近日，自治区党委、政府印发了《关于深化改革加强食品安全工作的若干措施》（以下简称《若干措施》），就贯彻落实《中共中央 国务院关于深化改革加强食品安全工作的意见》精神，结合广西实际，提出了十个方面、四十九条具体措施，并明确了落实每项措施任务的牵头单位和配合单位，强化监管手段，压实监管责任，追求监管实效。

链接：

http://news.eastday.com/eastday/13news/auto/news/china/20191101/u7ai8893225.html

【文献速递】

1. 基于区块链的临安笋干质量安全溯源系统设计

作者：张尚锋，商玉乾，袁志颖，顾玉琦

文献源：现代农业科技，2019

摘要：本文在分析临安笋干质量安全现状和存在问题的基础上,结合区块链技术、物联网技术、二维码技术和条码技术,利用 ASP.net 语言和 SQL Server 等开发工具设计和实现了临安笋干质量安全溯源系统。该溯源系统能够建立笋干供应链中笋干与其来源之间的可靠联系,保证到达消费者手中的笋干来源清晰,并通过溯源系统追溯到企业和加工笋干工人的相关信息,为保证笋干质量安全提供了有效的途径。

2. 射频识别(RFID)技术在食品溯源中的应用研究进展

作者：赵训铭，刘建华

文献源：食品与机械，2019

摘要：射频识别(Radio Frequency Identification,RFID)技术操控简单、灵活、实用,已被应用于食品溯源系统中,旨在保障食品原料的质量安全。文章介绍了食品安全与溯源概念及 RFID 技术,综述了其在乳品、畜产品、水产品、果蔬等食品溯源系统中的应用研究进展,分析了 RFID 技术的优势及其推广应用难点,为食品的质量安全溯源体系提供理论指导。

3. 87Sr/86Sr isotope ratio and multielemental signatures as indicators of origin of European cured hams: The role of salt

作者：Ekaterina N.Epova,Sylvain Bérail,Tea Zuliani,Julien Malherbe,Laurence Sarthou,Manuel Valiente,Olivier F.X.Donard

文献源：Food Chemistry，2018

摘要：We have examined the potential of discriminant inorganic constituents (trace-, ultra-trace elements and Sr isotope ratios) to assess the origin of world famous brands of European dry-cured hams. The variation of the multielemental composition with principal component analysis allowed to discriminate the origin of Bayonne hams.

Determined ratio 87Sr/86Sr was recognized as a strong additional distinctive parameter. The ratio 87Sr/86Sr allowed to better separate all the different categories of hams in addition to the multi-elemental detection. The major contribution of the value 87Sr/86Sr for the Bayonne ham is directly related to its curing due to the salt used in process coming from the nearby salt mine Salies-de-Béarn. Since the salt represents around 4% of the final product, it will therefore strongly influence the elemental and isotopic composition of hams. The overall discrimination potential of strontium isotope ratio is evidenced in the final statistical discrimination of the origin of hams.

4. Determination of geographic origin of Chinese mitten crab (Eriocheir sinensis) using integrated stable isotope and multi-element analyses

作者：Renjun Luo,Tao Jiang,Xiubao Chen,Chaochen Zheng,Hongbo Liu,Jian Yang

文献源：Food Chemistry，2019

摘要：Geographical traceability is critical to the commercial viability of the highly valued Chinese mitten crab (Eriocheir sinensis). This study examined the possibility of utilizing a combination of multi-element and stable isotope analysis, together with multivariate statistical authenticity analysis, to identify the origins of 164 commodity crabs (using the third pereiopod as the sample material) from eight sites around China. The δ13C, δ15N values and the Na, Mg, Al, K, Ca, Mn, Cu, Zn, Sr, Ba contents differed significantly depending on the crabs' origin. The linear discriminant analysis showed that 99.4% of the samples were correctly classified and the cross-validated accuracy rate was 98.2%. Meanwhile, the support vector machine exhibited high discrimination ability with 99.4% accuracy. This study provides a non-conventional, integrated approach for determining the traceability of E. sinensis. This method offers the potential of being able to identify an even more diverse geographical range of E. sinensis origins.

5. Stable isotope techniques for verifying the declared geographical origin of food in legal cases

作者：Federica Camin,Markus Boner,Luana Bontempo,Carsten Fauhl-Hassek,Simon

D.Kelly,Janet Riedl,Andreas Rossmann

文献源：

Trends in Food Science & Technology,2017

摘要：Background

Consumers are increasingly interested in the provenance of the foods and European laws require protection against the mislabelling of premium foods. Methods for testing authenticity require robust analytical techniques that can be utilised by the various regulatory authorities. Of the many techniques, the most widely-used method is stable isotope ratio analysis.

Scope and approach

Focus is on the use of stable isotope ratios of H, C, N, O, S and Sr for verifying the geographical origin of food, cross-referencing it with examples of legal cases. State of the art including rules for building an authentic sample reference database (commonly called databank) and for interpreting the results obtained in actual cases is described. The overall objective is to provide stakeholders and competent authorities dealing with fraud, with a best-practice guide for its use.

Key findings and conclusions

Stable isotope ratios can differentiate foods on the basis of their geographical origin and, especially for light elements, can be measured reliably in routine work in different matrices and compared successfully between different laboratories. Examples of legal applications are grape products, orange juices, olive oil, cheese, butter, caviar. Sometimes, the cases are not brought directly to the court, but before further verifications (e.g. paper traceability, forensic accounting) are conducted. The system can satisfy the court when a robust databank of authentic samples exists, the methods used are officially recognized, validated and accredited, and the expert demonstrates that the conclusions are sufficiently robust and reliable to stand up to the required level of proof.

6. Characterizations of stable carbon and nitrogen isotopic ratios in wheat

fractions and their feasibility for geographical traceability: A preliminary study

作者：Hongyan Liu,Boli Guo,B oZhang,Yingquan Zhang,Shuai Wei,Ming Li,Syed Abdul Wadood,Yimin Wei

文献源：Journal of Food Composition and Analysi，2018

摘要：The study aims to investigate the characterization of stable isotopic ratios in wheat milling fractions (bran, wheat shorts, and flour) and extracts (defatted flour, gluten, lipid, starch, and crude fiber) and correlations among different matrices for each isotope, which could provide some references for the development and application of stable isotopes for geographical traceability of wheat and its milling products. Wheat samples with three genotypes were collected from three regions in China. δ13C and δ15N values in wholemeal, milling fractions and extracts were determined. Results showed that δ13C varied significantly among milling fractions and extracts, while no significant difference was found among δ15N values of different milling fractions or extracts. Each isotope shows significantly positive correlations among wheat fractions ($p < 0.01$). The variations of δ13C and δ15N were most contributed by fraction and region, respectively. Therefore, δ15N is suitable for geographical traceability of wheat and its milling products.

7. Stable isotope analysis of major bioelements, multi-element profiling, and discriminant analysis for geographical origins of organically grown potato

作者：AnjaMahne Opatić，Marijan Nečemer,Bojan Budič,Sonja Lojen

文献源：Journal of Food Composition and Analysis，2018

摘要：The traceability of food products in terms of their geographical origins is getting more and more public attention. To be certain of the origin of organically grown potato (Solanum tuberosum L.), samples were subjected to stable isotope analysis of the major bioelements (δ13C, δ15N, δ18O, δ34S) and to element profiling (Na, Mg, P, S, Cl, K, Ca, Mn, Fe, Ni, Cu, Zn, Mo, Br, Rb, Sr), which included the rare earth elements (Sc, Y, Nb, La, Ce, Pr, Nd, Dy, Er). The present study was performed at the scale of Slovenia,

which has diverse geographical characteristics. Using supervised pattern recognition statistical analysis (i.e., multivariate discriminant analysis), the characterisation and classification of organically grown potatoes were defined in terms of four Slovenian macro-regions: the Alpine, Dinaric, Mediterranean and Pannonian regions. The proposed model showed that 100% of the samples were correctly classified. However, an important prerequisite for official monitoring of the origin of a commodity is the availability of national and/or international databanks. As no databank exists for potato to date, the present study was performed to initiate the collection of data at the national level, to build a relevant and up-to-date databank. Once established, a reliable traceability model can be created.

8. δ 2H of wheat and soil water in different growth stages and their application potentialities as fingerprints of geographical origin

作者：Hongyan Liu,Yimin Wei,Shuai Wei,Tao Jiang,Senshen Zhang,Boli Guo

文献源：Food Chemistry，2017

摘要：The study aims to investigate whether stable hydrogen isotopic ratio (δ2H) in wheat and soil water can be used as the fingerprint for geographical origin of wheat. Wheat was planted in three different regions in China across two years. The δ2H values were determined for soil water in three growth periods, and rainwater, groundwater, and defatted wheat in the maturity stage. The δ2H values both in soil water and defatted wheat showed significant differences among different regions and the changing trend of δ2H value in wheat was consistent with that in soil water and rainwater, but different from that in groundwater. The δ2H values in soil water in the depth of 0–20 cm in the maturity stage were positively correlated to the δ2H values of defatted wheat ($y = 0.205x - 52.628$, $r2 = 0.645$) and could be used as the potential indicator for tracing wheat geographical origin.

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