



2023年第23期总398期

粮食和食物安全专题

本期导读

▶ 前沿资讯

1. 通过在全球范围内重新分配氮肥，实现更可持续的农业生产
2. 全世界解决饥饿问题的进展基本停滞不前
3. 你能相信有机食品标签吗？
4. 最低收购价政策托底粮食安全
5. 当标签撒谎时
6. Tropentag 2023：粮食系统转型之路

▶ 学术文献

1. 从21世纪粮食危机看中国粮食安全治理现代化
2. 种业振兴与粮食安全
3. 大国粮食安全视域下我国粮食国际贸易问题及治理
4. 新中国成立以来党的粮食安全政策及时代启示
5. 法律和政策可以支持可持续饮食

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6. 粮食收储制度市场化改革与粮食安全保障体系构建——基于临时收储政策改革的观察

7. 农业生产性服务业何以赋能农产品出口贸易竞争力？

8. 氮肥在全球农田中的重新分配有助于在环境边界内实现粮食安全

9. 空间差异化的氮供应是全球粮食化肥价格危机的关键

➤ 相关成果

1. 阿根廷干旱加剧推动美国豆粕出口创历史新高

2. 印度尼西亚因厄尔尼诺现象而面临越来越大的野火和农作物受损风险

3. 美国农业部进一步下调对美国玉米和大豆的预测

4. 使用食品的唯一指纹检测欺诈行为

➤ 专业会议

1. 生物经济是农业粮食体系向更大可持续性转型的催化剂

中国农业科学院农业信息研究所

联系人：刘靖文；顾亮亮

联系电话：010-82109652

邮箱：agri@ckcest.cn

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▶ 前沿资讯

1 . More sustainable agriculture through the global redistribution of nitrogen fertiliser (通过在全球范围内重新分配氮肥, 实现更可持续的农业生产)

简介: Today's grain production could be maintained with a significantly lower global level of overall fertiliser if the application of nitrogen fertiliser was evenly distributed across the areas under cultivation. This is demonstrated by models developed by researchers at the Karlsruhe Institute of Technology (KIT)/Germany. Currently, around 60 per cent of world-wide nitrogen fertiliser application is accounted for by grain crops such as maize, wheat or rice. These crops need nitrogen fertiliser to grow and to enhance their yields. However, large amounts of the fertiliser get into the soil and groundwater or are released into the atmosphere as laughing gas. They thus pollute the environment and contribute to biodiversity loss, climate change and the depletion of the ozone layer. This is a particular problem in the major areas under cultivation in North America, Europe and East Asia, where comparatively large amounts of nitrogen fertiliser are applied. KIT researchers have now developed models of how a world-wide redistribution of the effect which nitrogen fertiliser application could have. For this purpose, they simulated different amounts of fertiliser at various locations and calculated the overall production of maize, wheat and rice between 2015 and 2030 with the aid of the biochemical model LandscapeDNDC.

来源: rural 21

发布日期: 2023-10-20

全文链接:

<http://agri.nais.net.cn/file1/M00/10/32/Csgk0GU2KsCAfUliAAwJSef6Z8E102.pdf>

2 . Progress in tackling hunger world-wide has largely stalled (全世界解决饥饿问题的进展基本停滞不前)

简介: Multiple overlapping crises are impeding global efforts to tackle hunger, according to the 2023 Global Hunger Index, which shows that hunger are at "serious" or "alarming" levels in 43 countries. Following years of progress in reducing hunger since 2015, the world is now hardly moving on. This is reflected in the Global Hunger Index (GHI), published by Welthungerhilfe and Concern International in October 2023. Despite many political pledges and international conferences, a reversal of the trend has still not since been achieved. The report looks at the food situation in 136 countries. While 43 countries continue to display a very serious or serious hunger level, in 18 countries, hunger has further risen since 2015. A total of 58 countries are not going to succeed in reaching a low level of hunger by 2030. Sub-Saharan Africa and South Asia are once again the regions with the highest rates of hunger.

来源: rural 21

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<http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmM20eAPsGCAAt9TIPM878953.pdf>

3 . Can You Trust the Organic Food Label? (你能相信有机食品标签吗?)

简介: Organic farming is a practice that emphasizes natural processes, ecological balance and the conserving of resources. The USDA's National Organic Program (NOP) was first enacted in 1990, with the laws being amended occasionally since then. Synthetic fertilizers and genetic engineering are prohibited, among other measures. The label can cover crops, livestock and dairy products, and the industry is huge—worth about \$62 billion last year. But the process to become certified as an organic farming operation is a lengthy one. It takes three years to allow for any previous synthetic substances applied to the fields or used on the farm to filter out. And in that time, farmers are on the hook for the higher costs associated with organic farming, without any guaranteed return. Then, once farms have been certified, there's a yearly testing process, which dives deep into the farm's yield and audits its books. "We spend a few hours with the inspector, and that's a walk around every garden plot we have, and talking about what we've grown there and our practices, the rotation, any pest issues, anything like that," explains Shepsi Eaton, owner and farmer at Darthia Farm in Gouldsboro, ME. The inspector also asks a variety of questions geared towards figuring out what the farm produced and how that matches its receipts. "How much seed did you purchase? How much did you plant? How much area did you plant? What were the yields in a given week? How much did you harvest? How much did you sell?"

来源: modern farmer

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http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmM05CAKXoIARAR_gg3gfk013.pdf

4. 最低收购价政策托底粮食安全

简介: 除了小麦最低收购价格政策，我国还实施水稻最低收购价政策。小麦和水稻是我国两大口粮，二者能否丰收，直接关系到中国饭碗端得稳不稳。历史上，“谷贱伤农”现象反复上演，导致粮食生产波动起伏，影响国家粮食安全。2004年我国全面放开粮食市场，为了保障种粮农民利益和国家粮食安全，国家在主产区持续实施小麦和水稻最低收购价政策，至今已有近20年时间，期间虽有调整，但万变不离其宗，最大程度保护了种粮农民利益，也为保障国家粮食安全作出重要贡献。2004年至今，我国粮食生产没有出现巨幅波动，粮食连年丰收，库存充足，实现了谷物基本自给、口粮绝对安全，有效抵御极端天气、疫情、地区冲突等各种不确定因素对我国粮食市场的冲击，这与粮食最低保护价政策的实施不无关系。目前来看，粮食最低收购价政策仍然是保护农民利益、维护国家粮食安全的重要制度安排，在为市场粮价提供底部支撑、稳定农民种粮预期、确保稳产增产、维护粮价稳定等方面发挥着重要作用。当前，我国粮食安全面临极端天气高发、地区冲突不断等各种因素的严峻挑战，保持粮食最低收购价政策的连续性和稳定性具有十分重要的意义。有关部门要抓好小麦最低收购价政策的落实及宣传引导，充分发挥粮食价格支持政策的效应，调动农民种粮积极性，更好地保障国家粮食安全特别是口粮绝对安全。

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<http://agri.nais.net.cn/file1/M00/10/32/Csgk0GU2etmAWznSAAC6tLcZwxA332.pdf>

5 . When Labels Lie (当标签撒谎时)

简介: Dr. Rick Schifferstein is the director of the Food & Eating Design Lab at the Delft University of Technology. He works with other researchers and designers to improve people's interactions with their food. Schifferstein's research into food labels has included one study that found that meat labels linking meat consumption with poor animal welfare discouraged customers from buying the product. But, in general, it doesn't need to be an explicit claim to sway a customer. Even the feel of the packaging, he says, can inform the associations the consumer makes with the product. In the supermarket, consumers might not even realize how the words, designs, colors and textures used in the design are influencing their buying decisions, especially when confronted with multiple options on the shelf. Decision-making in the supermarket is very fast, says Schifferstein. Angela Larisch, strategy director for Murmur Creative in Portland, Oregon, says that often what she sees with the brands she works with is not intentional deception but a lack of clarity. Murmur Creative designs branding and packaging for its clients, many of which are food and beverage companies. Part of what it does is help companies cut through buzzwords to get specific about the information they want to convey. For example, when food companies describe their product as "clean," Murmur Creative will dig into what that actually means to them and how to communicate that to consumers.

来源: modern farmer

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全文链接:

<http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmM1-uATv3HAMvXKAcIUVs138.pdf>

6 . Tropentag 2023: Pathways for food systems transformation (Tropentag 2023: 粮食系统转型之路)

简介: This year's Tropentag – one of the biggest scientific conferences in central Europe on agriculture, nutrition and food security in the Global South - was dedicated to the topic "Competing pathways for equitable food systems transformation – trade-offs and synergies". The urgently needed transformation of our food systems was at the centre of this year's Tropentag and with it the hotly contested question of how to analyse and finally overcome the dichotomy between technical solutions on the one hand and alternative options which focus more on paradigm shifts and the respective underlying webs of relations in our food systems on the other. Jointly organised by Humboldt-Universität zu Berlin and the Leibniz Centre for Agricultural Landscape Research (ZALF), the Tropentag – an annual interdisciplinary conference on research in tropical and subtropical agriculture, natural resource management and rural development took place in Berlin/Germany in late September. It included over 130 presentations in

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roughly 30 sessions as well as 400 poster presentations. More than 1,000 experts registered for the event, and over 30 pre-conference workshops were held. Germany's Federal Minister for Food and Agriculture, Cem Özdemir, acknowledged the large number of young researchers from all over the globe who participated in the conference and encouraged them to go beyond scientific learning: "Use the networking opportunities because it is only together that we will meet the SDG agenda." The "Meet and greet" exchange between the invited keynote speakers and junior scientists who were able to address renowned researchers with questions regarding career path development and discuss upcoming research opportunities and research topics in an Apéro was a good opportunity for this.

来源: rural 21

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➤ 学术文献

1. 从21世纪粮食危机看中国粮食安全治理现代化

简介: 粮食安全是事关人类生存的根本性问题。21世纪以来,全球历经了2007—2008年、2010—2011年、2020年和2022年四次粮食危机,影响范围和危害程度扩大升级、内源困境与外生冲击相互交织、粮食政治化和武器化问题更加凸显、应对措施由短期无序性向长期系统性转变是四次危机的规律性特征。经验表明,货币超发、收入分配不均、过度相信泛贸易主义等与危机密切相关,且危机强烈的调整效应会加速全球贸易格局重塑,立足国内才是防范和化解危机最根本的途经。从总体来看,四次粮食危机对我国影响不大,但依然警示我们应积极推动粮食安全治理体系和治理能力现代化。树立底线思维,形成“立足国内”的高度共识;调整完善社会制度政策,建立种粮农民职业化体系;重塑粮食支持政策,促进要素自由流动、进入粮食领域;把握战略机遇期,寻求与粮食出口大国合作最大公约数;在全球粮食安全治理框架中,从参与者向塑造者转变等方面筑牢粮食安全防线。

来源: 中国知网

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全文链接:

<http://agri.nais.net.cn/file1/M00/10/32/Csgk0GU2fT-AFL6FABASi7t0dwU686.pdf>

2. 种业振兴与粮食安全

简介: 种业振兴对保障国家粮食安全具有重要的战略意义。推进中国种业振兴以确保粮食安全,必须坚持大国土观与大食物观,在动态发展格局下解决种业的“卡脖子”问题,在协同发展思路下重视种业振兴的必要匹配条件,在国际竞争与合作视野下拓展种业振兴的发展空间。本文从粮食安全影响因素优先序的角度揭示种业振兴的基础性、关键性与决定性作用;在此基础上,回顾中国种业发展的历程,厘清了粮食安全与种业振兴的关系;在新的粮食安全格局下,解析大食物观下种业振兴的内涵与面临的挑战,对未来中国种业振兴的健康良序发展进行展望并提出对策建议。

来源: 中国知网

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<http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmNMKOARGppABGSqoFLido312.pdf>

3. 大国粮食安全视域下我国粮食国际贸易问题及治理

简介: 粮食安全事关国运民生。新中国成立以来,党和人民政府高度重视粮食安全问题。然而,由于我国人口众多,耕地资源有限,农产技术相对落后,在粮食需求、粮食生产效益及粮食质量等方面存在不足。改革开放以来,尽管历届政府出台强力政策大力促进农业发展,保障了粮食的稳定供给,但我国仍然存在土地资源利用率不高、粮食品质参差不齐、生产成本消耗较大等深层次问题,相较于人民群众日益增长的粮食需求和对美好生活的向往,我国仍存在较大的粮食缺口,需要通过国际贸易进口粮食。从大国粮食贸易安全角度看,我国粮食国际贸易存在部分粮食进口依存度大、粮食贸易结构性矛盾突出、单品种粮食进口渠道狭窄、粮食在国际市场上竞争力不足、粮食食品卫生安全亟待加强等突出问题。提高粮食供给量,减少部分粮食对外依存度;推动粮食供需均衡,缩小粮食贸易结构性矛盾;分散粮食进口风险,保证粮食进口安全;降低粮食生产成本,提高粮食国际竞争力;促进粮食高质量转型,保障粮食营养安全,从这些方面入手,是我国加强粮食国际贸易治理、确保大国粮食安全的有效路径。

来源: 中国知网

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<http://agri.nais.net.cn/file1/M00/10/32/Csgk0GU2fCiA0gMoAAko1-kQoV4096.pdf>

4. 新中国成立以来党的粮食安全政策及时代启示

简介: 新中国成立以来,党的粮食政策按照政府对粮食市场的干预程度可分为新中国成立初期粮食自由购销阶段(1949-1952)、计划经济时期统购统销阶段(1953-1977)、改革开放后“双轨制”阶段(1978-1993)、粮食购销市场化改革阶段(1994-2003)、粮食系统支持保护阶段(2004-2014)及粮食安全系统性巩固阶段(2014-2021)等阶段。尽管每个阶段粮食政策内容、政策目的以及政策效果不同,但粮食政策的调整都遵循了计划经济体制向市场经济体制的转变、符合不同主体的利益调整以及宏观经济的发展变化及改革需要,其核心是坚持以人民为中心的粮食安全政策演进逻辑。新时代粮食安全政策应服务于新的粮食安全观,着眼于保障粮食产能安全、粮食质量安全、粮食结构安全、粮食贸易安全和粮食要素安全。

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<http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmNL6WAEXCyABefUibCtxI895.pdf>

5. Law and policy can support sustainable diets (法律和政策可以支持可持续饮食)

简介: Overall, law and policy should not be ignored when considering the future sustainability of our food systems and global diet. A concerted effort is needed by

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policymakers to prioritise the introduction of context-specific food laws and policies, particularly in developed regions with less risk of food security. The legal systems that govern our agricultural markets need to be modernised to reflect current sustainability priorities. Diet is not solely the result of public choice and cultural norms, and steps can be taken by these policymakers to help encourage the necessary shifts in our food systems. Non-communicable disease and public health goals can be targeted in a mutually beneficial way with climate goals in wealthier groups with typically higher consumption of resource-intensive dietary components, such as beef. At the same time, vulnerable groups and farmer livelihoods can be protected where appropriate to ensure a fair transition to more sustainable food systems overall. Some may argue that law and policy may be overreaching its competencies by seeking to influence dietary choices, but when law makers have historically played a significant role in shaping current agricultural markets and dietary trends, there is a responsibility to address these distortions and strive towards agreed international climate goals. Food security and vulnerable farmers are not harmed if emissions solutions are context-specific and tailored in the ways outlined. Given current science and recommendations on striving for healthy and sustainable diets, the only excuses for inaction from policymakers are political. With the climate crisis looming, these steps must be taken within our agricultural systems to tackle the current and future contributions of the sector to global greenhouse gas emissions. Promising developments are beginning to emerge, but further action is required to tackle the taboo of addressing law and policy's role in the unsustainable nature of our current global food systems.

来源: Communications Earth & Environment

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全文链接:

<http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmNCniAVLjMAAZe-VW2NZw302.pdf>

6. 粮食收储制度市场化改革与粮食安全保障体系构建——基于临时收储政策改革的观察

简介: 以玉米与大豆临时收储政策改革为突破口的粮食收储制度市场化改革,是推进农业供给侧结构性改革、理顺粮食价格形成机制、破解粮食“三高”等突出问题的重要举措。但是,粮食收储制度市场化改革对粮食安全保障也产生了巨大冲击。粮食收储制度市场化改革短期冲击效应明显,长期稳定机制尚未有效建立;粮食市场波动明显加剧,粮食生产者面临着较强的收入不确定性冲击;玉米高库存问题得到扭转,但粮食供需结构性矛盾依旧存在;在需求刚性增长约束下进口数量激增,进口安全风险防范压力明显增大;粮食生产者直接补贴政策存在溢出效应,粮食生产者支持政策有待完善。新形势下,应加快粮食安全保障顶层制度设计,健全粮食生产稳定机制,完善国际粮食进口风险防范机制,加强粮食产业安全保障机制建设。

来源: 中国知网

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全文链接:

<http://agri.nais.net.cn/file1/M00/10/32/Csgk0GU2eimAab8eAB5mPc4a2r4348.pdf>

7. 农业生产性服务业何以赋能农产品出口贸易竞争力?

简介: 农业生产性服务业为农业提供全产业链的服务,提升农业生产效率和农产品质量,进而成为提高农产品出口贸易竞争力的突破口。基于2010—2021年中国30个省份(不包括港澳台及西藏)的面板数据,研究了农业生产性服务业对农产品出口贸易竞争力的影响,同时引入包含工业化水平的中介效应模型,验证了“农业生产性服务业-工业化水平-农产品出口贸易竞争力”的传导路径。结果表明:第一,农业生产性服务业通过提供专业化服务促进农业技术创新、提升农产品质量和附加值,进而赋能农产品出口贸易竞争力。第二,工业化水平在两者关系中存在中介效应,且呈现一定的异质性特征,农业生产性服务业和工业化水平对粮食主产区农产品出口贸易竞争力的影响高于非粮食主产区,农业生产性服务业对非粮食主产区工业化水平的影响显著为正,对粮食主产区的影响不显著。第三,在城镇化、数字化和劳动者素质较高的地区,农业生产性服务业对农产品出口贸易竞争力的影响更显著;在中西部地区和基础设施建设水平较低的地区,其对农产品出口贸易竞争力的影响更强。因此,各省应积极发展农业生产性服务业,推进农村工业化进程,提高农产品质量和附加值,打造农村发展新模式。

来源: 中国知网

发布日期:2023-10-12

全文链接:

http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmNLbeACHIrAAr3zD0x6_I829.pdf

8 . A redistribution of nitrogen fertiliser across global croplands can help achieve food security within environmental boundaries (氮肥在全球农田中的重新分配有助于在环境边界内实现粮食安全)

简介: A major societal challenge is to produce sufficient food for a growing global population while simultaneously reducing agricultural nitrogen pollution to within safe environmental boundaries. Here we use spatially-resolved, process-based simulations of cereal cropping systems (at 0.5° resolution) to show how redistribution of nitrogen fertiliser usage could meet this challenge on a global scale. Focusing on major cereals (maize, wheat and rice), we find that current production could be (i) maintained with a 32% reduction in total global fertiliser use, or (ii) increased by 15% with current nitrogen fertiliser levels. This would come with substantial reductions in environmental nitrogen losses, allowing cereal production to stay within environmental boundaries for nitrogen pollution. The more equal distribution of nitrogen fertiliser across global croplands would reduce reliance on current breadbasket areas, allow regions such as Sub-Saharan Africa to move towards self-sufficiency and alleviate nitrogen pollution in East Asia and other highly fertilised regions.

来源: rural 21

发布日期:2023-09-28

全文链接:

<http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmM3-qAMVJ6ACODMV2JYsI402.pdf>

9 . Spatially differentiated nitrogen supply is key in a global food-fertilizer price crisis (空间差异化的氮供应是全球粮食化肥价格

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危机的关键)

简介: A regional geopolitical conflict and sudden massive supply disruptions have revealed vulnerabilities in our global fuel-fertilizer-food nexus. As nitrogen (N) fertilizer price spikes threaten food security, differentiated responses are required to maintain staple cereal yields across over- and underfertilized agricultural systems. Through integrated management of organic and inorganic N sources in high- to low-input cereal production systems, we estimate potential total N-fertilizer savings of 11% in India, 49% in Ethiopia and 44% in Malawi. Shifting to more cost-effective, high-N fertilizer (such as urea), combined with compost and integration of legumes, can optimize N in N-deficient systems. Better targeted and more efficient N-fertilizer use will benefit systems with surplus N. Geospatially differentiated fertilization strategies should prioritize high-N fertilizer supply to low-yield, N-deficient locations and balanced fertilization of N, P, K and micronutrients in high-yield systems. Nationally, governments can invest in extension and realign subsidies to enable and incentivize improved N management at the farm level.

来源: Nature Sustainability

发布日期: 2023-06-29

全文链接:

<http://agri.nais.net.cn/file1/M00/10/32/Csgk0GU2WAKANz72AC0kpH4LSkw065.pdf>

➤ 相关成果

1 .Worsening Argentine Drought Drives Record US Soybean Exports (阿根廷干旱加剧推动美国豆粕出口创历史新高)

简介: Argentina is normally the world's largest exporter of soybean meal, but drought forced the country to cede that role to neighboring Brazil in the just-ended 2022/23 crop year. Now drought is again damaging prospects for the Argentine soybean crop currently being planted. Drought readings have risen to "severe" levels in recent days, as measured by the Gro Drought Index, weighted to Argentina's soybean areas using Gro's Climate Risk Navigator for Agriculture. In addition, soil moisture is at the lowest level since at least 2010, as seen in this Gro Navigator display. The continued dryness seems to defy this year's onset of El Niño, which has historically brought higher precipitation to Argentina's croplands, as Gro wrote about here. Gro's current forecast data predicts below-average rainfall in soybean growing areas through October, but generally normal precipitation levels for November.

来源: Gro intelligence

发布日期: 2023-10-20

全文链接:

<http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmNDzOALKkGAAyzqqMjapY856.pdf>

2 . Indonesia Faces Growing Risk of Wildfires and Crop Damage Due to El Niño (印度尼西亚因厄尔尼诺现象而面临越来越大的野火和农作物)

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受损风险)

简介: While current drought levels are not as extreme as 2015, they still bear monitoring. So far in October, which officially marks the beginning of Indonesia's wet season, aggregated precipitation is 45% below the 10-year average. Dry conditions brought on by El Niño increase risk of wildfires, which can feed for months on the large peat deposits on Indonesia's islands, as shown by Gro's Observed Fire Indicator, which displays wildfire severity globally by percentage of land area affected. 2015 was particularly severe, with fires burning around 3 million hectares of forests and peatlands on the east coast of Sumatra and in central Kalimantan. Indonesian crops and exports also are expected to be hurt by El Niño. Palm oil yields are forecast to suffer in the coming months due to the declining soil moisture and increasing drought, as Gro wrote about here. Indonesia is the world's largest producer and exporter of palm oil — the most popular edible oil — and palm plantations need regular precipitation to replenish water tables that are constantly being depleted by the thirsty trees.

来源: Gro intelligence

发布日期: 2023-10-17

全文链接:

http://agri.nais.net.cn/file1/M00/10/32/Csgk0GU2W1uASc_1AA0wN1PWLdQ131.pdf

3 . USDA Further Trims Its Forecasts for US Corn and Soybeans (美国农业部进一步下调对美国玉米和大豆的预测)

简介: In its October WASDE report, the USDA forecast average 2023/24 corn yields of 173 bushels per acre, down 0.5% from last month's projection. Corn production was forecasted at 382.6 million tonnes (15.064 billion bushels) — the third highest in history. That estimate is down 0.5% from last month but is nearly 10% above last year's output. Soybean yields are seen at 49.6 bu/acre, down 1% from last month. The USDA projected soybean production at 111.7 million tonnes (4.104 billion bushels), which would be 4% below last year. This represents the smallest soybean crop in four years, as 2023/24 soybean planted acreage dropped by 4.5% from last year.

来源: Gro intelligence

发布日期: 2023-10-13

全文链接:

<http://agri.nais.net.cn/file1/M00/03/60/Csgk0YmNDS-AQQJ2AA2ivA3TfeA894.pdf>

4 . Using a Food's Unique Fingerprint to Detect Fraud (使用食品的唯一指纹检测欺诈行为)

简介: Let's say there's a food you suspect isn't quite as advertised. Maybe that cheese that's supposedly been aging for five years doesn't have the right funk or the saffron you bought doesn't seem the right shade of red. How would you go about testing it? What would that even look like? Chemically, we have the ability to detect these differences in foods. If you send it off to an analytical chemist, they can pop the suspect food in their mass spectrometer—worth about half a million dollars and the size of a large closet—and let you

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know fairly precisely if there's anything fishy with your fish. That's not so accessible for the average shopper. Bartek Rajwa, a professor of bioinformatics at Purdue University, kept this issue in mind when he started looking at ways to detect food fraud. Was there a system that was relatively affordable? Could he make it portable? Could he find a way to have more immediate results, instead of waiting for weeks in a traditional lab test? In a word: yes.

来源: modern farmer

发布日期:2023-10-10

全文链接:

http://agri.nais.net.cn/file1/M00/10/32/Csgk0GU2ImWALvn_AKeDDutR7xY298.pdf

➤ 专业会议

1 . Bioeconomy is a catalyst for agrifood systems transformation to greater sustainability (生物经济是农业粮食体系向更大可持续性转型的催化剂)

简介: The term bioeconomy, as defined by the Global Bioeconomy Summit of 2020, involves "the production, utilization, conservation, and regeneration of biological resources, including related knowledge, science, technology, and innovation, to provide sustainable solutions (information, products, processes and services) within and across all economic sectors and enable a transformation to a sustainable economy." Examples include biopesticides and biofertilizers (such as compost), bio-based plastics, biomass re-use (such as crop residues for briquettes and pellets, or fish waste for pharmaceuticals), and sustainable bioenergy. FAO sees the bioeconomy as providing nutritious, safe food to a growing global population, providing sustainable development opportunities and new jobs while reducing environmental harm and waste. Its potential goes far beyond cutting greenhouse gas emissions and restoring biodiversity. It opens new opportunities for green development and jobs in agriculture and other sectors, bolstering food security and nutrition, rural livelihoods, lives of Indigenous Peoples and local communities, and innovation at all levels of society. According to one projection, a resource-efficient, circular bioeconomy could be worth as much as \$7.7 trillion by 2030. Around 60 countries and regions already have bioeconomy or bioeconomy-related strategies and another 10 are currently developing them.

来源: FAO

发布日期:2023-10-19

全文链接:

http://agri.nais.net.cn/file1/M00/10/32/Csgk0GU2dxaAcAf7ABmFTdF_Vfw640.pdf