

《中国农业发展战略研究》专题快报

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【动态资讯】

1. 我国打响农业农村污染治理攻坚战

【人民网】8日，记者从生态环境部了解到，日前生态环境部联合农业农村部印发《农业农村污染治理攻坚战行动计划》，要求按照实施乡村振兴战略的总要求，强化污染治理、循环利用和生态保护，深入推进农村人居环境整治和农业投入品减量化、产业模式生态化等，深化体制机制改革，发挥好政府和市场作用，补齐农业农村生态环境保护突出短板。行动计划提出，通过三年攻坚，乡村绿色发展加快推进，农业农村污染治理工作体制机制基本形成，农业农村环境监管明显加强。行动计划提出了五方面主要任务。包括加强农村饮用水水源保护、加快推进农村生活垃圾污水治理、着力解决养殖业污染、有效防控种植业污染、提升农业农村环境监管能力。相关负责人指出，开展农业农村污染治理要坚持因地制宜、实事求是。“各地要根据环境质量、自然条件、经济水平和农民期盼，科学确定本地区整治目标任务，集中力量解决突出环境问题。坚持从实际出发，采用适用的治理技术，注重实效，不搞一刀切，不搞形式主义”。

链接:

<http://env.people.com.cn/n1/2019/0212/c1010-30624067.html>

2. 湖南邵阳双清区：着力治理乡村土壤污染

【中国农业新闻网】本报讯 行走在如诗如画的湖南省邵阳市双清区农村田间地头，犹如步入一幅美丽的乡村画卷：平坦整洁的水泥路四通八达，绿草如茵在蓝天丽日的映衬下显得格外舒适柔和，大棚内的无公害蔬菜长势喜人。双清区被湖南省委、省政府列为邵阳市唯一的分类指导加快推进全面建成小康社会一类县市区。近年来，该区建立长效机制持续实施“净土保卫战”，组织开展土壤污染地块调查和土壤污染源详查工作，全面摸清全区土壤污染现状，出台土壤治理行动方案，建立土壤治理项目库，分年度按计划

逐项实施。全面启动土壤污染点源治理工作，近两年共争取中央专项治理资金5800余万元。渡头桥镇两塘村在“净土保卫战”中尝到了甜头，153户贫困户通过村里的香葱基地、东烨种植专业合作社、无花果基地等生态产业帮扶实现脱贫，户年均收入达2万元以上。

链接:

http://www.farmer.com.cn/jjpd/nz/nzdt/201902/t20190212_1432135.htm

3. Scientists advance new technology to protect drinking water from Lake Erie algal toxins

【EurekaAlert!】 Before the 2014 Toledo Water Crisis left half a million residents without safe drinking water for three days, Dr. Jason Huntley's research at The University of Toledo focused on bacteria that cause pneumonia. After the harmful algal bloom prompted the city of Toledo's "Do Not Drink" advisory, the microbiologist expanded his research projects to target microcystin. "I live here, and I have a young son," said Huntley, associate professor in the UT Department of Medical Microbiology and Immunology in the College of Medicine and Life Sciences. "I don't want toxins in the water, and I am committed to helping the water treatment plant protect the public." Huntley's research lab recently made major progress in his mission to create a biofilter that uses naturally occurring Lake Erie bacteria to remove microcystin released by harmful algal blooms from drinking water, reducing or eliminating the use of chlorine and other chemicals.

链接:

https://www.eurekaalert.org/pub_releases/2019-02/uot-san020719.php

4. USDA: corn, soybeans stocks lower than last forecast

【AgroNews】 The USDA has tightened the domestic balance sheets for soybeans and corn in the first major set of numbers since the shutdown. Corn ending stocks were down slightly from December with a lower 2018 production total and reduced expectations for ethanol use, while soybeans were also modestly lower on a smaller crop and lower export demand. Wheat ending stocks were up from the previous report because of lower domestic use projections. The delayed 2018 production total for corn was below most analysts estimates following a bigger than expected cut to the average yield figure, while soybeans were close to expectations, but down from December, with both beans and corn seeing an impact from the late harvest in many areas. The USDA also lowered soybean production estimates for Argentina and Brazil and reduced its soybean import estimate for China. The 2018/19 marketing year runs through May for wheat, August for soybeans and corn, and September

for soybean meal and oil. January's report was effectively canceled by the government shutdown. The next set of supply and demand estimates, scheduled for March 8th, could be delayed if the federal government shuts down again. Current funding runs through February 15th.

链接:

<http://news.agropages.com/News/NewsDetail---29335.htm>

5. Uncertainties in US-China Trade War Cause Anxiety among Global Soybean Industry

【AgroNews】In April 2018, the US government released a list of Chinese goods that may be subjected to new tariffs, and the Chinese government quickly counterattacked and decided to impose tariffs on the US-origin soybeans, automobiles, chemicals and other goods, which initiated the US-China trade war. Soybeans, as a very important bulk agricultural product in the US-China trade, unfortunately become the "sacrifice" of the political battle between the two superpowers. China is the world's largest importer of soybeans, while the US is the world's largest soybean producer. China is traditionally the number one export market for the US, importing US soybeans worth US\$13.9 billions in 2017, which is 60% of the total US exports and nearly one out of every three rows of annual US soy production. Therefore, the trade war will certainly have a huge and far-reaching impact on China, the US, and even the global soybean market. Recently, a seemingly inspiring event occurred with respect to the US-China trade war on December 1, 2018, the leaders of China and the US reached a 90-day truce at the G20 Summit held in Buenos Aires, the capital of Argentina. According to the agreement, both sides will not increase tariffs for 90 days, and both sides should take this time to resolve trade disputes between the two countries. Before this article was completed, i.e. January 10, 2019, China re-launched two rounds of US soybeans purchases. However, industry insiders are still not optimistic about the trend of the US-China trade war after 90 days and the resulting impact on the soybean industry.

链接:

<http://news.agropages.com/News/NewsDetail---29346.htm>

6. A small number of crops are dominating globally. And that's bad news for sustainable agriculture

【University of Toronto】A new U of T Scarborough study suggests that globally we're growing more of the same kinds of crops, and this presents major challenges for agricultural

sustainability on a global scale. The study, done by an international team of researchers led by U of T assistant professor Adam Martin, used data from the U.N.'s Food and Agricultural Organization (FAO) to look at which crops were grown where on large-scale industrial farmlands from 1961 to 2014. They found that within regions crop diversity has actually increased in North America for example, 93 different crops are now grown compared to 80 back in the 1960s. The problem, Martin says, is that on a global scale we're now seeing more of the same kinds of crops being grown on much larger scales. In other words, large industrial-sized farms in Asia, Europe, North and South America are beginning to look the same.

链接:

<https://utsc.utoronto.ca/news-events/breaking-research/small-number-crops-are-dominating-globally-and-thats-bad-news-sustainable>

7. Water mismanagement triggered ecological disaster in Australian rivers, panel concludes

【Science】 Even before a recent massive fish die-off put Australia's Murray-Darling Basin in the headlines worldwide, scientists had been warning that mismanagement of the region's scarce water was setting the stage for an environmental disaster. They were right, a report released today by a special government commission concludes. The yearlong inquiry found that too much water is being taken out of the river network for irrigation and household use. The Murray-Darling system comprises more than 100 named waterways that drain 1 million square kilometers in the country's arid southeast. Heavy irrigation has left the lower reaches of the rivers running at about a third of historical levels and sometimes completely dry. Occasionally, as over the past 6 weeks, the flow is too low to flush nutrients from agricultural runoff through the system, leading to algal blooms and subsequent fish kills.

链接:

<http://www.sciencemag.org/news/2019/01/water-mismanagement-triggered-ecological-disaster-australian-rivers-panel-concludes>

8. 农业农村部开展防范农药安全风险检查

【中华人民共和国农业农村部】本网讯 近日,农业农村部派出8个工作组,分赴北京、天津、河北、江苏、浙江、山东、广东、广西、海南、云南等10个省(区、市)开展农药安全风险防范督导检查。据介绍,此次农药安全风险防范督导检查主要包括三方面内

容：一是检查北方保护地蔬菜生产基地、“南菜北运”生产基地的农药安全使用情况，重点检查是否使用禁限用农药；二是检查农药生产企业安全生产责任落实情况，重点检查高毒农药生产企业 and 安全隐患大的企业；三是检查农药经营单位安全防范情况，重点检查定点经营限制使用农药门店的安全措施。与此同时，农业农村部发出通知要求各省（区、市）农业主管部门，强化责任落实，组织开展农药安全风险检查，确保农药安全生产、规范经营和科学使用。

链接:

http://www.moa.gov.cn/xw/zwdt/201901/t20190128_6170803.htm

9. 75元一斤的草莓这样种成

【中国农业新闻网】自进入冬季以来，山东省济南市历城区唐王镇东王村草莓种植户李殿忠的大棚，不时就会有村民走进来瞧瞧，既有相熟的庄乡邻居，也有素未谋面的外村农民。这是为什么呢？原来，李殿忠的大棚草莓从去年11月3日就开始上市了，每斤售价一度高达75元，比周围同期移栽的大棚草莓早了17天上市。而且，李殿忠还因为从事草莓脱毒苗繁育，憨厚的他都是把最好的苗子留给客户，自己留下一些弱苗栽种。去年8月中旬，大棚还因为强降雨进了水。“当时苗子就黄了一大半，我一度觉得不行了。”时至今日，老李回想起来还心有余悸。在这样的条件下，老李的大棚是如何创造奇迹的呢？记者走进李殿忠的大棚一探究竟。“你看咱这土壤，一把抓下去很蓬松。你再看根系，主根健壮、次生根发达。”李殿忠说，“咱的草莓苗能够迅速复壮，提早开花结果，根源就在这里。”据介绍，李殿忠从前年开始试用金正大集团提供的“亲土1号”新型肥料土壤改良系列产品，试用效果还不错。去年，他就完全按照“亲土1号”系列产品的操作规程，施用了液体土壤调理剂、平衡水溶肥、免疫蛋白叶面肥。这一番操作下来，不仅传统的根腐病、红中柱等病害不见了，而且草莓根系发达、茎叶粗壮，开花和结果都提早了半个月，且所结果实果型好、上色均匀、口感佳，很快就成了市场上的抢手货。

链接:

http://www.farmer.com.cn/jjpd/nz/fl/201901/t20190112_1427548.htm

10. 硝基肥为何“墙内开花墙外香”

【中国农业新闻网】我国是氮肥生产和使用大国。2017年，我国氮肥生产量高达3820.5万吨，位居世界第一。长久以来，尿素和碳酸氢铵的使用占我国氮肥使用量80%以上，对耕地土壤造成了不同程度的伤害。硝基肥与尿素不同，具有肥效快、吸收率高、抗土壤板结、增产提质等优势，但在近年来，我国硝基肥市场却呈现出曲折的发展路线。考虑到生产过程的安全，以及施用不当所造成的亚硝酸盐中毒，一些生产商和农民“谈硝

色变”，硝基肥在国内的发展一直不温不火。而与此同时，国产硝基肥却远销海外30多个国家和地区。日前，在由中国化工报社与山西省交城县人民政府联合主办的“中国硝基肥高质量发展产业行动—硝基出口肥料推广应用研讨会”上，来自农业主管部门、科研院所、硝基肥龙头企业、硝基肥料外贸商和一线销售渠道的近150位代表，围绕硝基类出口肥料的技术创新、应用效果和市场前景展开研讨。“我国18亿亩耕地中，约有7亿亩耕地适用硝基肥，如果全部使用，硝基肥年需求量将达3000多万吨。”高祥照指出，面对巨大的内需市场，如何破除农民固有观念、提高产品的质量和利用率，成为了摆在硝基肥生产企业面前的一道难题。“挖掘国内市场最好的方法，就是踏踏实实做好肥料，并加强硝基肥施用的技术服务，教会农民如何更好地施用，发挥出硝基肥对改善作物品质、改良酸性土壤的作用，让农民不再‘谈硝色变’。”高祥照说。

链接:

http://www.farmer.com.cn/jjpd/nz/fl/201901/t20190112_1427552.htm

【文献速递】

1. Acclimation of methane emissions from rice paddy fields to straw addition

作者: Yu Jiang; Haoyu Qian; Shan Huang, et al.

文献源: Science Advances,2019

摘要: Straw incorporation is a common long-term practice to improve soil fertility in croplands worldwide. However, straw amendments often increase methane (CH₄) emissions from rice paddies, one of the main sources of anthropogenic CH₄. Intergovernmental Panel on Climate Change (IPCC) methodologies to estimate CH₄ emissions from rice agriculture assume that the effect of straw addition remains constant over time. Here, we show through a series of experiments and meta-analysis that these CH₄ emissions acclimate. Effects of long-term (>5 years) straw application on CH₄ emissions were, on average, 48% lower than IPCC estimates. Long-term straw incorporation increased soil methanotrophic abundance and rice root size, suggesting an increase in CH₄ oxidation rates through improved O₂ transport into the rhizosphere. Our results suggest that recent model projections may have overestimated CH₄ emissions from rice agriculture and that CH₄ emission estimates can be improved by considering the duration of straw incorporation and other management practices.

链接:

<http://agri.ckcest.cn/file1/M00/00/00/Csgk0VxjwXqABY1UABRkMib8yB4161.pdf>

2. 充分发挥农业节水的战略作用 助力农业绿色发展和乡村振兴

作者：马颖卓

文献源：中国水利,2019

摘要：农业是最主要的用水部门,消耗了全球总用水量的70%,发展农业节水,提高农业用水效率是保障全球水安全与食品安全的重要途径。党中央、国务院对节水工作高度重视。习近平总书记提出“节水优先、空间均衡、系统治理、两手发力”新时期16字治水方针,党的十九大报告指出,推进资源全面节约和循环利用,实施国家节水行动,为我国农业节水事业发展指明了方向,也提出了新要求。解决中国水短缺问题,节水是根本出路。一直以来,农业是我国的用水大户,也是最有潜力的节水大户。当前,我国现代农业发展面临着越来越强的水土资源的刚性约束,如何以节水助力农业绿色发展和乡村振兴是目前社会关注的热点问题。

链接:

<http://agri.ckcest.cn/file1/M00/06/5E/Csgk0FxiuW6AOcZbAAha5xRTyZs676.pdf>

3. 欧美农业绿色发展政策工具的应用及其启示

作者：许标文; 王海平; 林国华

文献源：福建农林大学学报(哲学社会科学版),2019

摘要：以农业绿色发展内涵为切入点,从提高经济效率、改善环境效率两方面介绍了农业绿色发展政策工具,并分析了欧美国家农业绿色发展在资源环境、绿色补贴及资源节约等方面的政策工具应用。提出要加强农业绿色技术创新、完善农业环境法制建设、加快农业绿色补贴政策改革及构建农业资源节约长效机制,以期更好地推动我国农业绿色发展。

链接:

<http://agri.ckcest.cn/file1/M00/06/5E/Csgk0Fxis1CAZ3wHAAP3nsCrhnE340.pdf>

4. Identification and quantification of macro- and micro-plastics on an agricultural farmland

作者：Sarah Piehl; Anna Leibner; Martin G. J. Löder, et al.

文献源：Scientific Reports,2019

摘要：Micro-plastic contamination of aquatic ecosystems is a high priority research topic, whereas the issue on terrestrial ecosystems has been widely neglected. At the same time, terrestrial ecosystems under human influence, such as agro-ecosystems, are likely to be contaminated by plastic debris. However, the extent of this contamination has not been

determined at present. Via Fourier transform infrared (FTIR) analysis, we quantified for the first time the macro- and micro-plastic contamination on an agricultural farmland in southeast Germany. We found 206 macro-plastic pieces per hectare and 0.34 ± 0.36 micro-plastic particles per kilogram dry weight of soil. In general, polyethylene was the most common polymer type, followed by polystyrene and polypropylene. Films and fragments were the dominating categories found for micro-plastics, whereas predominantly films were found for macro-plastics. Since we intentionally chose a study site where micro-plastic-containing fertilizers and agricultural plastic applications were never used, our findings report on plastic contamination on a site which only receives conventional agricultural treatment. However, the contamination is probably higher in areas where agricultural plastic applications, like greenhouses, mulch, or silage films, or plastic-containing fertilizers (sewage sludge, biowaste composts) are applied. Hence, further research on the extent of this contamination is needed with special regard to different cultivation practices.

链接:

<http://agri.ckcest.cn/file1/M00/06/5E/Csgk0FxitD6AE6UhABSDR4JkxSg539.pdf>

5. Growing climatic sensitivity of U.S. agriculture linked to technological change and regional specialization

作者: Ariel Ortiz-Bobea; Erwin Knippenberg; Robert G. Chambers

文献源: Science Advances,2019

摘要: A pressing question for climate change adaptation is whether ongoing transformations of the agricultural sector affect its ability to cope with climatic variations. We examine this question in the United States, where major increases in productivity have fueled most of agricultural production growth over the past half-century. To quantify the evolving climate sensitivity of the sector and identify its sources, we combine state-level measures of agricultural productivity with detailed climate data for 1960-2004. We find that agriculture is growing more sensitive to climate in Midwestern states for two distinct but compounding reasons: a rising climatic sensitivity of nonirrigated cereal and oilseed crops and a growing specialization in crop production. In contrast, other regions specialize in less climate-sensitive production such as irrigated specialty crops or livestock. Results suggest that reducing vulnerability to climate change should consider the role of policies in inducing regional specialization.

链接:

<http://agri.ckcest.cn/file1/M00/06/5E/Csgk0FxitkqAC0nzAA5z96-9WTQ927.pdf>

6. Industrial and agricultural ammonia point sources exposed

作者: Martin Van Damme; Lieven Clarisse; Simon Whitburn, et al.

文献源: Letter,2019

摘要: Through its important role in the formation of particulate matter, atmospheric ammonia affects air quality and has implications for human health and life expectancy. Excess ammonia in the environment also contributes to the acidification and eutrophication of ecosystems and to climate change. Anthropogenic emissions dominate natural ones and mostly originate from agricultural, domestic and industrial activities. However, the total ammonia budget and the attribution of emissions to specific sources remain highly uncertain across different spatial scales. Here we identify, categorize and quantify the world's ammonia emission hotspots using a high-resolution map of atmospheric ammonia obtained from almost a decade of daily IASI satellite observations. We report 248 hotspots with diameters smaller than 50 kilometres, which we associate with either a single point source or a cluster of agricultural and industrial point sources—with the exception of one hotspot, which can be traced back to a natural source. The state-of-the-art EDGAR emission inventory mostly agrees with satellite derived emission fluxes within a factor of three for larger regions. However, it does not adequately represent the majority of point sources that we identified and underestimates the emissions of two-thirds of them by at least one order of magnitude. Industrial emitters in particular are often found to be displaced or missing. Our results suggest that it is necessary to completely revisit the emission inventories of anthropogenic ammonia sources and to account for the rapid evolution of such sources over time. This will lead to better health and environmental impact assessments of atmospheric ammonia and the implementation of suitable nitrogen management strategies.

链接:

<http://agri.ckcest.cn/file1/M00/06/5E/Csgk0FxitPaAV9ngAhFR2t6xw00181.pdf>

7. Intensification for redesigned and sustainable agricultural systems

作者: Jules Pretty

文献源: Science,2019

摘要: Redesign of agricultural systems is essential to deliver optimum outcomes as ecological and economic conditions change. The combination of agricultural processes in which production is maintained or increased, while environmental outcomes are enhanced, is currently known as sustainable intensification (SI). SI aims to avoid the cultivation of more

land, and thus avoid the loss of unfarmed habitats, but also aims to increase overall system performance without net environmental cost. For example, large changes are now beginning to occur to maximize biodiversity by means of integrated pest management, pasture and forage management, the incorporation of trees into agriculture, and irrigation management, and with small and patch systems. SI is central to the Sustainable Development Goals of the United Nations and to wider efforts to improve global food and nutritional security.

链接:

<http://agri.ckcest.cn/file1/M00/00/00/Csgk0Vxjt5qAS01OAAxBmSMAR3Q473.pdf>

8. 关于推进新疆农业结构调整的思考

作者: 张正尧; 张敬石; 郭利磊, 等

文献源: 中国农业资源与区划,2019

摘要: [目的]新时期,加快推进新疆农业产业结构调整,促进农牧民全面实现脱贫致富奔小康,实现农业可持续发展,是推进新疆经济社会发展的重要手段。通过分析新疆地区水土资源条件和农业产业结构,提出推动新疆农业结构调整的发展方向和重点领域,并提出相应的政策建议。[方法]文章系统梳理新疆农业结构调整相关文献的基础上,通过实地调研和查阅新疆地区农业部门相关资料,全面分析新疆水资源利用、农牧业生产、农产品加工等方面面临的问题,提出针对性措施。[结果]新疆水资源处于过度开发状态,通过压减种植面积或调整种植结构节水空间十分有限,饲草料短缺矛盾较为突出,种养不平衡凸显,农产品加工业滞后,产业结构不合理。[结论]推进新疆农业结构调整,重点是加强水利工程建设提高骨干输水工程防渗率,发展高效节水农业,强化草畜配套平衡,大力发展农产品精深加工,推进农业产业化发展。

链接:

<http://agri.ckcest.cn/file1/M00/06/5E/Csgk0Fxfuj2AASgtAALcbBndW98552.pdf>

9. 粮食安全与农业结构调整水平的协整分析

作者: 刘丽辉; 辛焕平

文献源: 中国农业资源与区划,2019

摘要: [目的]实现我国粮食安全与农业结构调整之间(即粮食增产和农民增收)关系的协调,较长时间以来是学界、政界关注的重要议题,但定量分析两者之间内在依存关系的研究一直欠缺。[方法]文章采用协整分析及Granger因果关系检验方法,以广东为例,对我国粮食安全(用粮食总产量来衡量)与农业结构调整水平之间的协整性及因果关系进行了

研究。[结果]广东粮食总产量与反映农业结构调整水平的3个指标之间均存在长期均衡关系,且农作物播种面积中粮食作物面积对广东粮食总产量影响最大,每下降1%,粮食总产量下降0.659 548%。短期内,反映农业结构调整水平的3个指标对广东粮食总产量的影响均存在波动,但由短期偏离拉向长期均衡的牵动作用均较弱。Granger因果关系检验表明农业在国民经济中的比重、农作物播种面积中粮食作物面积早期对广东粮食总产量产生单向影响,但影响程度相对较弱。[结论]提出应从农业结构调整以外的因素着手提高我国粮食安全水平,并通过调整农业区域结构去缓解我国粮食供求市场的结构性矛盾。

链接:

<http://agri.ckcest.cn/file1/M00/00/00/Csgk0VxjubqAWAOSAAXsCwkdJ2s360.pdf>

10. 新时期我国农业结构调整战略研究

作者: 罗其友; 刘洋; 唐华俊, 等

文献源: 中国工程科学,2019

摘要: 在新形势下,我国农业的主要矛盾已由总量不足转变为结构性矛盾。适应农业发展新常态,调整优化农业结构,加快转变发展方式,推进农业供给侧结构性改革,成为当前我国农业发展的重要任务。本文从种植业结构、畜牧结构、产业结构、产品结构、空间结构5个方面分析了当前我国农业结构存在的主要问题,阐述了新时期我国农业结构调整的战略构想,提出了种植业结构、畜牧业结构和产业结构的调整优化方案及相应的政策建议。

链接:

<http://agri.ckcest.cn/file1/M00/00/00/Csgk0VxjunSAMaZtAA-l6P2Hs1w543.pdf>

【研究报告】

1. Improving Characterization of Anthropogenic Methane Emissions in the U.S.

发布源: The National Academies of Sciences, Engineering, and Medicine

发布时间: 2018-10-15

摘要: Understanding, quantifying, and tracking atmospheric methane and emissions is essential for addressing concerns and informing decisions that affect the climate, economy, and human health and safety. Atmospheric methane is a potent greenhouse gas (GHG) that contributes to global warming. While carbon dioxide is by far the dominant cause of the rise in global average temperatures, methane also plays a significant role because it absorbs more energy per unit mass than carbon dioxide does, giving it a disproportionately large effect on global radiative forcing. In addition to contributing to climate change, methane

also affects human health as a precursor to ozone pollution in the lower atmosphere. Improving Characterization of Anthropogenic Methane Emissions in the United States summarizes the current state of understanding of methane emissions sources and the measurement approaches and evaluates opportunities for methodological and inventory development improvements. This report will inform future research agendas of various U.S. agencies, including NOAA, the EPA, the DOE, NASA, the U.S. Department of Agriculture (USDA), and the National Science Foundation (NSF).

链接:

<http://agri.ckcest.cn/file1/M00/06/5E/Csgk0FvjvzKACwekADbXpUIqrS4557.pdf>

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