中国工程科技知识中心
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《中国农业发展战略研究》专题快报

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【动态资讯】

1． U.S. corn, soybean crops are still going backward, USDA says

【AgroNews】The U.S. corn and soybean crops conditions deteriorate, according to the USDA's weekly Crop Progress Report released Monday. The overall condition of the corn crop is rated at 56% good to excellent in the top 18 corn producing states, lower than 57% a week ago and 68% a year ago. The USDA pegged 95% of the corn crop was in the silk stage, compared with a 99% five-year average. Also, 55% of the corn has entered the dough stage vs. a 76% five-year average. USDA rated the crop in the dent stage at 15% vs. 30% five-year average. For folks keeping track at home, the National Agricultural Statistics Service (NASS) reported, Monday, that Texas farmers have harvested 26% of their corn crop vs. 51% a year ago and a 44% five-year average. Mississippi farmers have 8% of their corn crop picked vs. 19% a year ago and a 20% five-year average. Also, Arkansas farmers have harvested 4% of their 2019 corn vs. 5% a year ago and an 8% five-year average. The nation's crop is rated 53% good/excellent compared with 54% a week ago and 65% a year ago. Also, 90% of the soybean crop is blooming vs. a 96% five-year average. The USDA pegged the amount of soybeans setting pods at 68%, well below a five-year average of 85%. The U.S. winter wheat harvest is 93% complete vs. a 98% five-year average. Meanwhile, the U.S. spring wheat crop is rated as 70% good/excellent vs. 69% a week ago.

链接:

http://news.agropages.com/News/NewsDetail---31662.htm

2． Putting the Cart before the Horse, India Agri policy

【AgroNews】The 2019 union budget has neither proposed any bold policy moves, nor any

big allocations for investments in the agri-food sector. What it has is massive welfare programmes, predominantly the remnants of its predecessor government's welfare policies. It appears that India has already become a welfare state before generating enough wealth. Has the budget for the agricultural sector actually put the cart before the horse? Every finance minister wants their first budget to be a path-breaking one in giving fresh impetus to the economy, unleashing the "animal spirits" of the investor community and above all, raising the overall economic growth with due safety and stability. In this aspect, the first budget speech of the union finance minister, Nirmala Sitharaman, if not pioneering, is definitely resplendent in laying out a 10-point vision for making "a $5 trillion economy of India by 2024." Such a vision about the evolution of the economy cannot be accomplished merely by crunching numbers in the budget, but requires relevant policy initiatives, some of which Sitharaman's budget had incorporated. Yet it is hard to dismiss that the feasibility of such massive transformational planning does call for some evidence-based policymaking at the various levels of governance. In this context, one thing that is expected of the finance minister is to bring trust and transparency in the numbers/estimates accounted in the budget. However, the veracity of the estimates of some crucial macroeconomic indicators presented in this budget—such as the fiscal deficit—has been a matter of contention.

链接:

http://news.agropages.com/News/NewsDetail---31671.htm

3．四川省乐山市落实八大措施 加强产地环境保护与治理

【中华人民共和国农业农村部】一是加强农田和耕地污染防治。严格控制在优先保护类耕地集中区域新建有色金属矿采选、有色金属冶炼、石油加工、化工、焦化、电镀、制革、天然（页岩）气开采、铅蓄电池、汽车制造、农药、电子拆解、危险废物处置和涉重金属等行业企业。二是实施化肥农药使用量持续减量行动。大力推广测土配方施肥、水肥一体化、机械施肥等技术，开展化肥减量增效示范和果菜茶有机肥替代化肥试点。三是强化饲料质量和兽用药监管。规范限量使用饲料添加剂，减量使用兽用抗菌药物。四是完善秸秆综合利用和禁烧制度。大力推进秸秆肥料化、饲料化、基料化、燃料化、原料化利用，推进秸秆全域综合利用试点示范。五是建立畜禽粪污资源化利用制度。大力推广农牧结合生态治理模式，实现畜禽养殖粪污的异地还田利用。六是健全病死畜禽无害化处理体系。按照"统一收集暂存、集中无害化处理"的原则，推进集中无害化处理。七是加强农膜生产源头、营销和使用管控。推动农用薄膜行业生产按新标准实施。八是建立农药包装废弃物回收和集中处理体系。在粮经作物主产区整建制推进农药包装废弃

物回收试点，探索建立农药包装废弃物回收机制。

链接:

http://www.moa.gov.cn/xw/qg/201908/t20190819_6322744.htm

4．上海都市农业进入绿色、有机时代

【中华人民共和国农业农村部】日前，由上海市农业展览馆主办、上海市农业技术推广服务中心协办的2019上海地产果品直销展开展，不久前获得水蜜桃金奖的上海南汇瓜果有限公司、获得葡萄金奖的上海马陆葡萄公园有限公司以及获得蜜梨金奖的上海常奉农产品专业合作社悉数参展。数据显示，本次参展的绿色产品品类占了总品类的70%。短短十天时间，上海举办了4场市级层面的鲜果评比、直销活动，为果农和市民创造面对面机会的同时，着重强调鲜食瓜果品类的绿色、有机资质，向供给侧、需求侧发出明确信号，上海农业将步入绿色、有机时代。据了解，上海全市水果栽培总面积超过21万亩，预计总产量30万吨左右，四大主栽水果桃、梨、葡萄、柑橘的种植面积、产量、产值均占水果总量的95%左右。身处上海高端市场，上海果农早已形成了高品质高效益的经营理念，地产鲜果的品质越来越好。可是，桃、梨、葡萄三大类水果因为密集上市、存放期短，全面实现优质优价仍存在不小的困难，而通过评奖、直销等活动拉近果农和市民的距离，是政府应当提供的公共服务之一。

链接:

http://www.moa.gov.cn/xw/qg/201908/t20190816_6322730.htm

5．庄浪县着力打造畜沼果循环农业

【中华人民共和国农业农村部】庄浪县以发展绿色、环保、无公害农业为目标，加快畜禽养殖废弃物综合利用和无害化处理，大力推行畜、沼、果生态循环农业模式，走出了一条种养深度融合、一体经营，生态、环保、可持续的发展之路。养殖场将产生的粪便废物通过地下管网输送到沼气站，通过发酵将沼渣沼液免费提供给果农，实现畜牧产业废弃物循环利用。除了沼渣沼液直接还田外，庄浪县还对畜禽养殖废弃物进行深加工。先后建成了银海生物肥料科技有限公司和葫阳生物科技有限公司，两套2万吨有机肥生产线，年可处理畜禽养殖粪污20万吨以上，并且通过与大中型规模养殖场签订粪污收购协议的方式，将养殖场产生的粪污及时收购清理，生产高效有机肥。截至目前，全县牛、猪、鸡饲养量分别达到9.5万头，16.3万头和127万只，粪污总量为76.7万吨。通过自然堆肥发酵还田、生产沼气和有机肥，资源化利用总量56万吨，利用率达73%。

链接:

http://www.moa.gov.cn/xw/qg/201908/t20190815_6322684.htm

6．山西今年将打造6个秸秆综合利用“样板县”

【中华人民共和国农业农村部】近日，山西省农业农村厅近日出台《山西省2019年农作物秸秆综合利用试点工作实施方案》，提出今年将利用中央财政农业资源及生态保护资金4705万元，开展秸秆综合利用试点工作，重点打造6个秸秆综合利用的“样板县”。山西省农业农村厅相关负责人表示，按照农业农村部“集中投入，整县推进”的要求，山西将中央财政资金4705万元下达到6个市，由市遴选确定项目县并将资金分配到县。具体为临汾市浮山县784万元、运城市稷山县785万元、晋城市高平市784万元、忻州市原平市784万元、晋中市祁县784万元、长治市上党区784万元。支持对象为从事秸秆肥料化、饲料化、燃料化、基料化、原料化利用及农机专业服务的企业、农民专业合作社、社会化服务组织。据介绍，补助资金主要用于补助试点县秸秆综合利用项目设施设备费用、收储运站（点）费用、田间作业费用、离田加工利用费用、终端监测设备费用、示范观摩现场会以及人员参加培训等费用。

链接:

http://www.moa.gov.cn/xw/qg/201908/t20190815_6322665.htm

7．田野刮起“绿色”防控风

【中华人民共和国农业农村部】实施农药减量增效,发展绿色生态农业,既是打好污染防治攻坚战的要求,也是实现农业高质量发展的有效途径。近几年,长春市依托“控、替、精、统”四大技术手段,在田间管理上集成推广以理化诱控、生物防治为主的绿色防控和统防统治模式。仅今年,长春市农业农村局就投入700万元推广此模式,进一步促进农业提质增效。控: 以虫治虫。私人订制的稻米不上化肥、不打农药,通过生物防治技术保证水稻的健康,除了人工除草和放养麻鸭除草,还使用飞蛾诱捕器进行生物防螟。替: 无毒替有毒。用高效低毒农药替代高毒高用量农药、用生物农药替代化学农药,收到很好的生态环保效果。精: 无人机精准作业。随着无人机轰鸣而过,药物均匀地喷洒到水稻叶面上,高效的飞防作业让在场群众连连称赞。长春市还对田间管理进行统防统治,即统一用药时间、统一用药品种、统一施药方式、统一技术服务,在保证用药技术要求的基础上,保证了用药的时效性。

链接:

http://www.moa.gov.cn/xw/qg/201908/t20190815_6322666.htm

8．Compost key to sequestering carbon in the soil

【UCDavis】By moving beyond the surface level and literally digging deep, scientists at the University of California, Davis, found that compost is a key to storing carbon in semi-arid

cropland soils, a strategy for offsetting CO_2 emissions. For their 19-year study, published in the journal Global Change Biology, scientists dug roughly 6 feet down to compare soil carbon changes in conventional, cover-cropped and compost-added plots of corn-tomato and wheat-fallow cropping systems. They found that: - Conventional soils neither release nor store much carbon. - Cover cropping conventional soils, while increasing carbon in the surface 12 inches, can actually lose significant amounts of carbon below that depth. - When both compost and cover crops were added in the organic-certified system, soil carbon content increased 12.6 percent over the length of the study, or about 0.07 percent annually. That's more than the international "4 per 1000" initiative, which calls for an increase of 0.04 percent of soil carbon per year. It is also far more carbon stored than would be calculated if only the surface layer was measured.

链接:

https://www.ucdavis.edu/news/compost-key-sequestering-carbon-soil

9. Stop burning fields to cut smog and boost profits, scientists tell Indian farmers

【AgroNews】Every year, a choking smog descends on northwest India as the region's farmers burn their fields following the rice harvest - a phenomenon that has helped make New Delhi one of the world's most polluted cities. Now, scientists have come up with a method that would allow farmers to sow their winter crop, usually wheat, without burning off the stubble left behind after the rice harvest. Researchers tested 10 alternatives to burning, finding the biggest profits could be achieved with a machine called the Happy Seeder. The new method would allow farmers to produce more food, boost profits by up to 20%, and cut greenhouse gas emissions by as much as 78%, according to a study published on Thursday. Every year, farmers in northwest India burn an estimated 23 million tonnes of rice straw to clear the land quickly and cheaply in time to grow wheat, the study said. If piled on top of each other, the amount would cover 1.1 times the distance to the moon. India officially restricts the use of crop burning, but the practice persists and bans are rarely enforced. The resulting seasonal smog disrupts transportation and threatens public health, said the paper, published hours after a major U.N. report called for big changes to farming to curtail global warming.

链接:

http://news.agropages.com/News/NewsDetail---31546.htm

10．Farming 3.0 - making agriculture sustainable through Micro-irrigation

【AgroNews】India is a water-stressed country. Going by the current rate of population growth and consumption trends, India, by as early as 2050, could be a water-scarce country. That means, if this prophecy of doom comes to pass, there will be less than 1000 cubic meters of water available per person in a year. This scarcity of water poses a severe existential challenge to humanity in general. But it presents an all the more grave and immediate threat to regions like Marathwada that rely on agriculture. Water is fundamental to agriculture. The sector consumes about 80 percent of the total renewable water resources in India. What this means is that, given its irrigation needs, a scarcity of water will hit farming the hardest. Agriculture contributes 15 percent to India's economy and supports the livelihoods of two-thirds of the country's population. The scarcity of water to meet basic irrigation needs could have devastating and far-reaching consequences.

链接:

http://news.agropages.com/News/NewsDetail---31455.htm

【文献速递】

1．Has the level of green development in the northwestern provinces of China truly improved? A case study of Shaanxi

作者：Yi Yang；Peipei Huang

文献源：Sustainable Cities and Society ,2019

摘要：Evaluating the actual progress in the green development of China's northwestern provinces can play a role in encouraging local governments to promote the reform of the ecological civilization system. By improving the "green development indicator system" formulated by the National Development and Reform Commission of China, the green development index (GDI) of Shaanxi Province from 2007 to 2016 was measured and compared with Shaanxi's ecological footprint (EF) and related indicators. The results showed that (1) the GDI in Shaanxi Province increased from 42.774 in 2007 to 64.971 in 2016, while during the same period, the per capita EF increased from 1.994 ha/cap to 2.719 ha/cap, the ecological deficit increased from 0.782 ha/cap to 1.500 ha/cap, and the ecological pressure index increased from 1.645 to 2.176. These results indicate that the green development of Shaanxi Province is still based on excessive ecological occupation. (2) A comparison between GDI and EF shows that the development of Shaanxi Province has changed from "low GDI, low EF" to "low GDI, high EF" to "high GDI, high EF". Thus, this study proposes countermeasures to change this trend, such as adjusting the energy structure, reducing

carbon emissions, improving environmental capacity, and rigorous managing national land space.

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1TnYuAKKyrAC89I4QDRHc275.pdf

2. Best management practices from agricultural economics: Mitigating air, soil and water pollution

作者：Vítor João Pereira Domingues Martinho

文献源：Science of the Total Environment,2019

摘要：Often the several stakeholders involved in the agricultural sector place a greater emphasis on the negative externalities from farming production rather than on the solutions and approaches to mitigate, namely impacts from pollution. The scientific literature, in certain circumstances, follows this tendency leaving a vast chasm of enormous potential left to be explored. It is important to contribute towards the reduction of this gap, highlighting the best management practices implemented across the agricultural sector around the world, specifically to make them more visible and give incentive to the several agents in adopting and spreading their use. In this way, the main objective is to stress the best management practices presented by the global scientific literature from the farming sector. To achieve this objective methodology based on bibliometric analysis-factor-analysis literature survey approach was considered, applied to 150 documents obtained from the Web of Science (core collection) related with the following topics: best management practice; agricultural economics; air, soil and water pollution. As main insights, it is worth referring the best management practices to deal with problems from agricultural production, such as, for example, the use of agricultural residues as feedstock for renewable energies. With regard to sustainable development in the agricultural sector, concepts such as “sustainable remediation” have their place. On the other hand, the agricultural and environmental policies and the agricultural costs associated with the several farming practices also play a determinant role here. Finally, only fraction of the scientific documents analysed (16 papers) belong to the group of studies related to policies, showing that there are potential subjects to be addressed here in future studies related with these topics. The same happens for costbenefit analyses (24 documents).

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1Tn16AM6bCACNWuqVtv6U592.pdf

3．Challenges and solutions in identifying agricultural pollution hotspots using gross nitrogen balances

作者：João Serra；Cláudia M.d.S. Cordovil；Soraia Cruz，et al.

文献源：Agriculture, Ecosystems and Environment,2019

摘要：Gross nitrogen balances (GNB) at the national level are a broad indicator of reactive nitrogen (N) pollution but the identification of pollution hotspots is necessary for designing cost-effective abatement policies. This requires a spatial disaggregation of GNBs to finer resolutions, but key inputs are often only available at high spatial scales. Modelling offers a method to provide these inputs but introduces additional error. Here we develop methods to estimate the main inputs (manure, synthetic fertiliser) and outputs (roughage feed and crop products) for mainland Portugal for the NUTS2, NUTS3 and municipality levels for the years 1989, 1999 and 2009. Our results show that despite the declining of the mainland GNBs over this period (47 to 38 kg N ha^{-1}), the range of GNBs at progressively finer resolutions increased from 26 to 95 at the NUTS3 to −50963 kg N ha^{-1} at the municipality levels. The increased concentration of livestock in some areas appears to be leading to an inefficient use of manure for crop production whereas there appears to be a depletion of soil N stocks in other areas. A comparison of our results with those from Denmark leads us to conclude that the municipality level is the most suitable to identify hotspots, even though errors can arise when there is a poor correspondence between agri-environmental conditions and the socioeconomic administrative boundaries at which statistical data are often available.

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1ToUqAWsF4AH3Tdj1XTF4828.pdf

4．The problem of agricultural 'diffuse' pollution: Getting to the point

作者：Simon Harrison；Cassandra McAree；William Mulville；Timothy Sullivan

文献源：Science of the Total Environment,2019

摘要：Despite introduction of legislation such as the EU Nitrates and Water Framework Directives (Directives 91/676/EEC and 2000/60/EC respectively), agricultural practices are often still regarded as a major factor in poor water quality across many EU member states. Elevated inputs of nutrients, organic matter and agro-chemicals to receiving waters from agricultural lands in particular are now widely recognised as potentially major causes of deteriorating water quality. Such inputs may emanate from diffuse sources such as

agricultural fields, and small point- or intermediate-sources, including farmyards and farm trackways. However, while inputs from these latter intermediate sources may be substantial, their overall contribution to catchment-wide water quality at high temporal or spatial resolution is still largely unknown. In this study, we surveyed water chemistry throughout the multiple natural and artificial watercourses within a single drainage network at high spatial resolution in a predominantly dairy farming area in Southern Ireland. We found that most headwaters at the time of study were impacted by organic inputs via drainage ditches emanating from the vicinity of farmyards. These farmyard drains were found to have elevated concentrations of ammonium, phosphorus, potassium, suspended sediment and biochemical oxygen demand above background levels in the study catchment. Concomitant assessment of macro-invertebrate communities at study sites indicated that the ecological quality of headwaters was also impaired by these inputs. The individual and aggregate contributions of farmyard drains to water quality within a single catchment, when mapped at high spatial resolution, indicates that they constitute a major contribution to catchment scale 'diffuse' agricultural inputs. However, our data also suggest that engineering farmyard drains to maximise their retention and attenuation function may prove to be a cost-effective means of mitigating the effects of point source farmyard inputs.

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1TnoCAHi25ABurYg6f4Y0171.pdf

5．基于灰色关联的西北地区农业循环经济发展评价

作者：赵婷

文献源：中国农业资源与区划,2019

摘要：[目的]发展农业循环经济有利于缓解西北地区农业资源与生态环境的压力,促进传统农业转型,刺激农业经济的增长,实现农业的可持续发展。[方法]文章通过构建西北地区农业循环经济指标体系,运用灰色关联法计算关联度并分析比较各影响因素间的相对变化程度用来分析西北地区农业循环经济的发展水平。[结果]关联系数结果表明影响陕西地区农业循环经济的因素主要是农民人均纯收入、农药施用量、农业柴油施用量、有效灌溉面积及禽畜粪便利用率;影响甘肃省的农业循环经济发展的因素主要是农民人均纯收入、复种指数、秸秆利用率及禽畜粪便利用率;影响青海地区农业循环经济的因素主要是人均粮食产量、节水灌溉面积以及秸秆利用率;影响宁夏地区农业循环经济的因素主要是农林牧渔业增加值、节水灌溉面积、有效灌溉面积以及秸秆利用率;影响新疆地区农业循环经济的因素主要是农药施用量、复种指数、有效灌溉面积及禽畜粪便利用

率。关联度大小结果表明西北地区农业循环经济的发展水平从大到小依次为宁夏(0.743)、甘肃(0.716)、青海(0.674)、新疆(0.619)、陕西(0.585),针对青海、新疆和陕西地区应采取相应措施,促进农业循环经济的发展,进而提高西北地区农业循环经济的整体水平。[结论]在西北地区发展农业循环经济,应重点加强资源减量化和再利用方面的建设,以及平衡区域间的协调合作发展,推动农业循环经济的健康持续发展。

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1To3KABhBeAAMiDiXslIU128.pdf

6．美国农业资源管理的经验与启示

作者：李晓琳；霍剑波；张华；屈宝香；尤飞

文献源：中国农业资源与区划,2019

摘要：[目的]文章简要介绍了美国农业部有关农业资源管理的机构设置、法律体系、项目措施、资金投入、数据管理5个方面,总结先进的管理经验。[方法]通过文献分析法,再结合我国农业发展和资源管理的现状进行总结分析。[结果]我国目前存在农业资源管理不专业,资源底数不清,浪费严重,科技成果转化率低、数据共享机制不完善等问题。[结论]汲取经验得出启示,规范农业资源的使用和管理,加强资源和环境的保护力度,提高农业发展中的科技投入,促进数据资源的公开与共享,在保障农业生产的同时维护好生态环境,促使经济效益和生态效益共同提升,实现绿色发展。

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1TouyARkpWAALcB_Y9V70859.pdf

7．中国农业资源环境若干战略问题研究

作者：石玉林；唐华俊；王浩；等

文献源：中国工程科学,2019

摘要：21世纪中叶我国将处于全面实现现代化和走向全球化时期,在此期间我国将面临人口老龄化、劳动力不足和资源短缺。这一时期是人与资源矛盾最尖锐时期,也是环境治理最艰难时期。为确保粮食与食物安全、资源安全与生态环境安全,中国工程院成立重大咨询项目"中国农业资源环境若干战略问题研究",旨在"分析形势,寻找对策"。依据中央的"创新、协调、绿色、开放、共享"的新发展理念,提出"全面实施农业创新驱动战略""深入推进农业可持续发展战略"和"实施农业走出去的全球化战略"三大战略方向,八项战略性转变,十六条有关资源节约、环境保护、结构调整、区域布局等战略性措施和十项重大工程。

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1TpBuALhPAAA0CN_svf-Q710.pdf

8．中国农业资源环境分区

作者：许尔琪

文献源：中国工程科学,2019

摘要：中国农业资源环境问题日益突出,区域农业资源限制因素和环境制约问题各不相同。依据农业资源环境地域分异,以县域为制图单元,本文将全国划分为10个一级区,57个二级区。一级区依据气候条件和大地构造的地域分异,二级区根据水资源、土地资源和环境条件问题差异。分析了全国各分区农业生产条件、资源类型及其组合的特点、环境生产条件和存在问题,提出"优化东、中、西"空间布局和"提高东北,整治华北,恢复南方"战略,并划分了27个承担主要农产品供给保障功能的"重点建设农产品产区",指明其建设方向措施,以维护和改善我国农业生产系统的健康和可持续性。

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1TonGAGR84AAvGimCCVMM771.pdf

9．Agricultural water pollution: key knowledge gaps and research needs

作者：Alexandra EV Evans；Javier Mateo-Sagasta；Manzoor Qadir，et al.

文献源：Current Opinion in Environmental Sustainability,2019

摘要：While water pollution is starting to receive the attention it deserves, the contribution of agriculture requires greater consideration as current agricultural practices have an unprecedented impact on water quality. This paper reviews knowledge in selected areas of agricultural water pollution (AWP) and identifies future research needs. These include source attribution, emerging contaminants, costs and incentives for adoption of pollution reduction measures. Future research priorities include identification and testing of locally appropriate markers; modelling the effects of contaminants on biota and pathways of microbial contaminants; harmonization of data collection and calculation of economic costs of AWP across countries and projects; and how to better share relevant knowledge to incentivize improved agricultural practices.

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1ToJGAZQX5AAeilwI5dao411.pdf

10．资源环境约束下黄河三角洲盐碱地农业绿色发展对策

作者：高明秀；吴姝璇

文献源：中国人口·资源与环境,2019

摘要：本文系统分析了黄河三角洲盐碱地开发利用状况和农业发展的资源条件,探讨了

农业发展的环境影响与效益制约,提出了促进农业绿色发展的对策。结果表明:黄河三角洲不仅受到盐碱地改良难、淡水紧缺的资源约束,而且受到常规农业发展模式环境风险高、比较效益低的环境效益约束,农业发展面临严峻挑战;黄河三角洲肩负发展高效生态经济重任,盐碱地农业利用必须坚持绿色主题,兼顾资源环境约束,保障国家食物和生态安全。建议在黄河三角洲发展水肥一体化设施栽培,优化农业空间布局,将设施栽培向黄河、小清河以北迁移,"两河"以南"退棚还田"发展粮食生产;强化科技支撑,培育绿色产业链,并建立生态经济补偿机制协调区域关系。

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1TofSAYQedAALhKWeBqIo639.pdf

【科技图书】

1. Chapter 28 - Agricultural Waste and Pollution

发布源：ScienceDirect

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摘要：Although at a national scale, the amount of waste produced by the agricultural industry is often not as great as from other sectors, farming is a highly varied industry which produces a bewildering array of natural and man-made wastes, each of which has a particular set of environmental, public health, and management issues associated with it. These include manures and slurries, crop residues, vegetative trimmings and other green wastes, pesticides, dead stock, silage effluent and wastes from the dairy industry, as well as more familiar forms of waste such as oils, plastics, paper, and card. Some of these waste streams are found in other sectors, but the nature of agricultural businesses means that they may have properties which stop them simply being treated in the same way as they would be in those other sectors (e.g., hazardous contamination). This chapter details the relevant waste streams, the issues associated with them, and current best practice in relation to management.

链接:

http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1TnK2AHnCRAAkdYfhrREQ383.pdf