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中国农业科学院农业信息研究所
联系人：孔令博
联系电话： 010-82106786
邮箱：agri@ckcest.cn
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前沿资讯

1．A better understanding of crop yields under climate change（更好地了解气候变化下的作物产量）

简介："Studies analyzing how crop yields respond to temperature and rainfall tend to find that temperature matters much more than water, even though we understand from plant physiology that temperature and water supply are both really important for crops," said Proctor, a postdoctoral fellow in Prof. Peter Huybers' group at the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS).

"Solving this puzzle is critical for quantifying how climate change will affect global crop yields." The research team had a hypothesis: What if the models were measuring the wrong type of water? Rather than measuring precipitation, as previous studies had done, the Harvard team used satellites to measure soil moisture around the root zone for maize, soybeans, millet, and sorghum growing around the world.

来源：ScienceDaily

发布日期:2022-09-19

全文链接:http://agri.ckcest.cn/file1/M00/03/3F/CsgkOYeMJt2ADz3bAABS9fEBtik840.pdf

2．Digital tools can transform agriculture to be more sustainable（数字化工具可使农业转型为可持续发展）

简介：Agricultural producers face dual challenges of increasing output for a growing world population while reducing negative effects on the environment. Digital technologies and artificial intelligence can facilitate sustainable production, but farmers must weigh opportunities and risks when deciding whether to embrace such tools.

In a new Agricultural Economics paper, University of Illinois scientists propose a research methodology to measure producers' willingness to adopt new technologies related to digital agriculture. The paper outlines some of the sustainability challenges for U.S. agriculture and why it is difficult to address those challenges with conventional technologies, explains Madhu Khanna, distinguished professor in agricultural and consumer economics (ACE) and director of the Institute for Sustainability, Energy and Environment (iSEE) at the U of I.

来源：SeedQuest

发布日期:2022-09-09

全文链接:http://agri.ckcest.cn/file1/M00/03/3F/CsgkOYeMJgOALH3BAAHoraK27xo793.pdf

学术文献

1．Risk monitoring model of intelligent agriculture Internet of Things based on big data（基于大数据的智能农业物联网风险监控模型）

简介：With the development of the times, there is a huge amount of data in every industry. Big data technology is to collect, analyze, process and information from these huge data and apply it to all

aspects of our life to improve people's production life. The proposal and development of smart agriculture will play a significant role in the further implementation of the country's rural revitalization strategy. However, the research on risk monitoring in smart agriculture is not yet systematic enough. The purpose of this article is to strengthen the development of smart agriculture under big data, focusing on risk monitoring. To this end, this article studies big data monitoring through data analysis methods and Internet of Things technologies, and discusses the principles of big data and key technology principles of the Internet of Things. Explained, and proposed a modern agricultural technology platform based on the Internet of Things and big data. This platform is established on the basis of precision agriculture and wireless sensor network work, and analyzes the accuracy of various types of light wavelengths for determining wheat rust. The analysis results show that the accuracy of light with multiple wavelengths is not necessarily better than the light with a single wavelength. The accuracy of 600 nm wavelength can reach 100 %, and the accuracy of monitoring with 4 wavelengths together is rather low. However, less consideration is given to the factors in this article, and wheat does not necessarily cause only one disease. Comprehensive analysis is required. With the help of spectral research and aerial photography of drones, the severity of the disease and the outbreak area can be speculated.

来源：Sustainable Energy Technologies and Assessments

发布日期:2022-09-22

全文链接:http://agri.ckcest.cn/file1/M00/03/3F/CsgkOYeMJ-OAB7_LAAcZyD_8fG4115.pdf

2．Digital agriculture services in low- and middle-income countries: A systematic scoping rev(中低收入国家的数字化农业服务：系统范围综述)

简介：This paper summarizes a global assessment of digital agriculture services and their impacts. A scoping review conducted under a protocol aligned to the internationally accepted PRISMA- ScR found that most studies are focused on the provision of digital advisory and extension services to farmers, and they reported outcomes associated mainly with “practice change” and “increased knowledge.” While many studies focused on on-farm agronomy, either through digital advisory or precision agriculture tools, they lacked data about outcomes related to environmental sustainability and climate resilience. This review also found that use facilitators and barriers should also be considered when studying and reporting on the uptake of services and their outcomes.

来源：Global Food Security

发布日期:2022-09-01

全文链接:http://agri.ckcest.cn/file1/M00/10/11/CsgkOGM1d6eAfeeTAEeOrOmsx1g818.pdf

科技报告

1．The State of the World’s Land and Water Resources for Food and Agriculture – Systems at breaking point (SOLAW 2021)(世界粮食和农业土地和水资源状况—系统处于崩溃点（SOLAW，2021））

简介：满足日益增长的粮食需求在世界范围内给水、土地和土壤资源造成压力。农业可为减轻这些压力贡献力量，助力实现气候和发展目标。可持续农业模式能够直接改善土地、土壤和水

资源状况，产生生态系统惠益，减少土地来源的排放。实现上述目标需要精准的信息，更需要我们大刀阔斧地改革资源管理模式；此外还需要自然资源管理范畴之外的补充力量，以便协同增效，权衡取舍。

2021年版《世界粮食和农业土地及水资源状况》旨在介绍土地和水资源现状，着重指出风险，梳理相关机遇和挑战。此外，报告还强调了适当政策、机制与投资的重要作用。近期开展的评估、预测和情境分析表明，水土资源消耗加速，生物多样性损失愈加严峻。2021年版《土地及水资源状况》着重分析了土地、土壤和水资源的相关风险和发展趋势，提出了解决用户竞争、实现预期惠益的途径。报告介绍了最新的知识内容，提出了一整套应对措施和行动，可以帮助决策者做出合理决策，推动由退化和脆弱转向可持续和韧性发展。

来源： FAO

发布日期:2022-09-15

全文链接:

http://agri.ckcest.cn/file1/M00/10/11/CsgkOGM1dYqAd1GBAHZccPt4es4929.pdf