



2019年第18期总185期

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## ▶ 前沿资讯

### 1 . Rising African Swine Fever Losses to Lift All Protein Boats (非洲猪瘟不利于提升蛋白质储量)

简介: Production losses from African swine fever (ASF) have eclipsed initial estimates. The Chinese pork production shortfall, along with shortfalls in Southeast Asia, will create challenges and opportunities for animal protein exporters.

来源: RABOBANK

发布日期: 2019-04

全文链接:

<https://research.rabobank.com/far/en/sectors/animal-protein/rising-african-swine-fever-losses-to-lift-all-protein.html>

### 2 . First ever global scientific eating plan forgets the world's poor (前所未有的全球性科学饮食计划忘了世界上的穷人)

简介: A team of 37 world-leading scientists from 16 countries have just released the world's first ever scientific eating plan. The "planetary health diet" is designed to be healthier for people and more environmentally friendly. The team warns that the way we eat now threatens both our health and the long-term survival of the planet. They say the current food system dangerously overproduces greenhouse gases, misuses fertiliser, and causes large-scale food wastage and massive land degradation. Their solution is to shift to a diet that transforms this damaging food system. This diet would sustainably feed up to 10 billion people by 2050 and avert about 11 million premature adult deaths a year due to cardiovascular disease and other non-communicable diseases.

来源: The Conversation

发布日期: 2019-02-27

全文链接:

<https://theconversation.com/first-ever-global-scientific-eating-plan-forgets-the-worlds-poor-112238>

## ▶ 学术文献

### 1 . Regional variations in the link between drought indices and reported agricultural impacts of drought (干旱指标和报告中干旱对农业影响的区域性关系差异)

简介: Drought has wide ranging impacts on all sectors. Despite much effort to identify the best drought indicator to represent the occurrence of drought impacts in a particular sector, there is still no consensus among the scientific community on this. Using a more detailed and extensive impact dataset than in previous studies, this paper assesses the regional relationship between drought impacts occurrence in British agriculture and two of

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the most commonly used drought indices (SPI and SPEI). The largest qualitative dataset on reported drought impacts on British agriculture for the period 1975-2012 spanning all major recent droughts was collated. Logistic regression using generalised additive models was applied to investigate the association between drought indices and reported impacts at the regional level. Results show that SPEI calculated for the preceding six months is the best indicator to predict the probability of drought impacts on agriculture in the UK, although the variation in the response to SPEI6 differed between regions. However, this variation appears to result both from the method by which SPEI is derived, which means that similar values of the index equate to different soil moisture conditions in wet and dry regions, and from the variation in agriculture between regions. The study shows that SPEI alone has limited value as an indicator of agricultural droughts in heterogeneous areas and that such results cannot be usefully extrapolated between regions. However, given the drought sensitivity of agriculture, the integration of regional predictions within drought monitoring and forecasting would help to reduce the large on-farm economic damage of drought and increase the sector's resilience to future drought.

来源: Agricultural Systems

发布日期: 2019-02-26

全文链接:

[http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzFBWSAct\\_sABOLVIuBm7g894.pdf](http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzFBWSAct_sABOLVIuBm7g894.pdf)

## **2 . Multi-objective simulation and optimisation of dairy sheep farms: Exploring trade-offs between economic and environmental outcomes (奶羊农场的多变量模拟和优化: 探索经济与环境产出的平衡点)**

简介: A decision support tool for sheep farming systems (PASTOR-DSS) was developed to investigate trade-offs between economic and environmental objectives on Spanish dairy sheep farms. The tool combines a hierarchical stochastic simulation model at three levels with a multi-objective optimisation procedure based on genetic algorithms. The first level of simulation includes rumen, reproduction and nutrient balances submodels. These three submodels are integrated into an animal model, which constitutes the second level. The third level is the farm, which includes the flock, the feeding and reproductive management, the availability of feeding resources, and the farm economics. The multi-objective genetic algorithm applies to the farm level. The tool was validated for the different levels of simulation, with outputs having an acceptable level of accuracy and representing correctly the links between feeding and reproduction. The tool was used to optimise the Latxa breed farming systems of the Basque Country (Spain). Two farm types were simulated: a COAST farm located in low-altitude Atlantic conditions and longer grazing period, and the INLAND farm located in mountain areas with a shorter grazing period. The optimisation provided a set of optimal solutions with different economic and environmental (N excretion) performances. The optimal solutions increased the financial margin over feed costs in both farms (+24% and + 22% for COAST and INLAND, respectively). The final space of solutions showed a clear trade-off between the economic and environmental performance (nitrogen

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excretion). The difference in the financial margin over feed costs between the solutions could be interpreted as the opportunity cost of greening in policy design, i.e., the payment that farmers should receive to change their farming methods to reduce nitrogen pollution.

来源: Agricultural Systems

发布日期: 2019-02-25

全文链接:

<http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzFAbyAZ3xuACtTcmZ1b7M635.pdf>

### 3 . Climate change induced impact and uncertainty of rice yield of agro-ecological zones of India (气候变化对印度农业生态区水稻产量的影响)

简介: An innovative approach of using agro-ecological zones (AEZs), instead of using political boundaries, has been adopted for climate change impact analysis on rice production of India. The analysis has been carried out by using a process-based Crop Simulation Model (CSM)-CERES-Rice fed with improved state of art bias corrected climate projections from eight Global Climate Models (GCMs) for four expected climatic scenarios-Representative Concentration Pathways (RCP 2.6, 4.5, 6.0 and 8.5). Using weather-soil-crop information along with year-wise effect of CO<sub>2</sub> increase assumption for different RCPs as input to the crop model, simulations were performed for the base period (19762005) as well as three future periods (2020s: 20062035, 2050s: 20362065, and 2080s: 20662095) for insight understanding of climate change impact on rice yield. Model simulated rice yields of future periods were compared with that of the base period to quantify the climate change impact. Results based on multi-GCM ensemble show expected increase in rice yield of most of the AEZs in RCP 2.6 but as on moving towards RCP 8.5 through RCP 4.5 and 6.0, the positive impact on rice yield in RCP 2.6, in major rice producing zones, is expected to mitigate and lead to the negative impact by 2080s. Large spatiotemporal variability is expected in most of the zones with humongous variability in arid and hilly zones. The overall change in spatial rice yield in India taking all used GCM-RCP combinations in consideration is expected to vary from 1.2 to 8.8%, 0.7 to 12.6% and -2.9 to 17.8% due to the expected climate change in 2020s, 2050s and 2080s, respectively.

来源: Agricultural Systems

发布日期: 2019-02-13

全文链接:

[http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzE\\_KABd4hADPANZa68F4612.pdf](http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzE_KABd4hADPANZa68F4612.pdf)