2022年第30期总353期

动物营养专题

本期导读

前沿资讯

学术文献

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前沿资讯

1．OECD/FAO：全球蛋白质需求有望攀升至2032年

简介：根据经济合作与发展组织（OECD）和联合国粮食及农业组织（FAO）的最新报告，预计未来 10 年全球对家禽、牛肉和猪肉的需求将增加。经合组织/粮农组织的报告预测，由于与其他蛋白质相比价格较低和脂肪含量较低，全球禽肉消费量近期攀升，预计未来十年全球禽肉消费量将增至 1.54 亿吨。报告补充说，这一增长占到 2031 年预计将消费的额外肉类的近一半，反映了禽肉在中国、印度、印度尼西亚、马来西亚、巴基斯坦、秘鲁、菲律宾和越南等国家的饮食中所起的作用。与此同时，经合组织/粮农组织的报告预计，未来 10 年全球猪肉消费量将增至 1.29 亿吨，猪肉仍将成为欧盟食用最多的蛋白质。报告指出，大多数拉丁美洲猪肉价格表明，中产阶级对猪肉和家禽的需求不断增长，将有助于保持这些蛋白质在这些地区的最爱。报告称，预计未来 10 年，几个亚洲国家的人均猪肉消费量也将增加。该报告还预测，到 2031 年，全球牛肉消费量将增加到 7600 万吨，但人均消费量预计将下降 2%。亚洲及太平洋地区和中国预计的人均牛肉消费却与之相反。报告指出，中国——世界第二大人均牛肉消费国——的消费量预计在未来 10 年将增长 10%。经合组织/粮农组织报告还预测，随着限制的解除，在新冠疫情大流行期间肉类消费从餐饮服务转向家庭烹饪的转变将恢复到 新冠疫情之前的模式。报告补充说，预计国内消费将受到全球经济和人口增长的推动，尤其是在低收入国家。

来源：国际畜牧网

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全文链接:

http://agri.ckcest.cn/file1/M00/10/0A/CsgkOGLUpeeAIN7TAArYavA5oxg069.pdf

学术文献

1．抗菌肽对断奶仔猪生长性能、腹泻率和猪瘟疫苗免疫效果的影响

简介：试验旨在研究不同添加水平的抗菌肽对断奶仔猪生长性能、腹泻率和猪瘟疫苗免疫效果的影响。90头断奶仔猪随机分成未添加组、添加Ⅰ组、添加Ⅱ组,分别在基础日粮中添加0、0.05%、0.10%抗菌肽,试验期30 d。结果显示,与未添加组相比,添加Ⅰ组、添加Ⅱ组的断奶仔猪末重、平均日采食量、平均日增重、猪瘟抗体阻断率以及血清免疫球蛋白A （IgA）、免疫球蛋白G （IgG）、白细胞介素-2 （IL-2）的含量均显著升高（P<0.05）,料重比、腹泻率均显著降低（P<0.05）。与添加Ⅰ组相比,添加Ⅱ组断奶仔猪的平均日采食量、平均日增重、猪瘟抗体阻断率及血清IgG、IL-2的含量均显著升高（P<0.05）,腹泻率显著降低（P<0.05）。研究表明,在日粮中添加抗菌肽可使断奶仔猪的生长性能、腹泻率及猪瘟疫苗免疫效果得到改善,添加剂量为0.10%时改善效果最明显。

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http://agri.ckcest.cn/file1/M00/10/0A/CsgkOGLUv2WAQJgWABX45ePFzkQ187.pdf

2．Gene editing provides a tool to investigate genes involved in reproduction of pigs（基因编辑提供了研究猪繁殖相关基因的工具）

简介：CRISPR-Cas9 gene editing technology provides a method to generate loss-of-function studies to investigate, in vivo, the specific role of specific genes inregulation of reproduction. With proper design and selection of guide RNAs (gRNA)designed to specifically target genes, CRISPR-Cas9 gene editing allows investigationof factors proposed to regulate biological pathways involved with establishment andmaintenance of pregnancy. The advantages and disadvantages of using the currentgene editing technology in a large farm species is discussed. CRISPR-Cas9 geneediting of porcine conceptuses has generated new perspectives for the regulation ofendometrial function during the establishment of pregnancy. The delicateorchestration of conceptus factors facilitates an endometrial proinflammatoryresponse while regulating maternal immune cell migration and expansion at theimplantation site is essential for establishment and maintenance of pregnancy.Recent developments and use of endometrial epithelial“organoids”to studyendometrial function in vitro provides a future method to screen and target specificendometrial genes as an alternative to generating a gene edited animal model. Withcontinuing improvements in gene editing technology, future researchers will be ableto design studies to enhance our knowledge of mechanisms essential for earlydevelopment and survival of the conceptus.

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http://agri.ckcest.cn/file1/M00/03/38/CsgkOYcrraOAOnzyAB9B6rOBojQ372.pdf

3．猪肠道微生物与机体脂质代谢研究进展

简介：肠道微生物在调控宿主脂质代谢中发挥重要作用.猪是一种易沉积脂肪的动物,但其很少发生代谢性疾病,其肠道核心菌群及代谢产物被认为是主导该生理现象的原因之一.本文系统综述了猪肠道微生物与脂质代谢的关系,分析了微生物代谢产物包括短链脂肪酸、胆碱代谢物和胆汁酸等对脂质代谢影响作用,以期洞悉肠道微生物调控宿主脂质代谢的潜在机制.旨在为猪生产中机体脂质沉积调控提供思路,为人类脂质代谢紊乱所引起的代谢性疾病研究提供可用模型和借鉴.

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http://agri.ckcest.cn/file1/M00/03/38/CsgkOYcrc3uAJnzmAAOpOVBsyLA834.pdf

4．Isoquinoline alkaloids impact intestinal health and function of weanling pigs fed diets formulated below amino acid requirements（饲喂低于氨基酸要求的日粮，异喹啉生物碱影响断奶仔猪肠道健康和功能）

简介：Isoquinoline alkaloids (IQ) are a phytogenic feed additive included in diets for swine to

promote growth and intestinal health. An experiment tested the hypothesis that inclusion of IQ in diets for weanling pigs formulated below or at amino acid (AA) requirements improve intestinal health and growth performance of pigs. Two-hundred weanling pigs (6.11 ± 0.61 kg) were allotted to 4 dietary treatments with 5 pigs per pen and 10 replicate pens per treatment for a 27 d, 2-phase experiment. Diets were arranged in a 2 × 2 factorial with AA at or 10% below requirements and with IQ at 0 or 120 mg/kg feed. Growth performance was determined and faeces (d 14 and 26), and tissue samples (d 27) were collected. Data were analysed with a general linear mixed model using AA level, IQ inclusion, and the interaction as main effects and pen as random effect. Pigs fed diets with IQ tended to have greater ($P < 0.10$) ADFI, whereas G:F was reduced if dietary AA were reduced ($P < 0.05$). If diets contained adequate AA on d 14, IQ increased phenol in the faeces, whereas when diets with reduced AA were fed, IQ decreased phenol in the faeces (interaction, $P < 0.05$). If AA were at requirements, lamina propria in the jejunum was not affected by IQ inclusion, but if AA were below requirements, IQ decreased lamina propria thickness (interaction, $P < 0.05$). Jejunal villus height tended to increase ($P < 0.10$) with IQ regardless of dietary AA concentration. If AA were below requirements, IQ tended to increase occludin in the jejunal mucosa, whereas if AA were at requirements, IQ did not influence occludin expression (interaction, $P < 0.10$). In conclusion, if AA are provided below requirements, dietary IQ modulates intestinal function and faecal metabolite synthesis in weanling pigs.

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