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动物营养专题

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前沿资讯

1．未来十年我国猪肉供给偏紧，猪价高点或出现在2020年元旦到春节

简介：2018年8月份，我国首次爆发非洲猪瘟疫情，对我国整个生猪产业和市场都造成较大影响。《中国农业展望报告(2019—2028)》分析预测：未来十年我国猪肉供给偏紧，进口将保持较高水平。报告引用国家统计局数据，2018年，全国生猪出栏6.94亿头，与上年相比下降1.2%;猪肉产量5404万吨，与上年相比下降0.9%。中国农科院农业信息研究所副研究员朱增勇：从去年10月份开始，我们整个能繁母猪产能和生产产能出现了快速地下降。(今年)3月份我们整个能繁母猪的存栏同比下降了21%，也就预示着我们2019年整个生猪的供给会出现明显下滑。我们预计如果乐观情况之下，2019年整个生猪的产量下降6.7%。报告分析，2019年3月份以后，国内市场猪肉价格开始提振，预计5月份，整个猪价可能会出现一个阶段性的快速上涨。尤其是下半年，受能繁母猪缺口的影响，市场猪肉供给将会出现偏紧的局面。

来源：中国饲料行业信息网

发布日期:2019-04-22

全文链接:

http://www.feedtrade.com.cn/news/china/2019-04-22/2032592.html

2．荷兰合作银行：预测ASF将导致中国猪肉减少30%

简介：Rabobank近期预测，非洲猪瘟(ASF)会使中国猪肉供应减少25%至35%。荷兰合作银行动物蛋白分析师撰写的分析报告中指出，非洲猪瘟病毒正在影响约1.5亿至2亿头猪。中国猪肉产量预期下降30％，下降的总量比美国年度猪肉产量多近30％，相当于欧洲年度猪肉供应量。分析师补充道，这些损失不能轻易被其他蛋白质（鸡肉，鸭肉，海鲜，牛肉和羊肉）所取代，大型进口也不能完全抵消损失。“我们相信这将导致2019年动物蛋白总供应量中出现近1000万公吨的净供应缺口。”

来源：搜猪网

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全文链接:

http://www.soozhu.com/article/373931/

学术文献

1．极低蛋白日粮补充不同形式氮营养素对生长猪回肠食糜菌群、代谢产物和屏障功能的影响

简介：[目的]本试验旨在研究极低蛋白(ELP)日粮下,补充不同形式氮营养素(氨基酸或酪蛋白)对生长猪回肠微生物、代谢产物和屏障功能的影响。[方法]试验选用80头PIC阉公猪(体质量约15.57 kg,48日龄),随机分为4组:中等蛋白组(MP)、低蛋白组(LP)、极低蛋白+氨基酸组(ELP-AA)和极低蛋白+酪蛋白组(ELP-CAS),日粮粗蛋白(CP)水平分别为17.00%、15.00%、13.00%和13%。每个处理5个重复,每个重复4头仔猪。试验期28天。MP和LP两组添加必需氨基酸(AA),ELP-AA组添加非必需AA以达到LP组日粮水平,ELP-CAS

组使用3%酪蛋白部分替代ELP-AA组的单体AA,使其满足营养需要。试验期28 d,于第29天每个重复挑选1头接近栏平均体质量的猪屠宰,采集回肠食糜和肠道组织样品,用于各项指标测定。[结果]与MP组相比,ELP-AA组回肠食糜中双歧杆菌属(Bifidobacterium)、乳酸杆菌属(Lactobacillus)和消化链球菌属(Peptostreptococcus)的数量显著降低(P <0.05),短链脂肪酸、氨态氮和生物胺的含量均显著下降(P <0.05),而补充酪蛋白后,乙酸、丁酸、氨态氮、腐胺和精胺的含量得到显著恢复(P <0.05)。基因表达方面,与LP组相比,ELP-AA组部分肠道屏障功能相关基因(MUC-1、MUC-2和Occludin)的表达量均显著下调(P<0.05),而MUC-1和Occludin的表达量在ELP-CAS组和MP或LP组之间无显著差异(P> 0.05)。相关性分析结果表明,Lactobacillus数量与丁酸和生物胺含量、MUC-1、MUC-2和Occludin基因表达量呈显著正相关。[结论]饲喂ELP日粮补充单体AA对回肠微生物数量、代谢以及肠道组织屏障均产生不利影响,而补充酪蛋白能部分改善回肠有益微生物的生长并恢复部分肠道屏障相关基因的表达,提示在极低蛋白质水平下,补充酪蛋白对维持机体正常氮利用、肠道微生物生长代谢和肠道屏障功能具有重要作用。

来源：南京农业大学学报

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全文链接:

http://agri.ckcest.cn/file1/M00/06/6A/CsgkOFy-eSCATV9BAAORhhqMDjU491.pdf

2．Effect of different time intervals after feeding on plasma metabolites in growing pigs: an UPLC - MS -based metabolomics study(饲喂后不同时间间隔对生长猪血浆代谢产物的影响：基于UPLC-MS的代谢组学研究?)

简介：A diet consumed by pigs provides the nutrients for the production of a large number of metabolites that, after first-pass metabolism in the liver, circulate systemically where they may exert diverse physiologic influences on pigs. So far, little is known of how feeding elicits changes in metabolic profiles for growing pigs. This study investigated differences in plasma metabolites in growing pigs at several intervals after feeding using the technique of metabolomics. Ten barrows (22.5 ± 0.5 kg BW) were fed a corn-soybean meal basal diet and were kept in metabolism crates for a period of 11 days. An indwelling catheter was inserted into the jugular vein of each pig before the experimental period. Plasmas before and 1, 4, and 8 hr after feeding were collected at day 11 and differential metabolites were determined using a metabolomics approach. Direct comparison at several intervals after feeding revealed differences in 14 compounds. Identified signatures were enriched in metabolic pathways related to linoleic acid metabolism, arginine and proline metabolism, lysine degradation, glycine, serine and threonine metabolism, and lysine biosynthesis. These results suggest that plasma metabolites of growing pigs after feeding were modulated through changes in linoleic acid metabolism and amino acid metabolism.

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全文链接:

http://agri.ckcest.cn/file1/M00/06/6A/CsgkOFy-dkWAJO3HABEfwcJCe8c646.pdf

3．Exogenous carbohydrases added to a starter diet reduced markers of systemic immune activation and decreased Lactobacillus in weaned pigs（添加到起始饮食中的外源性糖酶降低了断奶仔猪的全身免疫激活标记和降低乳酸杆菌）

简介：Although the impact of carbohydrases on performance and nutrient utilization has been well studied, their effects on immune status and intestinal microbiota are less known in pigs. This study aimed to evaluate the impact of xylanase (X) and a carbohydrase enzyme blend (EB; cellulase, ß-glucanase, and xylanase) on the immune profile of the intestine and peripheral system as well as intestinal microbes and microbial metabolites of weaned pigs fed higher fiber diets. Pigs (n = 460; 6.43 ± 0.06 kg BW; F25 × 6.0 Genetiporc) were blocked by initial BW. Pens (n = 48; 12 per treatment; 9 or 10 pigs per pen) were randomly assigned to 1 of 4 dietary treatments, including a higher fiber control diet (CON) and the CON supplemented with 0.01% X, 0.01% EB, or both enzymes (X + EB), arranged in a 2 × 2 factorial. The diets were based on corn, soybean meal, corn distillers dried grains with solubles, and wheat middlings. After 7-d adaptation to the environment, pigs were fed experimental diets ad libitum for 28 d. Blood samples were collected from the same pig within each pen on days 0, 7, 14, and 28. Intestinal tissues and digesta were collected on day 28. Bacteria 16S rRNA gene copy numbers were quantified using qPCR. The mRNA levels of colonic IL-17, occludin (OCLN), and claudin 3 (CLDN3) were greater in pigs fed diets with X + EB, but not X or EB, compared with those fed CON (P < 0.05). The EB in the diet reduced plasma IL-8 over the 28-d trial compared with diets without EB (P < 0.05). There was an X × EB interaction on plasma tumor necrosis factor α and IL-1ß (P < 0.05); their levels were decreased when X and EB were added together, but not individually, compared with CON. The EB decreased cecal propionate, butyrate, and total volatile fatty acids (P < 0.05). Pigs fed X had lower ileal Lactobacillus and greater ileal and cecal Enterobacteriaceae compared with those fed unsupplemented diets (P < 0.05). The EB decreased Lactobacillus (P < 0.05) and tended to decrease (P = 0.065) Enterobacteriaceae in the colon compared with diets without EB. In conclusion, the addition of X and EB together decreased systemic markers of immune activation, potentially diverting energy and nutrients towards growth. The EB reduced colonic Lactobacillus and cecal total volatile fatty acids, probably due to improved prececal fiber and starch degradation and thus reduced substrate availability in the large intestine. These data corroborated previously observed enhanced growth in pigs fed EB-supplemented diets.

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http://agri.ckcest.cn/file1/M00/06/6A/CsgkOFy-g1iAMGrLAANJbOMC_rE096.pdf