



2023年第1期总376期

动物营养专题

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▶ 前沿资讯

1. 解读中央农村工作会议：理性看待饲料粮，学会向非耕地要食物

简介：12月23日至24日召开的中央农村工作会议提出，要树立大食物观，构建多元化食物供给体系，多途径开发食物来源。要严格考核，督促各地真正把保障粮食安全的责任扛起来。2021年中国累计进口粮食1.6亿吨，进口的6844万吨的谷物当中，5800万吨是饲料用的，占比将近85%。同时，我国居民膳食不平衡问题仍突出，成年居民超重或肥胖已经超过50%。12月25日，多位专家在接受新京报记者采访时表示，“大食物观”可以帮助人们树立多元、全面、均衡的膳食意识，因此践行大食物观极有必要。但这需要人们观念上的转变，要统筹考虑农林牧副渔甚至整个自然生态系统的可持续发展，不断加大政策和科技的投入力度，向耕地草原森林海洋、向植物动物微生物要热量、要蛋白。

来源：中国饲料行业信息网

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<http://agri.ckcest.cn/file1/M00/10/19/Csgk0G0p0g2AAowyABGu0w82Ez8359.pdf>

▶ 学术文献

1 . Effect of dietary threonine supplementation on growth performance and diarrhoea in weaned pigs （日粮补充苏氨酸对断奶猪生长性能和腹泻的影响）

简介： A large proportion of antibiotics applied in pig production is used to treat diarrhoea around 2 to 7 weeks post-weaning (PW). Nutritional strategies to prevent diarrhoea in this period are needed if the antibiotic consumption is to be lowered, and additional threonine (Thr) may be one of such strategies. The objective of this study was to test the effect of five levels of dietary Thr on faecal score (diarrhoea) and growth performance day 21 to 32 PW under commercial conditions. The study was part of a larger quadratic surface response trial with 25 treatment groups. A total of 7,952 piglets, weaned approximately at 28 days of age (average body weight (BW) 7.2 kg \pm 0.1), were randomly assigned to one of 25 treatment groups, from two weeks PW to 30 kg BW in a balanced incomplete block design. The five Thr levels represented 87%, 100%, 112%, 125% and 137% of the Danish recommended level of Thr for pigs in this weight interval. At 30 kg BW, there were no differences ($P > 0.10$) in average daily feed intake (ADFI) between the five levels of Thr, whereas average daily gain (ADG) and feed conversion ratio (FCR) were both affected by Thr level ($P < 0.05$). Piglets receiving 87% of the recommended Thr supply had lower ADG (479 vs. 505509 g/day) and a higher FCR (1.70 vs. 1.641.65 g feed/g growth) compared to pigs receiving the four higher Thr levels. The probability of diarrhoea, defined as a faecal score 3 or 4, was unaffected ($P > 0.10$) by Thr level at day 21 to 32 PW. Across Thr levels, the probability of diarrhoea was high (25.7% and 26.1%) at day 21 and 25 PW, and decreased with 10.9 percent units at day 28 PW ($P = 0.01$). There was no difference ($P = 0.83$) in diarrhoea

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probability between day 28 and 32. In conclusion, increasing the dietary Thr levels to 110%-140% of the Danish recommendation did not reduce the probability of diarrhoea from day 2132 PW on a commercial pig farm.☒

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<http://agri.ckcest.cn/file1/M00/10/19/Csgk0G0pPQmAc1EgAAoXhHmK7Kg398.pdf>

2. 微生物菌群及其代谢产物对肠道屏障功能的调控

简介: 动物肠道中存在数量庞大且种类丰富的微生物菌群, 其在调节动物机体代谢和维持肠道健康过程中起重要作用。微生物菌群的平衡受日粮、环境、代谢产物(如短链脂肪酸)的影响, 并可以通过代谢产物对动物的肠道屏障和免疫反应产生显著影响。因此, 研究菌群及其代谢产物对肠道屏障功能的影响有助于深入了解肠道微生物与动物机体的互作的机制, 确定其对动物健康应用的策略。文章综述肠道微生物菌群及代谢产物调控肠道屏障功能及其调节疾病的潜在功能, 以期对有益微生物菌群及代谢物调节动物健康状态、微生态制剂产品的研发提供参考。

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http://agri.ckcest.cn/file1/M00/03/47/Csgk0Yf_7qGAUb20ABnHWkd1SJs279.pdf

3. 乳杆菌和芽孢杆菌微生态制剂改善动物肠道黏膜免疫功能的研究进展

简介: 自抗生素耐药性问题出现以来, 微生态制剂作为抗生的有效替代品备受关注, 在动物生产领域得到广泛应用。微生态制剂涉及的菌种和菌株较多, 不同菌株的代谢机制和产物活性不同, 因此, 其对动物健康的调节机制也不完全相同。本文综述了近几年乳杆菌和芽孢杆菌微生态制剂对动物肠道黏膜免疫功能的改善效果及可能作用机制的研究进展, 为微生态制剂在畜牧生产中高效合理应用提供理论基础。

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全文链接:

http://agri.ckcest.cn/file1/M00/03/47/Csgk0Yf_7VCAEgSYACTvc0YEQ-k721.pdf

4 . Assessment of field traits, nutrient composition and digestible amino acids of corns with different endosperm textures for poultry and swine (家禽和猪不同胚乳质地玉米的田间性状、营养成分和可消化氨基酸的评估)

简介: An experiment was conducted to evaluate field traits and nutrient composition of four corn types presenting distinct endosperm textures. A total of 213 samples of different corn hybrids from a field experiment conducted in Brazil were separated into 4 groups according to the endosperm texture classification: dent (n = 30), flint (n = 51), semi-dent (n = 60) and

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semi-flint (n = 72). Crop yield, thousand grains weight and damaged grains were determined. Nutritional composition as well as digestible amino acids (AA) and metabolizable energy values for poultry and swine of the four corn types were predicted by near infrared spectroscopy. Data were submitted to analysis of variance and mean differences of corn types were separated by Tukey's test at 5% of significance. Principal component analysis was performed for the main nutritional variables and damaged grains. Starch concentration was greater ($P < 0.01$) in dent than in flint corn. Dent corn presented higher percentage of damaged grains ($P < 0.01$) than the other types. Flint corn had the lowest crop yield ($P < 0.001$); however, this corn texture presented the higher crude protein, total Cys, Thr, Arg, Ile, Leu, Val, His, Gly, Ser, Pro, Ala and Glu contents than the remaining three types ($P < 0.001$). The flint type had also the highest ($P < 0.0001$) content of most of digestible AA for swine and poultry. Energy values were not different among corn types ($P > 0.05$). In conclusion, field traits and nutritional composition of corn vary depending on the characteristic of its endosperm, and such differences should be considered by the corn and feed production chains.

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