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丁酸钠对肉鸭生长及粪便中污染物减排效果的影响

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Effect of Sodium Butyrate on Growth Performance of Broiler Duck and Reduction of Emission of Pollutants With Its Faeces

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摘要 参考文献 相关文章

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摘要 在樱桃谷肉鸭的基础日粮中添加丁酸钠,研究了丁酸钠对肉鸭生产性能及粪便中污染物含量和排放量的影响。结果表明,添加350、700和1 050 mg.kg^{-1}丁酸钠处理(试验组2、3、4)料重比较对照(试验组1)均显著降低,分别降低4.95%、6.71%和4.59%(P<0.05),0~3周试验组3和4肉鸭日增质量较对照提高9.16%和9.47%(P<0.05);添加丁酸钠可显著降低鸭粪中TN、TP、氨氮、有机质、Cu和Zn含量(P<0.05),试验组3对TN、TP、氨氮和Zn的降低效果最好,分别较对照组减少6.15%、17.36%、59.98%和18.96%;不同水平丁酸钠处理鸭粪中污染物排放量均较对照显著降低(P<0.05),试验组3对污染物TN、TP、氨氮、有机质和Zn的减排效果最好,而试验组4对Cu的减排效果最佳。在肉鸭饲料中添加700 mg.kg^{-1}丁酸钠可获得最佳的生产性能和减排效果。

关键词： 丁酸钠 肉鸭 生产性能 粪便 排放量

Abstract： Effects of addition of sodium butyrate into the basic ration of broiler duck on growth performance of the duck and reduction of emission of pollutants with its faeces have been studied.Seven hundred of one year-old cherry broiler ducks were randomly divided into four treatment groups and each group into six replicates.Control group I was fed with basal ration,treatment groups II,III and IV were fed with basic ration supplemented with sodium butyrate at 350,700 and 1 050 mg · kg^{-1},respectively.Resaults show that 1)the feed/gain ratio in the treatment groups decreased significantly and was 4.95%,6.71% and 4.59%(P<0.05)lower than in the control,respectively.The average daily gain of Treatment Group III and IV was 9.16% and 9.47%(P<0.05) higher than of the control group in the first three weeks.2)Addition of sodium butyrate significantly reduced the contents of TN,TP,ammonia nitrogen,organic matter,Cu and Zn in duck manure (P<0.05),by 4.36%,13.83%,41.81%,5.45%,2.32% and 13.41%,respectively,in Treatment Group II,by 6.15%,17.36%,59.98%,4.32%,21.69% and 18.96%,respectively,in Treatment Group III,and by 2.68%,10.66%,43.61%,3.76%,40.98% and 14.88%,respectively,in Treatment Group IV.3) Although there was no significant differences between different rates of sodium butyrate in effect on pollutant emission with daily faeces excretion,they all tended to decrease.They reduced pollutants emissions in duck faeces significantly(P<0.05).Treatment Group III is the best in reducing emissions of TN,TP,ammonia nitrogen and organic matter and Treatment Group Ⅳ in reducing emission of Cu.As it can be seen,by added 700 mg · kg^{-1} into basic ration for ducklings,sodium butyrate may help achieve the best production performance and pollutants emission reduction.

Keywords： sodium butyrate broiler duck growth performance manure emission

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