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## 博落回提取物对早期断奶仔猪生长性能和血清免疫参数的影响

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### Effects of *Macleaya cordata* Extract on Growth Performance and Serum Immune Parameters of Early Weaner Piglets

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- 摘要
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**摘要** 本试验旨在研究博落回提取物(*Macleaya cordata* extract, MCE)对早期断奶仔猪生长性能和免疫功能的影响。选用体重、胎次、泌乳量、产仔数相近,健康的PIC五元杂交母猪所产的60头35日龄断奶仔猪,随机分成5个组,每组4个重复,每个重复3头仔猪。对照组饲喂未添加MCE的基础饲料,试验组分别饲喂在基础饲料中添加2.5、5.0、7.5 mg/kg MCE的试验饲料,土霉素组饲喂在基础饲料中添加50 mg/kg土霉素的试验饲料。试验期为25 d。考察仔猪生长性能,检测血清谷草转氨酶、谷丙转氨酶活性,尿素氮、白蛋白和免疫球蛋白G含量,溶菌酶活性及一氧化氮含量等免疫参数。结果表明:35~60日龄,仔猪平均日增重和料重比随MCE添加水平的提高呈二次曲线变化( $P<0.05$ );5.0 mg/kg MCE组平均日增重和平均日采食量显著高于对照组和土霉素组( $P<0.05$ ),料重比显著低于对照组、土霉素组和7.5 mg/kg MCE组( $P<0.05$ )。60日龄时,5.0、7.5 mg/kg MCE组血清谷草转氨酶活性显著低于对照组( $P<0.01$ ),土霉素组血清谷草转氨酶活性显著高于对照组和5.0、7.5 mg/kg MCE组( $P<0.01$ ),但土霉素组血清谷丙转氨酶活性显著高于对照组( $P<0.01$ );5.0 mg/kg MCE组血清尿素氮含量显著低于对照组、2.5、7.5 mg/kg MCE组和土霉素组( $P<0.01$ )。60日龄时,5.0 mg/kg MCE组血清免疫球蛋白G含量显著高于对照组、2.5、7.5 mg/kg MCE组和土霉素组( $P<0.01$ ),而土霉素组血清免疫球蛋白G含量显著高于对照组( $P<0.01$ );2.5、5.0 mg/kg MCE组血清一氧化氮含量显著高于对照组、土霉素组( $P<0.01$ ),对照组、7.5 mg/kg MCE组差异不显著( $P>0.05$ ),土霉素组血清一氧化氮含量显著高于对照组( $P<0.01$ );5.0、7.5 mg/kg MCE组血清溶菌酶活性显著高于对照组和2.5 mg/kg MCE组( $P<0.01$ ),土霉素组血清溶菌酶活性显著高于对照组、2.5、5.0、7.5 mg/kg MCE组( $P<0.01$ )。结果提示,MCE能够提高断奶仔猪血清免疫球蛋白G、一氧化氮含量和溶菌酶活性,显著改善免疫功能,明显增强断奶仔猪抗病能力,从而改善生长性能,其效果优于土霉素。综合生长性能和血清抗菌指标二次曲线结果,MCE在断奶仔猪饲料中的适宜添加水平为4.5 mg/kg。

**关键词:** 博落回提取物 早期断奶仔猪 生长性能 免疫参数

**Abstract:** This experiment was conducted to investigate the effects of *Macleaya cordata* extract (MCE) on growth performance and immunity of weaner piglets. A total of 60 piglets weaned at 35 days of age reproduced by PIC hybrid sows with similar body weight, parity, milk yields and litter size were designed randomly to 5 groups, and each had 4 replicates with 3 piglets per replicate. Control group was not added the MCE, experimental groups were fed basal diets supplemented with 2.5, 5.0 and 7.5 mg/kg MCE, respectively, and tetracycline group was fed the basal diet with adding 50 mg/kg of tetracycline. The duration of the experiment was 25 days. Growth performance, serum glutamic-oxalacetic transaminase (GOT) and glutamic-pyruvic transaminase (GPT) activities, contents of urea nitrogen (UN), albumin and immunoglobulin G (IgG), lysozyme (LSZ) activity and nitric oxide (NO) content of piglets were determined, respectively. The results indicated that at 35 to 60 days of age, average daily gain and feed to gain ratio of weaner piglets showed a quadratic curve change with the increase of MCE supplementation ( $P<0.05$ ); average daily gain and average daily feed intake of piglets in 5.0 mg/kg MCE group were significantly higher than those in control group and tetracycline group ( $P<0.05$ ), and feed to gain ratio was significantly lower than that in the control group, 7.5 mg/kg MCE group and tetracycline group ( $P<0.05$ ). At 60 days of age, serum GOT activity in 5.0 and 7.5 mg/kg MCE groups was extremely significantly lower than that in control group ( $P<0.01$ ), and serum GOT activity in tetracycline group was extremely significantly lower than that in control group, 5.0 and 7.5 mg/kg MCE groups ( $P<0.01$ ), but serum GPT activity was extremely significantly higher than that in control group ( $P<0.01$ ). Serum UN content in 5.0 mg/kg MCE group was extremely significantly lower than that in control group,

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2.5 and 7.5 mg/kg MCE groups and terramycin group ( $P<0.01$ ). At 60 days of age, serum IgG content in 5.0 mg/kg MCE group was extremely significantly higher than that in control group, 2.5 and 7.5 mg/kg MCE groups and terramycin group ( $P<0.01$ ). Serum IgG content in terramycin group was extremely significantly higher than that in control group ( $P<0.01$ ). Serum NO content in 2.5 and 5.0 mg/kg MCE groups was extremely significantly higher than that in control group and terramycin group ( $P<0.01$ ), and for control group and 7.5 mg/kg MCE group, there were no significant differences ( $P>0.05$ ). Serum NO content in terramycin group was extremely significantly higher than that in control group ( $P<0.01$ ). Serum LSZ activity in 5.0 and 7.5 mg/kg MCE groups was extremely significantly higher than that in control group and 2.5 mg/kg MCE group ( $P<0.01$ ). Serum LSZ activity in terramycin group was extremely significantly higher than that in control group and 2.5, 5.0 and 7.5 mg/kg MCE groups ( $P<0.01$ ). It is suggested that the MCE can enhance the contents of serum IgG, NO and LSZ activity, and improve immunity, disease-resistant ability and growth performance of weaner piglets. MCE effects are remarkably superior to terramycin. Based on the results of quadratic curve of growth performance and serum antibacterial indexes, adequate supplementation of MCE in weaner piglet diets is 4.5 mg/kg.

Keywords: *Macleaya cordata* extra, early weaner piglets, growth performance, immune parameters

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[1] 万学攀. 博落回生物碱成分分离及抑菌活性研究. 硕士学位论文. 杨凌: 西北农林科技大学, 2008.

[2] 庞发根. 博落回抗癌活性的研究. 硕士学位论文. 沈阳: 沈阳药科大学, 2005.

[3] 饶华, 蔡鹏, 周锡红, 等. 博落回提取物对断奶仔猪生长性能的影响[J]. 中国兽药杂志, 2009, 43(11): 42-45.

[4] 蔡鹏, 孙志良, 曾建国, 等. 不同剂量博落回提取物对断奶仔猪生长性能的影响[J]. 中国畜牧兽医, 2010, 37(5): 41-43.

[5] VIEIRA S L, BERRES J, REIS R N. Studies with sanguinarine like alkaloids as feed additive in broiler diets[J]. Brazilian Journal of Poultry Science, 2008, 10(1): 67-71.

[6] 袁雪波, 马黎, 陈克麟, 等. 早期断奶仔猪饲料丙氨酸谷氨酰胺适宜添加量的研究[J]. 动物营养学报, 2012, 24(4): 631-637.

[7] 满意. 博落回提取物对断奶仔猪生长性能、血液免疫、氧化应激指标及相关基因表达的影响. 硕士学位论文. 昆明: 云南农业大学, 2012.

[1] 徐晨晨, 王宝维, 葛文华, 张名爱, 岳斌, 史雪萍. 铜对5~16周龄五龙鹅生长性能、屠宰性能、营养物质利用率和血清激素含量的影响[J]. 动物营养学报, 2013, 25(9): 1989-1997

[2] 张世忠, 王全溪, 王长康, 吴南洋, 江斌, 邵良平. 丁氨丙磷溶液对肉仔鸡生长性能和免疫功能的影响[J]. 动物营养学报, 2013, 25(9): 2111-2117

[3] 张铁涛, 崔虎, 高秀华, 杨福合, 李光玉, 邢秀梅. 低蛋白质饲料中添加蛋氨酸对育成期蓝狐生长性能和营养物质消化代谢的影响[J]. 动物营养学报, 2013, 25(9): 2036-2043

[4] 黄学琴, 任周正, 曾秋凤, 张克英, 丁雪梅, 白世平, 罗玉衡, 刘永刚. 液态复合酶制剂对肉鸭生长性能及钙、磷代谢的影响[J]. 动物营养学报, 2013, 25(9): 2082-2090

[5] 孙敏敏, 刘含亮, 王红卫, 孟晓, 王纪亭, 万文菊. 酵母铬对尼罗罗非鱼生长和糖代谢的影响[J]. 动物营养学报, 2013, 25(9): 2143-2149

[6] 荆祎, 李光玉, 刘晗璐, 杨雅涵, 鲍坤, 李志鹏. 不同乳酸杆菌添加剂对水貂生长性能、营养物质消化率、氮平衡及血清生化指标的影响[J]. 动物营养学报, 2013, 25(9): 2160-2167

[7] 叶慧, 郑玲玲, 雷建平, 冯定远, 左建军. 25羟基维生素D<sub>3</sub>和1 $\alpha$ 羟基维生素D<sub>3</sub>代替维生素D<sub>3</sub>对42~63日龄黄羽肉鸡生长性能、血清生化指标和胫骨发育的影响[J]. 动物营养学报, 2013, 25(8): 1752-1761

[8] 向泉, 周兴华, 陈建, 黄辉, 李代金, 王文娟, 吴青, 周小秋. 饲料脂肪水平对白甲鱼幼鱼生长性能、体组成和血清生化指标的影响[J]. 动物营养学报, 2013, 25(8): 1805-1816

[9] 常启发, 白会新, 石宝明, 单安山, 魏传玉, 于长青, 仝宝生. 黄腐酸对生长猪生长性能、血清生化指标、血常规参数和免疫功能的影响[J]. 动物营养学报, 2013, 25(8): 1836-1842

[10] 周明, 刘波, 戈贤平, 谢骏, 万金娟, 崔素丽. 饲料维生素E添加水平对团头鲂生长性能及血液和肌肉理化指标的影响[J]. 动物营养学报, 2013, 25(7): 1488-1496

[11] 刘志, 张铁涛, 郭强, 吴学壮, 高秀华, 杨福合, 邢秀梅. 饲料铜水平对育成期蓝狐生长性能、营养物质消化率及氮代谢的影响[J]. 动物营养学报, 2013, 25(7): 1497-1503

[12] 张建禄, 余平, 黄吉芹, 吉红, 邱立疆, 杨克. 脱脂蚕蛹替代饲料中鱼粉对建鲤生长性能、体成分及健康状况的影响[J]. 动物营养学报, 2013, 25(7): 1568-1578

- [13] 吴苗苗, 肖昊, 印遇龙, 李丽立, 李铁军. 谷氨酸对脱氧雪腐镰刀菌烯醇刺激下的断奶仔猪生长性能、血常规及血清生化指标变化的干预作用[J]. 动物营养学报, 2013,25(7): 1587-1594
- [14] 肖曼, 高振华, 李兴华, 张少成, 陈训银, 张晓慧, 董爱华, 曹赞, 陈广信. 酵母培养物对肉仔鸡生长性能、肠黏膜结构及肠道菌群的影响[J]. 动物营养学报, 2013,25(7): 1624-1631
- [15] 李志华, 付京花, 唐雪莲, 侯梦杰, 吴海斌, 潘庆. 维生素E在罗非鱼幼鱼饲料中的应用及耐受性研究[J]. 动物营养学报, 2013,25(7): 1648-1655