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有机螯合锰添加水平对母貂繁殖性能及仔貂生长性能的影响

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Effects of Supplemental Level of Organism Chelated Manganese on Reproduction Performance of Female Minks and Growth Performance of Young Minks

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摘要 本试验旨在探讨繁殖期母貂饲粮中锰的适宜量。试验选取150只平均体重为(1 005±113) g的健康成年母貂,根据随机区组法分成5组,每组设30个重复,每个重复1只水貂。各组水貂分别饲喂在基础饲粮中添加0(Ⅰ组)、15(Ⅱ组)、50(Ⅲ组)、100(Ⅳ组)和500 mg/kg(Ⅴ组)锰的试验饲粮。锰以有机螯合锰形式添加,基础饲粮中锰含量约为25 mg/kg。试验时间为2011年1月26日至2011年6月23日。结果表明:饲粮有机螯合锰添加水平对母貂血清雌二醇与孕酮含量、妊娠天数、受配率、产仔率、窝产仔数、窝产活仔数,以及仔貂初生窝重、断奶成活数、断奶成活率、1日龄和7日龄平均个体重均无显著影响(*P*>0.05),但母貂产仔率、窝产仔数、窝产活仔数,以及仔貂断奶成活数、断奶成活率有随着锰添加水平的升高而增加的趋势。饲粮中添加有机螯合锰对配种跨度影响不大,但能够缩短平均初配持续天数,使配种更为集中。饲粮有机螯合锰添加水平对仔貂断奶窝重、15日龄和45日龄平均个体重及1~45日龄平均日增重的影响差异显著(*P*<0.05)。仔貂断奶窝重随着锰添加水平的升高先增后降,Ⅳ组、Ⅴ组显著高于Ⅱ组(*P*<0.05);仔貂15日龄平均个体重随着锰添加水平的升高而降低,Ⅰ组、Ⅱ组与Ⅴ组相比差异达到显著水平(*P*<0.05);仔貂45日龄平均个体重和1~45日龄平均日增重均以Ⅱ组最小,与Ⅰ组相比有显著差异(*P*<0.05)。本试验条件下,综合母貂繁殖性能及仔貂生长性能,建议繁殖期母貂基础饲粮锰含量在25 mg/kg左右时,锰(有机螯合锰形式)的添加水平为100 mg/kg,即饲粮中锰总含量在125 mg/kg左右。

关键词: 有机螯合锰 繁殖性能 母貂 生长性能 仔貂

Abstract: The aim of this study was to investigate the optimal manganese level in the basal diet of female minks during the idophase. One hundred and fifty healthy female minks with the body weight of (1 005±113) g were selected and assigned into 5 groups by randomized block, there were 30 replicates in each group and 1 minks in each replicate. Supplemental levels of manganese in basal diets were 0 (group Ⅰ), 15 (group Ⅱ), 50 (group Ⅲ), 100 (group Ⅳ) and 500 mg/kg (group Ⅴ), respectively. Manganese was added as organic chelated form, and manganese content in the basal diet was about 25 mg/kg. The experimental period was from January 26, 2011 to June 23, 2011.The results showed that there were no significant differences in serum estradiol and progesterone contents, pregnancy days, mating rate, kidding rate, litter number, number of born alive, birth litter weight, number of weaned alive, weaning survival rate, and average individual weight of 1 and 7 days of age by supplemental level of organism chelated manganese (*P*>0.05), but kidding rate, litter number, number of born alive, number of weaned alive, weaning survival rate had an increase trend with increasing of manganese supplemental level. Supplemental level of organism chelated manganese had little effect on mating span, but could shorten average duration days of first mating and promote the concentration level of mating. There were significant differences in weaning weight of litter, average individual weight of 15 and 45 days of age, and average daily gain from 1 to 45 days of age (*P*<0.05). The weaning weight of litter tended to increase at first and then decrease with increasing of manganese supplemental level, and groups Ⅳ and Ⅴ were significantly higher than group Ⅱ(*P*<0.05); the average individual weight of 15 days of age had a decrease trend with increasing of manganese supplemental level, and significant differences were found between groups Ⅰ and Ⅱ and group Ⅴ (*P*<0.05); the average individual weight of 45 days of age and average daily gain from 1 to 45 days of age in group Ⅱ were the lowest, and had significant differences compared with group Ⅰ (*P*<0.05). Under this study conditions, based on comprehensive consideration of the

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reproduction performance of female minks and growth performance of young minks, it is suggested that optimal supplemental level of manganese by organic chelated form in the basal diet (about 25 mg/kg) is 100 mg/kg for female mink during the idophase, that is total level of manganese in the diet is about 125 mg/kg.

Keywords: organic chelated manganese, reproduction performance, female mink, growth performance, young mink

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