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## 饲料脂肪源对育成期水貂生长性能和营养物质消化代谢的影响

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## Effects of Dietary Fat Sources on Growth Performance and Nutrient Digestion and Metabolism of Minks (*Mustelidae vison*) in Late Growing Period

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**摘要** 本试验旨在研究饲料脂肪源对育成期水貂生长性能和营养物质消化代谢的影响。试验选取120只70日龄、体重[公貂(1.08±0.08)kg、母貂(0.77±0.04)kg]相近、健康的水貂随机分成4组, 每组30只(公母各占1/2), 分别饲喂以豆油(I组)、鸡油(II组)、鱼油(III组)、猪油(IV组)为脂肪源, 代谢能为15.5 MJ/kg(粗脂肪含量为22%)的试验饲料, 试验期60 d。结果表明: 1) 饲料脂肪源对试验结束时水貂的体重无显著影响( $P>0.05$ )。2) 公貂IV组粗蛋白质消化率显著高于I组( $P<0.05$ ); 母貂II组粗蛋白质消化率显著高于I组( $P<0.05$ )。3) 公貂I组、III组粗脂肪消化率显著高于IV组( $P<0.05$ ); 母貂IV组粗脂肪消化率显著低于其他各组( $P<0.05$ )。4) 公貂I组氮沉积显著低于IV组( $P<0.05$ ); 母貂I组氮沉积显著低于其他各组( $P<0.05$ ); 母貂净蛋白质利用率、蛋白质生物学价值组间差异显著( $P<0.05$ ), 公貂组间没有显著差异( $P>0.05$ ), 但公貂、母貂均以IV组最高。5) 公貂IV组总能、消化能、代谢能均显著高于I组和III组( $P<0.05$ ); 母貂I组总能、消化能、代谢能均显著低于其他3组( $P<0.05$ )。由以上可以得出, 以鱼油为饲料脂肪源, 育成期公貂具有较高的脂肪消化率; 以鸡油为饲料脂肪源, 母貂的营养物质消化率较高; 育成期水貂鱼油脂肪消化率虽较高, 但猪油可以提高净蛋白质利用率及氮沉积; 综合考虑饲料成本和营养物质消化与利用, 建议在实际生产中应用鱼油和猪油的混合油脂作为育成期水貂饲料的脂肪源。

**关键词:** 育成期 水貂 脂肪源 脂肪酸 生长性能 消化代谢 代谢能

**Abstract:** This study was conducted to study the effects of dietary fat sources on growth performance, nutrient digestion and metabolism of minks (*Mustelidae vison*) in late growing period. One hundred and twenty healthy minks aged 70 days with similar body weight [ $\bar{x}$  (1.08±0.08) kg,  $\bar{y}$  (0.77±0.04) kg] were selected and randomly assigned to four groups with 30 minks (half male and half female) in each group. Minks were fed experimental diets with fat sources of soybean oil (group I), chicken oil (group II), fish oil (group III) and lard (group IV), respectively, and the metabolizable energy was 15.5 MJ/kg. [the ether extract (EE) content was 22%] The experiment lasted for 60 days. The results showed as follows: 1) dietary fat sources had no significant effects on body weight of minks at the end of the experiment ( $P>0.05$ ). 2) Crude protein (CP) digestibility of male minks in group IV was significantly higher than that in group I ( $P<0.05$ ); CP digestibility of female minks in group II was significantly higher than that in group I ( $P<0.05$ ). 3) EE digestibility of male minks in groups I and III was significantly higher than that in group IV ( $P<0.05$ ); EE digestibility of female minks in group IV was significantly higher than that in the other groups ( $P<0.05$ ). 4) Retained nitrogen of male minks in group I was significantly lower than that in group IV ( $P<0.05$ ); retained nitrogen of female minks in group I was significantly lower than that in the other groups ( $P<0.05$ ); there were significant differences in net protein utilization and biological value of protein of female minks among different groups ( $P<0.05$ ), but no significant differences were observed in those of male minks ( $P>0.05$ ), and the highest values all presented in group IV. 5) Gross energy, digestible energy and metabolizable energy of male minks in group IV were significantly higher than those in groups I and III ( $P<0.05$ ); gross energy, degistaile energy and metabolizable energy of female minks in group I were significantly lower than those in the other groups ( $P<0.05$ ). In conclusion, male minks in late growing period have higher fat digestibility when using fish oil was as their dietary fat source; female minks in late growing period have higher nutrient digestibility when using chicken oil was as their

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dietary fat source; although minks has higher fat digestibility of fish oil, lard can increase net protein utilization rate and retained nitrogen; considering feed cost and nutrient digestion and utilization, it is suggested to use a mixture of fish oil and lard as dietary fat source in husbandry.

Keywords: late growing period, minks, fat source, fatty acid, growth performance, digestion and metabolism, metabolizable energy

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