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饲料添加不同种类的糖蜜对夏季热应激奶牛采食量和产奶性能的影响

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Different Kinds of Molasses: Effects on Feed Intake and Milk Performance of Dairy Cows during Summer Heat Stress

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摘要 为了研究饲料添加糖蜜对缓解夏季奶牛热应激及其采食量和产奶性能的影响, 试验选择12头处于泌乳高峰期(泌乳天数为50~120 d), 且体重、胎次及产奶量相近的荷斯坦奶牛, 分成3组, 每组4头牛。按照有重复的3×3拉丁方进行试验设计, 通过添加3种不同种类的糖蜜——混合糖蜜(BM)、甜菜糖蜜(SM)、酵母糖蜜(YM), 研究其对夏季7月份、8月份、9月份这3个月奶牛30 min采食量、日采食量以及微生物蛋白质产量的影响。另外设计1个12头牛的对照组与3个试验期做同期比较。结果表明: 添加3种糖蜜对奶牛30 min采食量及日采食量影响极显著($P<0.01$), BM组的30 min采食量和日采食量最高, SM组次之, 2组均显著高于对照组($P<0.05$), YM组最差, 添加后未表现出显著促进作用($P>0.05$)。BM组和SM组的奶牛产奶量显著高于YM组和对照组($P<0.05$); SM组与YM组和对照组差异不显著($P>0.05$)。各组体细胞数及乳脂率均差异不显著($P>0.05$), 但是BM组和YM组体细胞数有降低的趋势。BM组乳蛋白率显著高于其他各组($P<0.05$), SM组、YM组以及对照组之间没有显著差异($P>0.05$)。添加3种糖蜜均可显著提高奶牛瘤胃微生物蛋白质的产量($P<0.05$)。由此可见, 在奶牛饲料中添加BM的效果最好, 它可以缓解夏季奶牛热应激采食量的下降, 提高泌乳量和乳蛋白率。

关键词: 糖蜜 奶牛 热应激 采食量 产奶性能

Abstract: A 3×3 duplicated Latin square experiment with 12 lactating Holstein cows (similar in body weight, calving period and milk yield, and days in milk was 50 to 120 d) was conducted to study the effects of different molasses supplementation on feed intake in 30 min and the whole day, and milk performance as well as the microbial protein production during the heat stress period in summer from July to September. Three kinds of molasses used in the experiment were blended molasses (BM), beet sugar molasses (SM) and yeast molasses (YM). A control group contained 12 cows was designed. The results showed as follows: feed intake in 30 min and daily feed intake were significantly affected by the supplementation of 3 kinds of molasses ($P<0.01$), in which those in BM group were the highest of all groups, followed by SM group, and BM group and SM group were significant higher than the control group ($P<0.05$); those in YM group were the lowest, and there were no significant differences in them between YM group and the control group ($P>0.05$). The milk yield in BM group and SM group was higher than that in YM group and the control group ($P<0.05$); somatic cell count and milk fat ratio in all groups were not significantly different ($P>0.05$). But somatic cell count in BM group and YM group had a tendency to decrease. BM supplementation significantly increased milk protein ratio compared with the other groups ($P<0.05$), but there were no significant differences among SM group, YM group and the control group ($P>0.05$). Compared with the control group, adding 3 kinds of molasses significantly increased the production of the microbial protein of the dairy cows ($P<0.05$). In conclusion, the supplementation of BM in diets can alleviate the decrease of feed intake, and increase the milk yield and milk protein ratio of dairy cows during the heat stress period in summer.

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