ABSTRACT

Optimalisation of rice straw based diet with nutrient rich supplement on in vitro fermentability and digestibility

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The aim of this study is to examine the effect of optimalization rice straw based ration with nutrient rich supplement on in vitro fermentability and digestibility. The fermentability experiment used factorial randomized block design 4x3 with five replicates. Factor A was four types of ration which were the same as for digestibility experiment whereas factor B was incubation times: B1= 1 hour, B2= 3 hours, and B3= 5 hours. The digestibility experiment used randomized block design with four ration treatments and five replications. The treatments applied were P1= 100% of rice straw (DM basis); P2 = 82,78% of rice straw + 17,22% of rice bran (DM basis); P3 = 80,39% of rice straw + 16,72% of rice bran + 2,89% of nutrient rich supplement (DM basis); P4 = 100% of complete ration consisting of 40% rice straw, 30,5% rice bran, 9% leaf meal, 8,5% fish meal, 10% molasses, 1% palm oil, and 1% mineral mix (DM basis). The result showed that concentrations of ammonia and total VFA, degradability, and digestibility were influenced by treatments and incubation time. The result of contras orthogonal test showed that treatment P4 (5 hour) is the optimal treatment for fermentation and degradability as well as for digestibility. In addition, in vitro fermentability and digestibility of rice straw based diet without and with rice bran were not greater than those that were supplemented with nutrient rich supplement or complete ration. It is concluded that improvement of rice straw based diet can be done by using complete feed.

Keywords: rice straw, nutrient rich supplement, fermentability, degradability, digestibility