ABSTRACT

EKA PRASETYANINGTYAS NURCAHYANI. H4A003005. Utillity of Tea Waste Fermented with A. niger in the Rumen. (Advisor: **C. IMAM SUTRISNO** and **SURAHMANTO**)

This research was conducted to study the utility of tea waste fermented with *A. niger* in the rumen. This research was carried on two staged, first fermentation of tea waste and second measuring degredation of tea waste fermented with *A. niger* use *in sacco* method.

Fermentation was carried on *aerob* condition during 0, 2, 4, and 6 weeks. Variable that monitored are BK, BO, NDF, ADF, PK, tannin, KcBK and KcBO. Measuring degredatin of BK, BO, NDF, ADF, PK and tannin with *in sacco* method use one 6 years old fenale cow with 346 kg body weight that fistulated on its rumen. Incubation in the rumen was carried on 7 interval incubation time, that are 2, 4, 8, 16, 24, 48 and 72 hours.

A. niger fermentation decrease ($p<0,01$) DM according to equation $y = 89,63 – 8,53x + 0,91x2$ ($R2 = 0,83$), decrease ($P<0,01$) OM according to equation $y = 77,22 – 5,96x = 0,63x2$ ($R2 =0,69$), increase ($p<0.01$) NDF content according to equation $y = 51,94 = 1,05x$ ($R2 = 0,66$), increase ($p<0,01$) ADF content according to equation $y = 38,03 = 10,47x – 4,45x2 = 0,52x3$ ($R2 = 0,94$), increase ($p<0,01$) CP content according to equation $y = 20,11 = 3,28x – 1,50x2 = 1,18x3$ ($R2 =0,59$), decrease ($p<0,01$) tannin content according to equation $y = 2,44 – 0,92x + 0,30x2 – 0,03x3$ ($R2 = 0,79$) decrease ($p<0,05$) IVDM according to equation $y = 27,08 – 0,99x$ ($R2 = 0,38$ and decrease ($p<0,01$) according to equation $y = 31,03 – 1,66x$ ($R2 = 0,61$). The best time of fermentation reached on 4, 68 weeks.

Measuring *in sacco* degradability showed that maximum degredation of tea waste without fermentation (T0) compare with tea waste fermented with *A. niger* (TF) on DM 71,26 and 51,05%; OM 71,92 and 50,89%; NDF 63,66 and 41,82%; ADF 47,27 and 21,27%; PK 78,15 and 54,00%; tannin 97,05 and 83,66%.

This result can conclude that *A. niger* fermentation has not increased the quality and the utility tea waste yet. Tea waste fermented with *A. niger* showed degredation rate and maximum degredation lower than tea waste without fermentation.

Key words; Tea waste, fermentation, *A. niger*, degredation, *in sacco*