

**PENAMBAHAN UBI KAYU (*Manihot utilissima*) DENGAN JUMLAH DAN WAKTU YANG BERBEDA DALAM PAKAN BASAL JERAMI PADI FERMENTASI UNTUK MENINGKATKAN DAYA CERNA SAPI BALI SECARA IN VITRO**

**INTISARI**

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Tujuan dari penelitian ini adalah untuk mengetahui daya cerna ternak sapi Bali secara *in vitro* terhadap penambahan ubi kayu dengan jumlah dan waktu yang berbeda pada pakan basal jerami padi fermentasi. Tahap penelitian dimulai dengan persiapan alat dan bahan meliputi sapi Bali berfistula rumen, jerami padi fermentasi, ubi kayu, dan seperangkat bahan dan alat laboratorium untuk analisis proksimat, *in sacco* dan *in vitro*. Uji *in vitro* menggunakan metode Tilley dan Terry dengan memodifikasi pada bagian tutup tabung reaksi untuk penambahan bahan pakan ubi kayu. Data dianalisis dengan menggunakan analisis variansi *one way* (ANOVA) mengikuti rancangan *completely randomized design* dengan bantuan XLSTAT. Jika terdapat perbedaan, analisis dilanjutkan dengan menggunakan *Duncan's new multiple range test*. Hasil uji laju degradasi (% bahan kering) ubi kayu dan jerami padi fermentasi secara *in sacco* pada jam ke 0, 2, 4, 6, dan 12 yakni 5,23, 18,15, 46,45, 81,23, 94,27%, dan 3,57, 4,08, 5,26, 5,82, dan 10,65%. Hasil uji *in vitro* tanpa penambahan (TP) dengan penambahan ubi kayu (PUK) 10 dan 15% pada jam ke 2, 4 dan 6) yakni Kc.BK TP 35,35% dan PUK 10% yakni 41,52 – 46,01% ( $P<0,05$ ), TP 36,32% dan PUK 15% yakni 41,13 – 42,44% ( $P<0,01$ ). Kc.BO TP 44,74% dan PUK 10% 50,49 – 53,57% ( $P<0,05$ ), TP 38,07 dan PUK 15% 41,69 – 41,89% ( $P<0,05$ ). Konsentrasi  $\text{NH}_3$  (mg/100 mL) menunjukkan TP lebih tinggi dari pada PUK 10 dan 15% yakni TP 6,77 dan PUK 10% 4,85 – 5,66, ( $P<0,05$ ), TP 7,94 dan PUK 15% 5,68 – 5,92 ( $P<0,05$ ). Konsentrasi protein mikrobial (PM) TP dan PUK menunjukkan *non significant* dan konsentrasi total VFA (mM) yakni TP 29,87 dan PUK 10% 27,55 – 46,09 ( $P<0,05$ ), TP 25,09 dan PUK 15% 30,01 – 40,55 ( $P<0,05$ ). Hasil analisis karakteristik fermentasi rumen penambahan ubi kayu 10 dan 15% disimpulkan bahwa penambahan ubi kayu setelah inkubasi jam ke 6 adalah yang terbaik.

Kata kunci : *In sacco*, *In vitro*, Jerami padi fermentasi, Sapi bali, Ubi kayu.

ADDITION OF CASSAVA (*Manihot utilissima*) WITH THE AMOUNT AND FEEDING TIME IN DIFFERENT ON BASAL FEED BASED ON RICE STRAW FERMENTATION TO IMPROVE THE DIGESTIBILITY IN VITRO ON THE BALI CATTLE

**ABSTRACT**

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This study was carried out to investigate the in vitro digestibility of Bali cattle in cassava addition with different amounts of time on basal feed based on rice straw fermentation. The research method begins with preparation of equipments and materials include rumen fistula in Bali cattle, rice straw fermentation, cassava and a set of materials and laboratory equipment for proximate analysis, in sacco, and in vitro. The studies of in vitro using Tilley and Terry method by modifying in the lid of reaction tube for addition of cassava feed ingredients. Data were analyzed using analysis of variance completely randomized design (CRD) one-way ANOVA with help of XLSTAT. If there were differences, the analysis continued by using Duncan's new multiple range test. The result of the degradation rate (% dry matter) cassava and fermented rice straw in sacco on the hour to 0, 2, 4, 6, and 12 is 5.23, 18.15, 46.45, 81.23, 94, 27%, and 3.57, 4.08, 5.26, 5.82, and 10.65%. Results of in vitro test without addition and with addition of cassava 10 and 15% at hours to 2, 4 and 6: DM digestibility not addition 35.35% and the addition of 10% cassava is 41.52 to 46.01% ( $P < 0.05$ ). Not addition 36.32% and the addition of 15% cassava is from 41.13 to 42.44% ( $P < 0.01$ ). OM digestibility not addition 44.74% and the addition 10% of cassava is 50.49 to 53.57% ( $P < 0.05$ ). Not addition cassava 38.07 and the addition 15% of cassava from 41.69 to 41.89% ( $P < 0.05$ ).  $\text{NH}_3$  Concentration (mg / 100 mL) without the addition of higher than the addition of 10 and 15%. Not addition of 6.77 and addition of cassava 10% is 4.85 to 5.66, ( $P < 0.05$ ), not addition of cassava 7.94 and addition of cassava 15% is 5.68 to 5.92 ( $P < 0.05$ ), The concentration of microbial protein (PM) not show the addition and the addition of non significant. Concentrations of total VFA (mM). Not addition of cassava 10% 29.87 and addition is 27.55 to 46.09 ( $P < 0.05$ ). Not addition 15% of cassava 25.09, and the addition 15% is 30.01 to 40.55 ( $P < 0.05$ ). The results analysis of the rumen fermentation characteristics at adding 10 and 15% cassava concluded that the addition of cassava after incubation for 6 hours is the best.

Keywords: In sacco, In vitro, Rice straw fermentation, Bali cattle, Cassava