

ABSTRAK

PENGARUH SUPLEMENTASI RUMPUT LAUT PADA SAPI POTONG TERHADAP PRODUKSI GAS METANA DAN DINITROGEN OKSIDA KULTUR FESES

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Penelitian ini bertujuan untuk mengetahui pengaruh suplementasi rumput laut pada sapi potong terhadap produksi gas metana dan dinitrogen oksida kultur feses. Penelitian ini dilaksanakan pada Oktober--Desember 2023 di KPT Maju Sejahtera, Kecamatan Tanjung Sari, Kabupaten Lampung Selatan. Penelitian ini dilakukan menggunakan Rancangan Acak Kelompok (RAK) yang terdiri dari 3 perlakuan dan 6 ulangan, dengan menggunakan 18 ekor sapi potong lokal. Perlakuan yang diberikan yaitu P1; rumput pakchong + konsentrat (perbandingan 70%:30% BK pakan), P2; rumput pakchong + konsentrat (perbandingan 70% : 30% BK pakan) + rumput laut *Eucheuma cottonii* (4% BK pakan) dan P3; rumput pakchong + konsentrat (perbandingan 70% : 30% BK pakan) + rumput laut *Eucheuma cottonii* (4% BK pakan) + biochar (0,05% BK pakan). Variabel yang diamati yaitu Produksi Gas Metana dan Dinitrogen Oksida. Hasil penelitian menunjukkan puncak produksi gas metana (CH₄) terjadi pada hari ke 0 sampai ke 3 yaitu sebesar 2.936,90 g/ton feses/hari. Puncak produksi dinitrogen oksida terjadi pada hari ke 3 sampai ke 12 yaitu sebesar 43.430,59 g/ton feses/hari. Perlakuan P3 (rumput laut *Eucheuma cottonii* + biochar) cenderung menurunkan produksi gas metana dari 2.206,62 menjadi 0,64 (99,97%) g/ton feses/hari dan dinitrogen oksida dari 8.185,95 menjadi 725,50 (91,13%) g/ton feses/hari.

Kata kunci: Sapi potong, gas metana, gas dinitrogen oksida, rumput laut *eucheuma cottonii*, biochar

ABSTRACT

THE EFFECT OF SEAWEED SUPPLEMENTATION IN BEEF CATTLE ON THE PRODUCTION OF METHANE GAS AND NITROUS OXIDE IN FECAL CULTURES

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This study aims to determine the effect of seaweed supplementation in beef cattle on the production of methane gas and nitrous oxide in fecal cultures. This research was carried out in October--December 2023 at KPT Maju Sejahtera, Tanjung Sari District, South Lampung Regency. This study was conducted using a Group Random Design (RAK) consisting of 3 treatments and 6 replicates, using 18 local beef cattle. The treatment given was P1; pakchong grass + concentrate (ratio of 70%:30% of feed BK), P2; pakchong grass + concentrate (ratio 70%: 30% of feed BK) + *Eucheuma cottonii* seaweed (4% feed BK) and P3; pakchong grass + concentrate (ratio 70% : 30% feed BK) + *Eucheuma cottonii* seaweed (4% feed BK) + biochar (0.05% feed BK). The variables observed were Methane Gas Production and Nitrous Oxide. The results showed that the peak of methane gas (CH₄) production occurred on days 0 to 3, which was 2.936,90 g/ton of feces/day. The peak of nitrous oxide production occurred on days 3 to 12, which was 43.430,59 g/ton of feces/day. P3 treatment (*Eucheuma cottonii* seaweed + biochar) tended to reduce the production of methane gas from 2,206.62 to 0.64 (99.97%) g/ton of feces/day and nitrous oxide from 8,185.95 to 725.50 (91.13%) g/ton of feces/day.

Keywords: Beef cattle, methane gas, nitrous oxide gas, *eucheuma cottonii* seaweed, biochar