

PENGARUH PENAMBAHAN SELENIUM ORGANIK DAN ANORGANIK PADA RANSUM TERHADAP KECERNAAN NUTRIEN SECARA *IN VITRO*

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INTISARI

Penelitian ini bertujuan untuk mengetahui perbandingan penambahan selenium organik, penambahan selenium anorganik, dan tanpa penambahan selenium pada ransum terhadap parameter pencernaan nutrisi secara *in vitro*. Rancangan perlakuan terdiri dari tiga perlakuan dan empat replikasi : T0 = pakan basal berupa rumput gajah dan *bran pollard* tanpa penambahan selenium (kontrol), T1 = ransum basal dengan tambahan *sodium selenite* 0,3 mg/kg BK pakan (anorganik), dan T2 = ransum basal dengan tambahan selenium-yeast 0,3 mg/kg BK pakan (organik). Sumber mikrobial rumen berasal dari cairan rumen sapi bali berfistula yang sudah diadaptasi selama 7 hari. Penelitian mengacu pada metode uji *in vitro* pencernaan nutrisi (Tilley dan Terry, 1963) dengan masa inkubasi selama 48 jam. Parameter pencernaan yang diamati adalah pencernaan bahan kering, pencernaan bahan organik, pencernaan protein kasar, dan pencernaan serat kasar. Data hasil penelitian dianalisis menggunakan *analysis of variance* (ANOVA) dan diuji lanjut menggunakan *Duncan's new multiple range test* (DMRT) jika terdapat perbedaan yang nyata antar *mean*. Hasil analisis pencernaan bahan kering, bahan organik dan serat kasar menunjukkan perbedaan yang nyata ($P < 0,05$), sedangkan penambahan selenium tidak memberikan pengaruh nyata dan tidak signifikan ($P > 0,05$) terhadap pencernaan protein kasar. Penambahan selenium organik dapat meningkatkan pencernaan bahan kering sebesar 6,25% terhadap kontrol dan 7,99% terhadap selenium anorganik, meningkatkan pencernaan bahan organik sebesar 4,14% terhadap selenium anorganik, meningkatkan pencernaan serat kasar sebesar 2,41% terhadap kontrol, serta penambahan selenium anorganik menurunkan pencernaan serat sebesar 3,40% terhadap kontrol. Kesimpulan dari penelitian ini adalah selenium organik dapat meningkatkan pencernaan bahan kering dibandingkan kontrol dan selenium anorganik, pencernaan bahan organik dibandingkan selenium anorganik, dan pencernaan serat kasar dibandingkan selenium anorganik pada rumen, namun tidak memberi dampak pada pencernaan protein kasar.

Kata kunci: anorganik, *in vitro*, pencernaan nutrisi, organik, rumen, selenium

EFFECT OF ORGANIC AND INORGANIC SELENIUM ADDITION TO FEED RATIONS TO NUTRIENT DIGESTIBILITY WITH IN VITRO METHOD

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ABSTRACT

This study aims to determine the comparison of the addition of organic selenium, the addition of inorganic selenium, and without the addition of selenium in the ration on nutrient digestibility parameters in vitro. The treatment design consisted of three treatments and four replications: T0 = basal diet of elephant grass and bran pollard without the addition of selenium (control), T1 = basal diet with the addition of sodium selenite 0.3 mg/kg BK feed (inorganic), and T2 = basal diet with the addition of selenium-yeast 0.3 mg/kg BK feed (organic). The source of rumen microbes came from the rumen fluid of fistulous Balinese cows that had been adapted for 7 days. The study refers to the in vitro test method of nutrient digestibility (Tilley and Terry, 1963) with an incubation period of 48 hours. The digestibility parameters observed were dry matter digestibility, organic matter digestibility, crude protein digestibility, and crude fiber digestibility. The data were analyzed using analysis of variance (ANOVA) and further tested using Duncan's new multiple range test (DMRT) if there were significant differences between means. The results of the analysis of the digestibility of dry matter, organic matter and crude fiber showed significant differences ($P < 0.05$), while the addition of selenium did not give a real and insignificant effect ($P > 0.05$) on the digestibility of crude protein. The addition of organic selenium can increase dry matter digestibility by 6.25% against the control and 7.99% against inorganic selenium, increase organic matter digestibility by 4.14% against inorganic selenium, increase crude fiber digestibility by 2.41% against the control, and the addition of inorganic selenium reduces fiber digestibility by 3.40% against the control. The conclusion of this study is that organic selenium can increase dry matter digestibility compared to control and inorganic selenium, organic matter digestibility compared to inorganic selenium, and crude fiber digestibility compared to inorganic selenium in the rumen, but has no impact on crude protein digestibility.

Keywords: inorganic, in vitro, nutrient digestibility, organic, rumen, selenium