

PENGARUH PENAMBAHAN MOLASES, *Lactobacillus plantarum*, *Trichoderma viride*, DAN CAMPURANNYA TERHADAP KUALITAS DAN KECERNAAN IN VITRO SILASE TOTAL CAMPURAN HIJAUAN

INTISARI

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Penelitian ini bertujuan untuk mengetahui pengaruh penambahan molases, *Lactobacillus plantarum*, *Trichoderma viride*, dan campurannya terhadap kualitas dan kecernaan *in vitro* silase total campuran hijauan. Bahan yang digunakan dalam pembuatan silase adalah jerami padi, rumput raja, jerami kacang tanah, gamal, jerami jagung, molases, *L. plantarum*, dan *T. viride*. Penambahan molases sebanyak 4% (w/w), *L. plantarum* sebanyak 0,1% (v/w), dan *T. viride* sebanyak 0,1% (v/w). Semua bahan difermentasi selama 21 hari. Variabel yang diamati adalah kualitas fisik, kimia, komposisi kimia, dan KcBK/KcBO *in vitro* silase. Data yang diperoleh dianalisis variansi *Completely Randomized Designs* pola searah. Apabila terdapat perbedaan yang nyata karena perlakuan, dilanjutkan dengan uji rata-rata antar dua perlakuan dengan uji *Duncan's New Multiple Range Test*. Hasil penelitian menunjukkan bahwa penambahan bahan aditif berpengaruh tidak nyata ($P > 0,05$) terhadap kualitas fisik silase. Penambahan molases saja maupun campuran molases dengan aditif lainnya mampu menurunkan pH dan amonia, meningkatkan kandungan asam laktat, KcBK, dan KcBO. Kandungan amonia tertinggi pada perlakuan kontrol sebesar 1,73 % BK dan terendah pada silase perlakuan campuran molases, *L. plantarum*, dan *T. viride* sebesar 0,43 %BK. Penambahan bahan aditif berpengaruh tidak nyata ($P > 0,05$) terhadap kandungan BK dan BETN silase. Berdasarkan penelitian yang telah dilakukan dapat disimpulkan bahwa penambahan molases atau sumber karbohidrat mudah larut merupakan suatu keharusan untuk menghasilkan silase total campuran hijauan yang baik, ditunjukkan dengan pH sebesar 3,60, kandungan asam laktat sebesar 4,28% BK, kandungan amonia sebesar 0,43% BK, meningkatkan kandungan PK, menekan kehilangan BK dan BO, menurunkan kandungan SK, dan meningkatkan kecernaan BK, BO, SK secara *in vitro*.

Kata kunci: Silase, Molases, *Lactobacillus plantarum*, *Trichoderma viride*

THE EFFECT OF MOLASSES, *Lactobacillus plantarum*, *Trichoderma viride*, and ITS MIXTURES ADDITION ON QUALITY AND IN VITRO DIGESTIBILITY TOTAL MIXED FORAGE SILAGE

ABSTRACT

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The objective of this research was to determine the effect of molasses, *Lactobacillus plantarum*, *Trichoderma viride*, and its mixtures addition on quality and in vitro digestibility total mixed forage silage. The materials used in making of silage was rice straw, king grass, peanut straw, gliricidia, corn straw, molasses, *L. plantarum*, and *T. viride*. Molasses was added 4% (w/w), *L. plantarum* 0.1% (v/w), and *T. viride* 0.1% (v/w). All material was fermented for 21 days. Variables measured were physical and chemical quality, chemical composition, and in vitro digestibility of dry/organic matter. Data were analyzed using the analyses of variance *Completely Randomized Designs*. If there was significant due to the treatment, followed by a test of the average between two treatments with *Duncan's New Multiple Range Test*. The result showed that the addition of additive was not significant ($P>0.05$) on physical quality of the silage. The addition of molasses alone or mixed with other additives was able to lower pH and ammonia, increases lactic acid content, and in vitro digestibility of dry/organic matter. The highest ammonia content in the control treatment of 1.73% dry matter (DM) and lowest in a mixture of molasses, *L. plantarum*, and *T. viride* by 0.43% DM. Addition of the additives was not significant on the DM content and extract without nitrogen. Based on the results, it can be concluded that the addition of molasses or water soluble carbohydrate is a must to produce good quality total mixed forage silage that shown with pH 3.60, lactic acid content 4.28% DM, ammonia content 0.43% DM, increase crude protein, lower dry matter and organic matter losses, lower crude fiber content, and increase in vitro digestibility of dry/organic matter and crude fiber.

Keywords: Silage, Molasses, *Lactobacillus plantarum*, *Trichoderma viride*