

**KARASTERISTIK JUS DARI SILASE JAGUNG BERBEDA UMUR
SERTA KEMAMPUANNYA DALAM MENGHAMBAT *ESCHERICHIA.
COLI* DAN *SALMONELLA SP***

(Juice Characteristics of Corn Silage From Different Age and Its Capability of
Inhibiting *Escherichia Coli* dan *Salmonella sp.*)

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ABSTRAK

Penelitian bertujuan untuk mengkaji dan membandingkan karakteristik jus silase jagung umur 45 hari dengan 365 hari serta mengkaji kemampuannya dalam menghambat *Escherichia coli* dan *Salmonella sp.* yang diisolasi dari pedet sapi perah yang sedang diare akut. Jus dipabrikasi bersamaan dengan produksi silase jagung dan diisolasi melalui pengepresan berbantuan dongkrak hidrolik. Masing masing jus dievaluasi komposisi dan kandungan asam organik, pH dan jumlah bakteri asam laktat (BAL). Hasil penelitian menunjukkan bahwa jus silase mempunyai pH 2,98–4,47; BAL $0,3 \times 10^8$ – $2,2 \times 10^8$ CFU/ml dan asam laktat 0,07–0,4 g/l. Satu kilogram silase berkadar air 55% dapat menghasilkan 275 gr jus. Jus silase umur 45 hari dan 365 hari mempunyaikarakteristik sebagai berikut pH: $2,98 \pm 0,06$ vs $4,47 \pm 0,3$ 2; asam laktat: $0,4 \pm 0,05$ vs $0,07 \pm 0,06$ g/l; dan total BAL: $2,2 \times 10^8$ vs $0,3 \times 10^8$ CFU/ml. Kedua jus mampu menghambat pertumbuhan *Escherichia coli* dan *Salmonella sp.*, namun daya hambat jus dari silase umur 365 hari lebih rendah dari jus silase umur 45 hari. Dapat disimpulkan bahwa karakteristik dan daya hambat jus silase melawan *Escherichia coli* dan *Salmonella sp.* semakin menurun seiring dengan semakin tuanya umur silase.

Kata kunci: Jus silase, asam organik, daya hambat, *Escherichia coli*, *Salmonella sp.*

ABSTRACT

The objectives of this research were to study and compare the juice characteristics of corn silage age 45 days and 365 days and study its capability to inhibit *Escherichia coli* and *Salmonella sp.* isolated from acute diarrhea of dairy calf. Juice was manufactured in conjunction with the production of corn silage and the juice was isolated by pressing silage using hydraulic pump. Each juice was evaluated for its composition and organic acid content, pH and the concentration of lactic acid bacteria (LAB). The results showed that the silage juice has a pH of 2,98–4,47; BAL $0,3 \times 10^8$ – $2,2 \times 10^8$ CFU/ml, and lactic acid 0,07–0,4 g/l. One kilogram of silage with 55% water resulted 275 grams of juice. Juice from silage age 45 days and 365 days had the following characteristics: pH was $2,98 \pm 0:06$ $4:47 \pm 0,3$ vs. 2 ; lactic acid concentration was $0,4 \pm 0:05$ vs. $0:07 \pm 0,06$ g/l, and total BAL was $2,2 \times 10^8$ vs. $0,3 \times 10^8$ CFU/ml. All juices were capable of inhibiting the growth of *Escherichia coli* and *Salmonella sp.*, but its inhibition was lower for the juice from silage age 365 days compared with that of 45 days. It is concluded that the quality of juice was decreased as increasing the age of silage with special reference on decreasing inhibiton of *Escherichia coli* and *Salmonella sp.*

Keywords: Silage juice, organic acids, inhibition, *Escherichia coli*, *Salmonella sp.*