

**PENGARUH *DEPULPING* PADA PENERINGAN BIJI KAKAO
(*Theobroma cacao* Linn) YANG DIFERMENTASI DENGAN
PENAMBAHAN INOKULUM *Lactobacillus plantarum* HL-15 TERHADAP
CEMARAN JAMUR**

INTISARI

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Kakao merupakan komoditi perkebunan dengan peranan cukup penting dalam perekonomian Indonesia. Pemasaran biji kakao Indonesia di pasar global memiliki permasalahan salah satunya karena umumnya bermutu rendah. Kerusakan biji kakao akibat keberadaan jamur kontaminan masih menjadi kendala utama dalam upaya meningkatkan mutu kakao karena mampu berkembang serta menghasilkan mikotoksin yang berbahaya untuk kesehatan.

Dari beberapa penelitian sebelumnya, penambahan inokulum *Lactobacillus plantarum* HL-15 mampu menghambat pertumbuhan jamur pada biji kakao selama proses fermentasi. Setelah fermentasi dilakukan proses pengerinan hingga diperoleh biji kakao kering. Proses fermentasi dan pengerinan ini dapat dioptimalkan dengan inovasi teknologi, yaitu dengan *depulping*.

Tujuan dari penelitian ini adalah untuk mengetahui pengaruh proses *depulping* sebelum proses fermentasi dan penambahan bakteri asam laktat *Lactobacillus plantarum* HL-15 pada proses fermentasi terhadap pertumbuhan jamur selama pengerinan biji kakao.

Bahan yang digunakan dalam penelitian ini adalah: biji kakao jenis *Lindak* dari Gunungkidul, Yogyakarta yang difermentasi dengan maupun tanpa penambahan starter *Lactobacillus plantarum* HL-15 yang diperoleh dari FNCC (Food and Nutrition Culture Collection) UGM. Pengerinan dilakukan terhadap biji kakao yang difermentasi dengan tiga variasi perlakuan yaitu : (a) Pengerinan biji kakao terfermentasi dengan perlakuan *depulping* tanpa penambahan starter; (b) Pengerinan biji kakao terfermentasi dengan perlakuan *depulping* dan penambahan starter; (c) Pengerinan biji kakao terfermentasi tanpa perlakuan *depulping* dan tanpa penambahan starter.

Selama 7 hari pengerinan biji kakao dilakukan sampling setiap hari dan analisis total populasi yeast, bakteri asam laktat (BAL), bakteri asam asetat (BAA), dan total jamur. Hasil penelitian menunjukkan bahwa proses *depulping* dan penambahan starter *Lactobacillus plantarum* HL-15 pada proses fermentasi mampu menghambat pertumbuhan jamur selama proses pengerinan lebih baik daripada tanpa penambahan starter.

Kata kunci: pengerinan biji kakao, *depulping*, mikotoksin, aktivitas anti-jamur, *Lactobacillus plantarum* HL-15

**THE EFFECT OF *DEPULPING* ON DRYING PROCESS OF
FERMENTED COCOA BEAN (*Theobroma cacao* Linn) WITH ADDITION
OF INOCULUM *Lactobacillus plantarum* HL-15 ON FUNGI
CONTAMINATION**

ABSTRACT

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Cacao is one of agricultural commodities that has important role for Indonesian economy. Marketing of Indonesian cocoa beans in global market has problem, one of the problem is low quality beans. Damage in cocoa bean caused by presence of contaminant fungi still become major problem in effort to improve cocoa beans quality due to can develop and reduce cocoa beans quality as well as produce mycotoxin that are harmful for health.

In the previous study, addition of *Lactobacillus plantarum* HL-15 inoculum can inhibit fungi growth in cocoa beans during fermentation process. Fermentation process and drying process can be optimized with new technological innovation, that is depulping.

Purpose of this study is to determine effect of depulping process before fermentation process and addition of lactic acid bacteria *Lactobacillus plantarum* HL-15 during fermentation process on fungi growth during drying process of cocoa beans.

The materials used in this study were: Lindak cocoa beans from Gunungkidul, Yogyakarta that fermented with the addition or without the addition of *Lactobacillus plantarum* HL-15 starter from FNCC (Food and Nutrition Culture Collection) UGM. Drying was carried out to fermented cocoa beans with 3 variations of treatment, namely: (a) Drying of fermented beans with depulping treatment without the addition of a starter; (b) Drying of fermented beans by depulping treatment and addition of starter; (c) Drying of fermented beans without depulping treatment without the addition of a starter.

During 7 days of drying on cocoa beans, sampling and total yeast population, lactic acid bacteria (LAB), acetic acid bacteria, and total fungal analysis were carried out every day. The results of this study were the application of the depulping process and the addition of *Lactobacillus plantarum* HL-15 inoculum before the drying process was able to inhibit the growth of fungi during the drying process better than without the addition of starter.

Keywords: cocoa bean drying, depulping, mycotoxins, anti-fungal activity, *Lactobacillus plantarum* HL-15.