

CHEMOREACTION DRYING AND ITS EFFECT ON BLACK PEPPER QUALITY

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ABSTRACT

By using quicklime (Calcium oxide, CaO) as active reactant in chemoreaction drying, drying process of black pepper can be done at low temperature to minimize the loss of its volatile compounds and to maintain its quality. The objectives of this research were to study the drying capacity in chemoreaction drying of black pepper; and to analyze the effect of drying process to the volatile oil content of black pepper. The drying processes were conducted with 5 different weight ratios of CaO to fresh pepper i.e. 0.5, 1, 2, 5, and 20. The temperatures were relatively constant [approximately 29°C]; but the higher the ratio of CaO to fresh pepper, the lower the RH of the drying process. Use of CaO: fresh pepper in the ratios of 2, 5 and 20 resulted in dried pepper with water content less than 12% [wet basis) in 4 -5 days. This drying time was shorter than that obtained by sun drying that needs 8 days. Chemoreaction drying had no effect on the volatile oil content in black pepper produced compared to the fresh pepper. This drying processes resulted black pepper with volatile oil content between 2.44 -2.70% [dry basis). The color of the oil was clear greenish yellow with good flavor quality.

Keywords: black pepper, drying, quicklime, volatile oil

INTRODUCTION

Black pepper has been known as the largest and most important spice commodity in Indonesia. Black pepper processing is done simply by drying the fresh fruit pepper to targeted moisture content.