

# Development of Safe Ripening Techniques of Banana for Ensuring Food Safety



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The present study was intended to assess the adulteration in banana ripening practiced in Bogura district and development of safe ripening techniques for ensuring food safety.

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## Abstract

The total world production of bananas is around 145 million tones whereas India produced largest bananas around 27 million tones and Bangladesh produced almost 8 million tones. The main problem is faced by farmers during its ripening stage. Ethylene one of the phyto-hormone increases the rate of ripening naturally in mature banana to make the nutrients available to human when consumed. But the farmers and unscrupulous traders are using different artificial ripening agent's like- Acetelene ( $C_2H_2$ ), Ethephon ( $C_2H_6ClO_3P$ ), Calcium Carbide ( $CaC_2$ ), Calcium Oxide (CAO) etc. to ripen immature banana quickly for quick profit. These artificial ripening agents are hazardous to health and reduce the medicinal and nutritional properties of banana. Objective of the present study was to assess the adulteration in banana ripening (*M. oranta* local name Sagor kola and *Musa sapientum* local name Anupom kola) in Bogura district and development of natural ripening agents in banana ripening. For this purpose, we have collected data from 100 banana growers, vendors and consumers. The result found that most of the consumers and vendors knew about chemical used in banana ripening although they know it is unsafe for health. For the development of alternative ripening agents we have selected some natural agent like Venna leaf (*Ricinus communis* L), Ripened banana, Bilimbi fruit (*Averrhoa bilimbi* L) and examined their performance in banana ripening. The result found that Bilimbi fruit, Venna leaf and Apple are more effective and appropriate in Sagor and Anupom banana ripening, though artificial ripening agent like  $CaC_2$  and  $CaO$  gave same result as like Bilimbi fruit, Venna leaf and Apple fruit but these agents have lower shelf life than above natural ripening agents. By applying  $CaC_2$  and  $CaO$  as a ripening agent damage stated on day 4 but in case of Bilimbi fruit, Venna leaf and Apple fruit the banana samples stayed good for one or two days more than others. This can also be an alternative source of ripening which is safe, non-hazardous, chemical free and cost effective.

**Keywords:** Banana, adulteration, ripening agents, natural ripening agents.