



FOOD

FSSAI Issues Notification on Monitoring Artificial Ripening of Fresh Fruits

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In a recent move to ensure food safety and quality, the Food Safety and Standards Authority of India (FSSAI) has issued a notification dated 16 May 2025, addressing the widespread issue of unauthorized artificial ripening of fruits. The notification, numbered DAUIOYINYOSTAC RCD-02005/10/2024-Regulatory-FSSAI-Part(2)[E-13796], highlights the use of prohibited chemical agents like Calcium Carbide and Acetylene gas, which pose serious health risks to consumers. This action highlights the collective responsibility of all stakeholders across the food supply chain, including regulators, food business operators, and consumers, in maintaining the integrity of food products available in the country.

The notification specifically targets the artificial ripening of fruits, particularly mangoes, bananas, and papayas, which are widely consumed and commonly subjected to such practices. In an attempt to accelerate the ripening process and meet growing consumer demand, some Food Business Operators (FBOs) have resorted to using unauthorized or prohibited chemical agents. Calcium Carbide, commonly referred to as “masala,” is still being used by some FBOs due to its low cost and ease of maintenance. However, its use as a ripening agent is strictly prohibited under Regulation 23.5 of the Food Safety and Standards (Prohibition and Restrictions on Sales) Regulations, 2011. The use of Calcium Carbide poses serious health hazards, including mouth ulcers, gastric irritation, and even cancer due to its carcinogenic properties.

Another concern highlighted in the notification is the use of ethephon solution for artificial ripening. While ethephon can be used to generate ethylene gas, FSSAI's “Guidance Note on Artificial Ripening of Fruits Ethylene gas – A Safe Fruit Ripener” clearly states that it may only be used in accordance with the prescribed Standard Operating Procedure (SOP). Direct contact between ethylene (in powder or liquid form) and fruits or vegetables is strictly prohibited. The notification also notes the prevalence of other malpractices, such as colouring or coating fruits with synthetic colours or non-permitted wax.

To combat these issues, the notification requests all Commissioners of Food Safety of States/UTs and Regional Directors of FSSAI to intensify inspections and maintain strict vigilance over fruit markets and storage facilities within their jurisdictions. Special enforcement drives may be undertaken to curb the illegal use of Calcium Carbide or other non-permitted ripening agents, wax, and synthetic colours. These drives should cover godowns where seasonal fruits are stored, particularly those where substances like “masala” are suspected to be used for ripening. The presence of Calcium Carbide on the premises or stored alongside crates of fruits may serve as circumstantial evidence against the FBO, indicating involvement in the artificial ripening of fruits using prohibited substances. This may serve as grounds for initiating prosecution under Section 59 to be read with Section 3(1)(zz)(i) or Section 3(1)(zz)(vi) of the FSS Act, or any other applicable provision, for the sale of unsafe food products.

In addition to inspections, Enforcement Officials may use strip paper tests to detect the presence of acetylene in godowns or ripening chambers. The presence of acetylene can be detected by keeping filter paper strips dipped in a reagent solution. A change in the colour of the filter paper strip to red-brown or brown-violet indicates the presence of acetylene gas. This qualitative test can be performed at the godown level, as no residue is left on or in the fruit, making it impossible to carry out the test directly on the fruit.

The notification, effective immediately, is a significant step towards ensuring food safety and quality in India. By addressing the use of unauthorized ripening agents and other malpractices, FSSAI aims to protect consumers from the potential health hazards associated with artificially ripened fruits. The collective effort of regulators, food business operators, and consumers is crucial in upholding the integrity of food products and maintaining a safe and healthy food supply chain.

Conclusion

The FSSAI's recent notification is a clear indication of the authority's commitment to safeguarding public health by regulating the food industry. By prohibiting the use of harmful ripening agents and ensuring strict compliance, the notification aims to eliminate unsafe practices and promote transparency in the food supply chain. This move is expected to have a positive impact on consumer health and reinforce the importance of food safety regulations in India.

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