

ICAR-CIPHET Backs Indigenous Carbide Detection kit to Boost Fruit Safety

Ludhiana, October 2025

In a major advancement for consumer safety and fruit quality monitoring, the ICAR–Central Institute of Post-Harvest Engineering and Technology (ICAR-CIPHET), Ludhiana, has scientifically tested and validated a Calcium Carbide Detection Test Kit developed by *M/s Beejapuri Fresh Products Private Limited, Gurgaon operating with trade name of ‘Country Delight’*. Following successful validation, the kit has now been officially launched for public use.

Artificial fruit ripening using calcium carbide, a harmful chemical, continues to be a serious health concern in India’s fresh-produce sector. Addressing this issue, ICAR-CIPHET conducted comprehensive laboratory evaluations to ensure the kit’s sensitivity, accuracy, and reliability. The results demonstrated that the test kit can detect as low as 2% calcium carbide relative to the fruit’s weight, with 99.9% specificity, as claimed by the manufacturer.

The compact and easy-to-use kit works by generating a distinct colour change from white to dark pink upon contact with the by-product of calcium carbide, offering instant, visual confirmation of adulteration without the need for any special reagents, instruments or trained manpower. This makes it a practical tool for food-safety inspectors, market authorities, traders, and consumers alike.

Dr. Nachiket Kotwaliwale, Director, ICAR-CIPHET, emphasized that the institute’s scientific validation provides credibility to this indigenous innovation and reinforces ICAR-CIPHET’s leadership in post-harvest technology. “Our evaluation ensures that the kit meets stringent quality and reliability standards. Such collaborative efforts strengthen India’s capacity to safeguard consumers from unsafe and chemically ripened fruits,” he said. The team that developed the test protocols and conducted data analysis comprised of Dr. Manju Bala, Principal Scientist and Dr. Surya Tushir, Sr. Scientist of ICAR-CIPHET, Ludhiana

The validation of this carbide detection kit reflects ICAR-CIPHET’s ongoing commitment to develop and endorse technologies that enhance food safety, promote clean and fair-trade

practices, and protect public health. By enabling rapid on-site detection, this innovation supports national efforts toward ensuring safe, quality fruits across India's markets and supply chains.

