

# ANTIBRÄUN™ FV

## IN FRESH CUT & FROZEN FRUITS & VEGETABLES

Handary  
SHELF LIFE



### KEY BENEFITS

- Delay of browning and decay;
- Maintain moisture and Texture;
- Prolong Freshness and quality;
- Shelf-Life extension
- Natural and Friendly Labelling;

### NATURAL SOLUTION FOR BROWNING PREVENTION AND FOOD PRESERVATION

The increasing consumer demand for fresher, more convenient, and healthier fruit and vegetable products has driven manufacturers to explore preservation techniques such as refrigeration, modified atmospheres, and bioconservation. However, the use of traditional chemical preservatives often falls short of meeting consumers' preference for natural options. Ensuring microbiological quality is of utmost importance, particularly due to the potential risk of contamination during processing, especially in acidic conditions.

In response to these challenges, innovative treatments have been developed. Erythorbic Acid, a natural antioxidant derived from sucrose, is widely embraced in the food industry for its ability to preserve color and flavor without any adverse side effects. The synergistic combination of Erythorbic Acid with Citric Acid further elevates the efficacy of preservation.

At Handary, our commitment lies in preserving the quality of minimally processed fruits and vegetables. Antibräun™ FV, a natural anti-browning agent containing Erythorbic Acid and Lemon Juice Powder, not only effectively inhibits browning but also maintains freshness, all while adhering to consumer friendly labeling standards.

### OUR BRANDS

ANTIBRÄUN™ FV  
Antibrowning Agent



	Antibräun™ FV
Code	3101
Labelling	E316 Lemon powder
Organoleptic impact	No Impact
Source	Non-GMO
Thermal Stability	Up to 70°C
Applicable pH	2-9
Recommended dosage	0.1-0.5 % Solution
Packing Size	0.5KG, 10KG, 20KG
Appearance	White pale powder

## CASE STUDIES

In our laboratory, we conducted a series of comprehensive tests to gauge the effectiveness of Antibräun™ FV. The initial experiment focused on evaluating its performance in preserving frozen eggplant applications. Furthermore, we explored the potential of Antibräun™ FV to mitigate browning in red apples. This assessment included both independent use and its synergistic effects when combined with other agents as part of our research project.

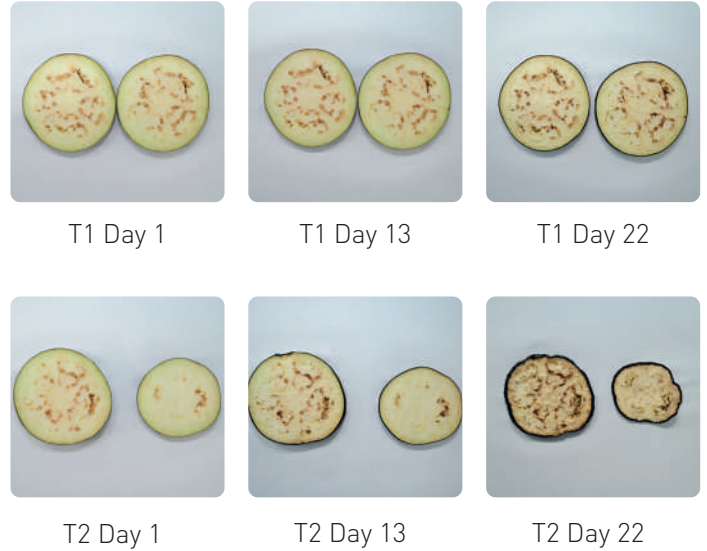
### 1<sup>ST</sup> EXPERIMENT: ANTIBRÄUN™ FV IN FROZEN EGGPLANTS

In our first experiment, we used 2 eggplants. We began by removing their ends and washing the peel to remove preservatives. We then sliced the eggplants into even rounds, ensuring equal size and thickness.

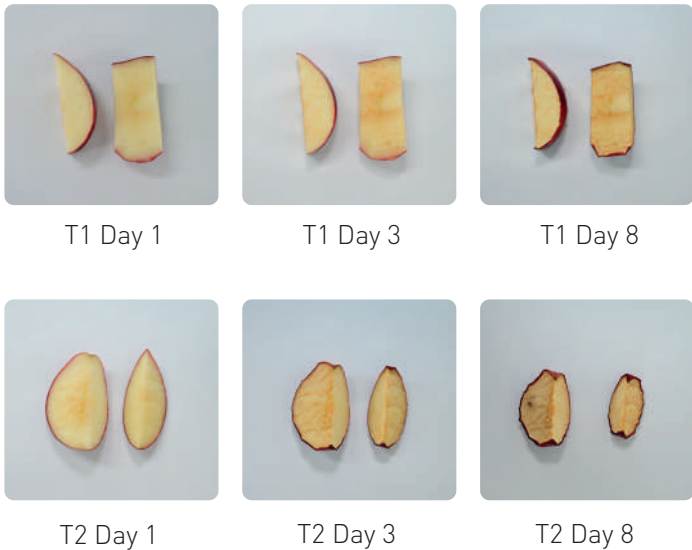
Each treatment was applied to 5 slices, which were immersed for 3 minutes and air-dried for 5 minutes. The treated eggplants were stored in freezer-friendly plastic bags at -20°C. The treatments included:

T1: Antibräun™ FV (3% Erythorbic Acid and 3% Lemon Juice Powder) in 500 ml of distilled water.

T2: A control group treated with 500 ml of distilled water alone.



### 2<sup>ND</sup> EXPERIMENT: ANTIBRÄUN™ FV IN FRESH-CUT RED APPLES



In this experiment, 600 grams of apples (three apples) were used. After washing to remove any peel preservatives, each apple was sliced into 8 equal pieces, resulting in 200 grams per treatment.

The slices were then immersed in their respective treatments for 1 minute and dried for 5-10 minutes. Storage was in plastic containers in the fridge at 1°C for 8 days. The treatments included:

T1: Antibräun™ FV (3% Erythorbic Acid and 3% Lemon Juice Powder) in 500 ml of distilled water.

T2: A control group treated with 500 ml of distilled water alone

## CONCLUSION

In our tests, Antibräun™ FV, a product by Handary, proved to be a potent antioxidant, preventing oxidation and preserving color stability in frozen eggplants for an impressive 22 days.

In the case of red apples, Antibräun™ FV also excelled, keeping freshness intact for at least 3 days. This highlights Handary's commitment to extending the shelf life of fresh-cut fruits and meeting consumer demands for prolonged freshness.





## APPLICATION GUIDELINE

The following guidelines will help you achieve the optimal solution using Handary Antibräun™ FV to naturally and effectively extend the microbial stability and shelf life of fresh-cut and frozen fruits and vegetables.

### DIRECT ADDITION INTO FORMULATION

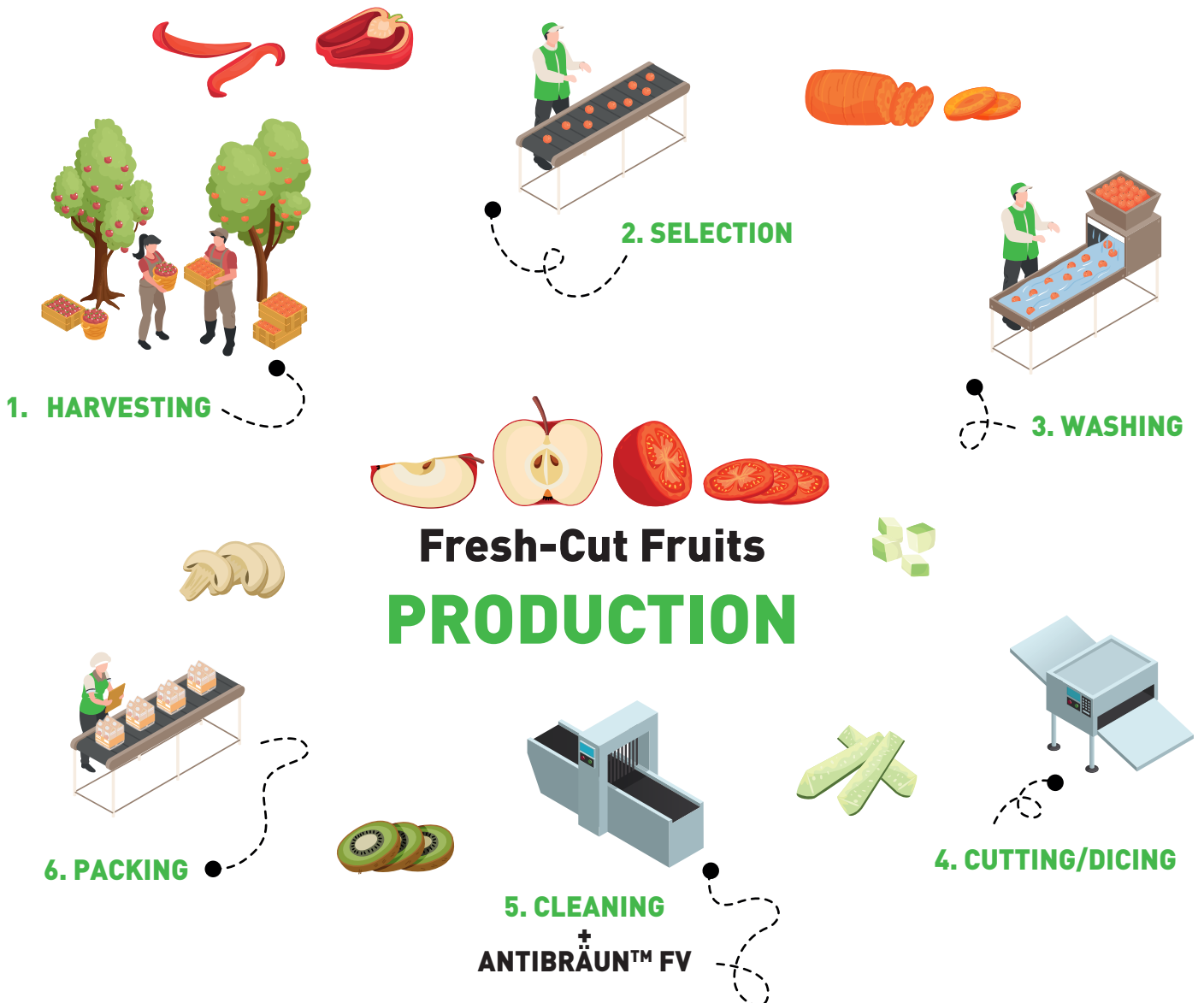
Follow the suggested dosages to apply directly Antibräun™ FV into fresh cut and frozen fruits and vegetables.

Ingredients	Application		Benefits	Dosage
Antibräun™ FV	Fruits & Vegetables	Fresh-Cut & Frozen	Prevent Oxidation and improve the color stability	0.1-0.5% solution

To create an Antibräun™ FV solution, dissolve it in distilled water, targeting a concentration ranging from 0.1% to 0.5%. Next, immerse freshly cut fruits and vegetables directly into the solution or integrate it into canned fruits and vegetables. Finally, follow with the necessary steps for drying, packaging, or canning as required.

### FRESH-CUT AND FROZEN FRUITS & VEGETABLES MANUFACTURING PROCESS

Follow the representative production process flow chart of sparkling lemonade and the recommended stage of product incorporation to get the best efficiency for Planteria® BF and Fixolor™ AT application.



These steps are just a general guide for the production of fresh-cut and frozen fruits & vegetables. The exact process may vary depending on the specific recipe and production equipment used.