

# FIXOLOR® PK IN BEEF PATTIES

Handary  
SHELF LIFE



## KEY BENEFITS

- Pink color stabilization;
- Inhibition of Total Plate Count Growth;
- Maintain freshness and authentic appeal;
- Cost effective;
- Shelf-life extension;
- Clean label.

## NATURAL ANTIMICROBIAL AND COLOR STABILIZATION IN BEEF BURGER PATTIES

Minced beef is a commonly used ingredient globally, especially for making burger patties. However, meat can suffer from various defects such as off-smells and flavors, discoloration, and gas production. Bacteria responsible for spoiling refrigerated meat products, leading to defects like sour flavors, discoloration, gas production, slime formation and pH decrease, include *B. Thermosphact*, *Carnobacterium*, *Lactobacillus*, *Leuconostoc* and *Weissella*.

At Handary, we have created Fixolor® PK, a natural product that can extend the shelf life of beef patties while preserving their pink color. Fixolor® PK is made from pre-converted nitrite derived from nitrates in Swiss chard. It is primarily used to enhance the red-pinkish color and flavor in meat during the curing process. With this in mind, we wanted to test its effectiveness in beef burgers, proving its ability to effectively inhibit the growth of spoilage bacteria during storage and maintain the pink color without negatively impacting the quality, freshness or sensory characteristics of the product.

Finally, Fixolor® PK has been widely accepted as a clean label alternative to synthetic preservatives, thus meeting consumer demands for friendly labelling.

	Fixolor® PK
Code	0902
Registration Number	Clean Label
Organoleptic impact	No Impact
Source	Non-GMO, Renewable
Thermal Stability	Up to 121°C
Applicable pH	5-7
Recommended dosage	0.07-0.09 g/kg
Packing Size	500gr, 10 kg
Appearance	Tan Brown Powder
Labelling	Cultured Chard
Solubility	Water Miscible

## OUR BRANDS

FIXOLOR® PK  
Cultured Chard



## CASE STUDIES

Food spoilage has been a problem for manufacturers, sellers, and consumers due to health-related concerns. Beef patty shelf-life and color is primarily limited by spoilage bacteria, such as *Lactobacillus spp.*, causing unpleasant acidic tastes and odours, gas, and signs of visual damage through off-colour.

To assess the effectiveness of Fixolor® PK treatment in keeping the pink color and inhibiting the growth of Total Plate Count in beef patties we have added 0.7 % (w/w) of Fixolor® PK to the formulation and we have compared it with control, without any treatment

## FIXOLOR® PK: BEEF-BASED BURGER PATTY SHELF-LIFE EXTENSION

The targetted pink color in beef burger was achieved during the curing process and was maintained for 31 days. Additionally, the microbial analysis revealed minimal to no presence of aerobic bacteria in the packaging for 31 days. Fixolor® PK product samples produced exceptional results when compared to untreated control samples.

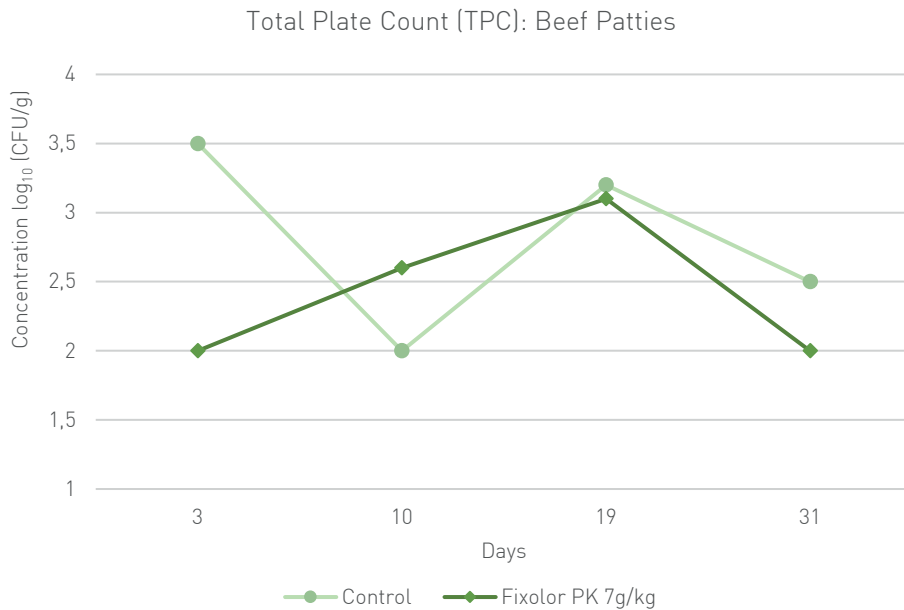


Fig 1. The color changes of the control sample following its storage at 5 °C for 31 days are illustrated in Figure 1. A considerable reduction in the intensity of the pink color can be observed.



Fig. 2 displays the color of the patty when treated with Fixolor PK at a dose of 0.7%. The prevalence of pink color was observed and the microbial analysis show a minimal detection of aerobic bacteria.

## CONCLUSION

In general, these food products have a short shelf life and are unable to maintain the pink color without treatment at refrigerated temperatures. However, with the use of Fixolor® PK, these products can last up to 31 days in perfect conditions.

The purpose of this study was to demonstrate that Handary's Fixolor® PK is an effective and natural way to maintain the pink color of beef patties and improve their shelf life and resistance to bacteria without using artificial ingredients.



## APPLICATION GUIDELINE

The following guideline will assist you in chasing the optimum solution by using Handary Fixolor® PK to effectively and naturally keep the pink color and extend the microbial stability and the shelf-life of beef patties.

## DIRECT ADDITION INTO FORMULATION

Follow the suggested dosages to apply Fixolor® PK directly into fruit smoothies.

Ingredients	Application		Benefits	Dosage
Fixolor® PK	Meat	Beef Burger Patty	Growth control and stability of Total Plate Count (TPC) & pink color retention	0.7 % (w/w)

The recommended doses of Fixolor® PK are added along with the other dry ingredients at the beginning of the mixture of the patty formulation. Dosages ranging between 0.07-0.09 g of Fixolor® PK are added for every kilo of the final product.

## BEEF PATTY BURGER MANUFACTURING PROCESS

Follow the representative production process flow chart of Beef Burger Patty and the recommended stage of product incorporation to get the best efficiency for Fixolor® PK application.

