



MEATING THE CHALLENGE



OXIDATION STARTS AS SOON AS THE MEAT LEAVES THE PROCESSING FACILITY

OXIDATION IMPACTS MEAT QUALITY AND CONSUMER ACCEPTABILITY

COLOR CHANGES:

Myoglobin oxidation
Influences initial purchasing decisions

FLAVOR CHANGES:

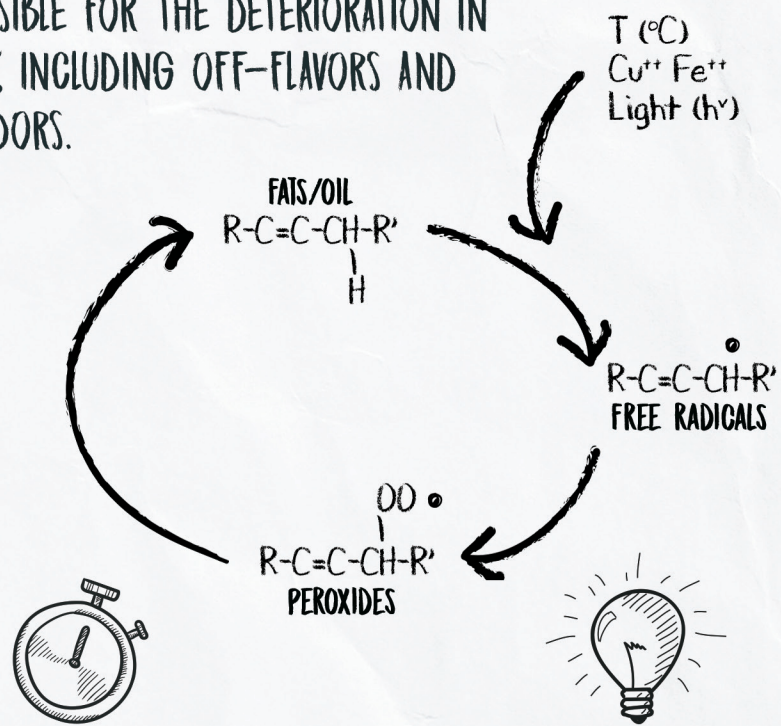
Lipid oxidation
Influences repeat purchasing decisions



"VISUAL APPEARANCE IS A CONSUMER'S MOST IMPORTANT CRITERIA WHEN MAKING BUYING DECISIONS. THEY RELY ON COLOR TO REASSURE THEIR CHOICES ARE FRESH AND FLAVORFUL."

LIPID OXIDATION

RESPONSIBLE FOR THE DETERIORATION IN QUALITY, INCLUDING OFF-FLAVORS AND OFF-ODORS.



AUTO OXIDATION

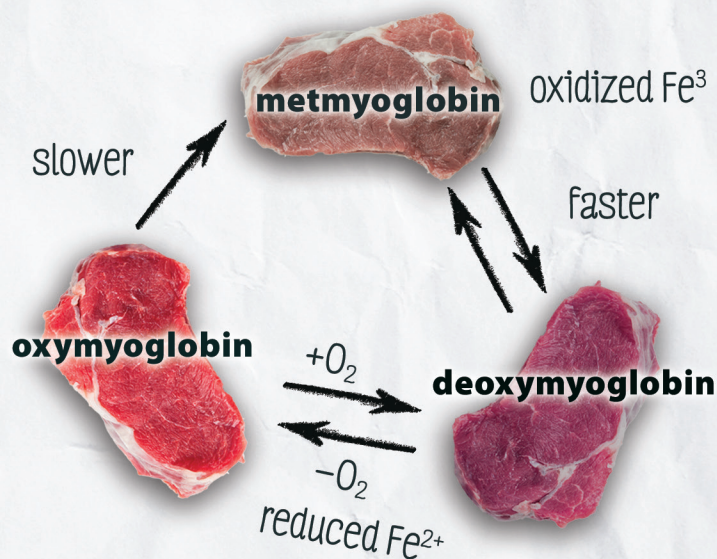
Triplet oxygen oxidation - Auto oxidation, happens regardless of light exposure

LIGHT OXIDATION

Singlet oxygen oxidation - Mostly happens when singlet oxygen generated by photosensitizer under light exposure.

THE CHEMISTRY OF MEAT COLOR

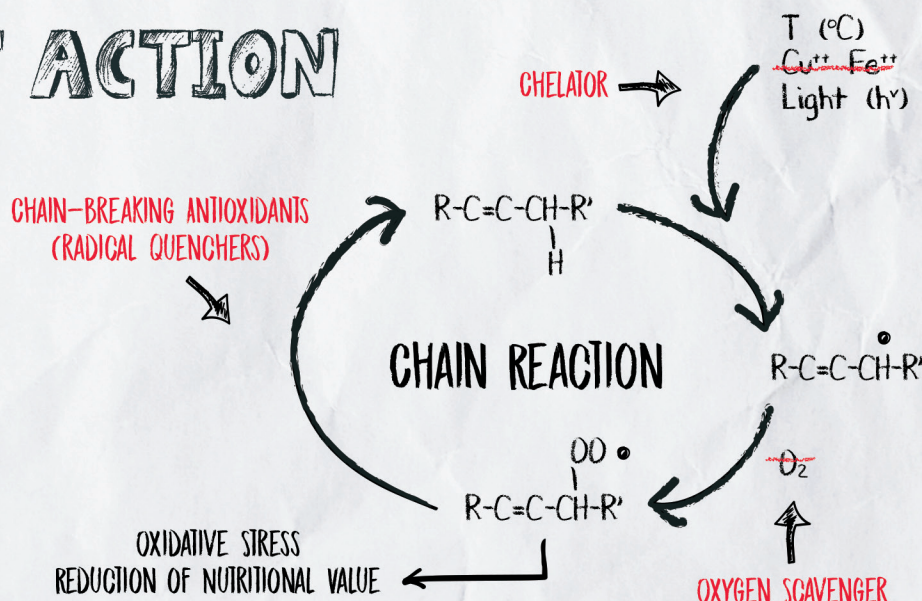
- Color changes due to oxygen presence/absence and oxidation
- Microbial growth also impacts meat color and appearance



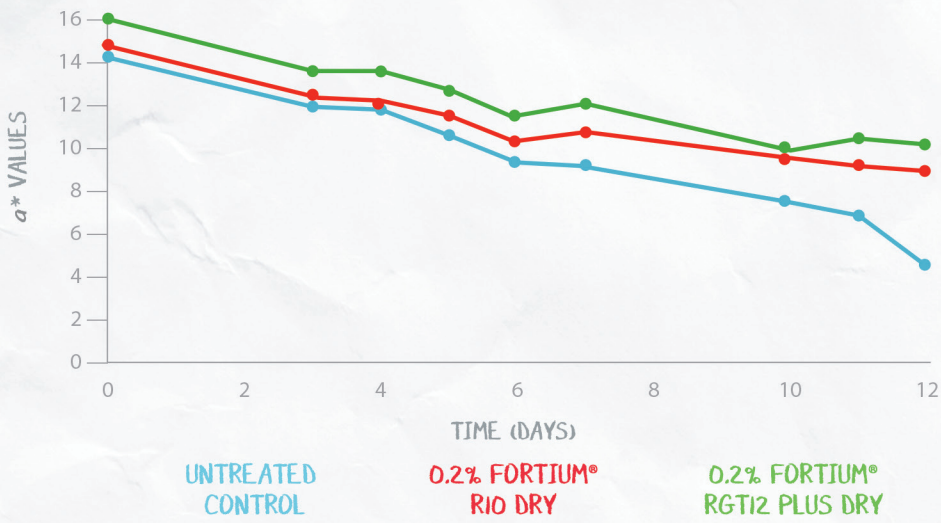
ANTIOXIDANTS MODE OF ACTION

WHAT ARE ANTIOXIDANTS?

- MOLECULES THAT SIGNIFICANTLY DELAY OR PREVENT LIPID OXIDATION
- DELAY MYOGLOBIN OXIDATION
- LENGTHEN SHELF-LIFE
- HELP TO MAINTAIN CONSUMER ACCEPTANCE



INSTRUMENTAL COLOR (REDNESS) OF RAW GROUND PORK DURING REFRIGERATED STORAGE¹



OXIDATION CONTROL SOLUTIONS



ROSEMARY EXTRACT
well known
label friendly
oil & water soluble



ACEROLA EXTRACT
cure accelerator
label friendly
protects color

Using a blend of plant extracts can offer enhanced protection by capitalizing on the unique benefits of each extract in order to maximize flavor and color retention



ROSEMARY EXTRACT



GREEN TEA EXTRACT



ROSEMARY EXTRACT



GREEN TEA EXTRACT



ACEROLA EXTRACT

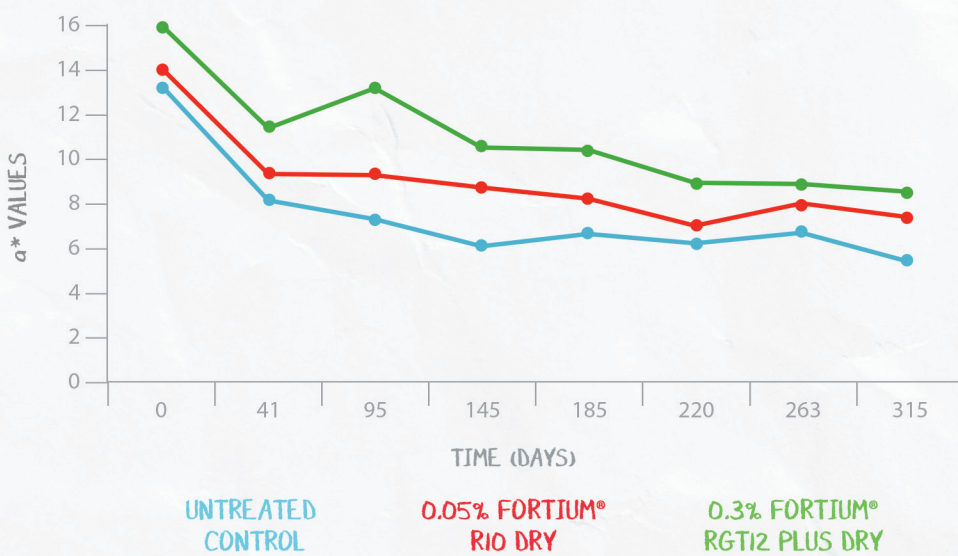


ROSEMARY EXTRACT

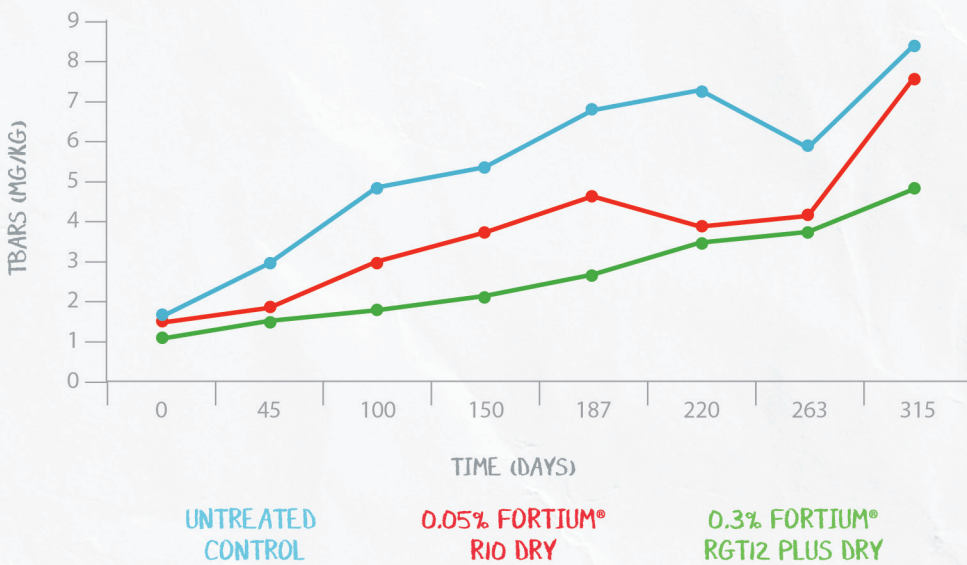


ACEROLA EXTRACT

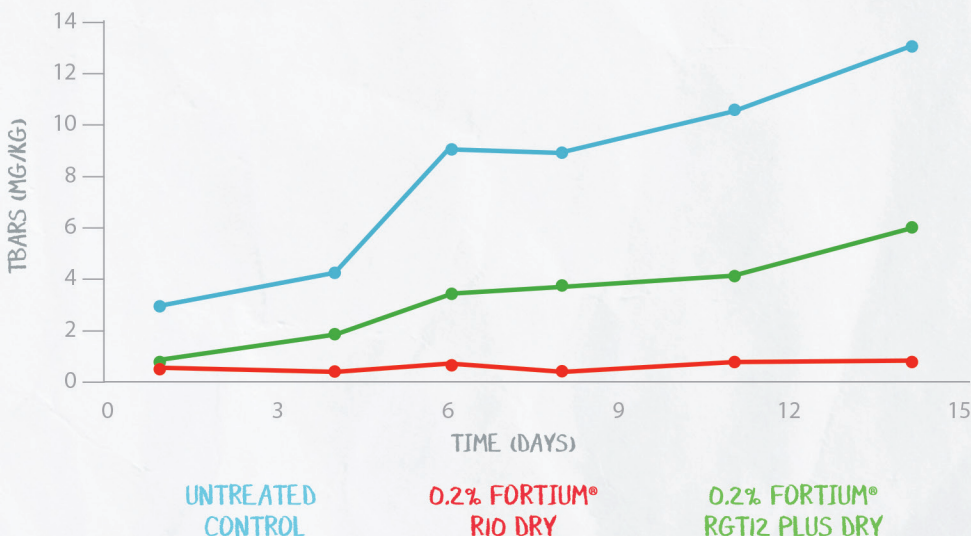
INSTRUMENTAL COLOR (REDNESS) OF GROUND BEEF DURING FROZEN STORAGE²



TBARS OF RAW GROUND BEEF PATTIES²



TBARS OF COOKED CHICKEN PATTIES³



THE KEMIN DIFFERENCE

Kemin is a one-stop shop for your meat and poultry solutions—a company with the ability to offer both shelf-life extension and food safety options to meat and poultry manufacturers.

Kemin understands proteins—and how different processing techniques and packaging affect them—when determining which shelf-life ingredients to use. We offer solutions that are tailored to individual customer needs, from simple solutions to more complex blends, with a highly experienced technical team who understands the synergies of these ingredients. We can help you solve your color, flavor and microbial challenges right here, to get your product to market quicker and keep it fresher, longer.

talk to a technical expert today!

kemin.com/meetingthechallenge

KEMIN

¹FORTIUM® brand RGT 12 Plus Dry Extract Provides Color and Flavor Protection Superior to Green Tea Extract in Ground Pork

²Comparative Study of the Impact of Rosemary Extract on the Quality Attributes of Raw Frozen Ground Beef Patties

³Impact of Rosemary and Green Tea Extracts on the Oxidative and Flavor Stability of Cooked Ground Chicken Patties