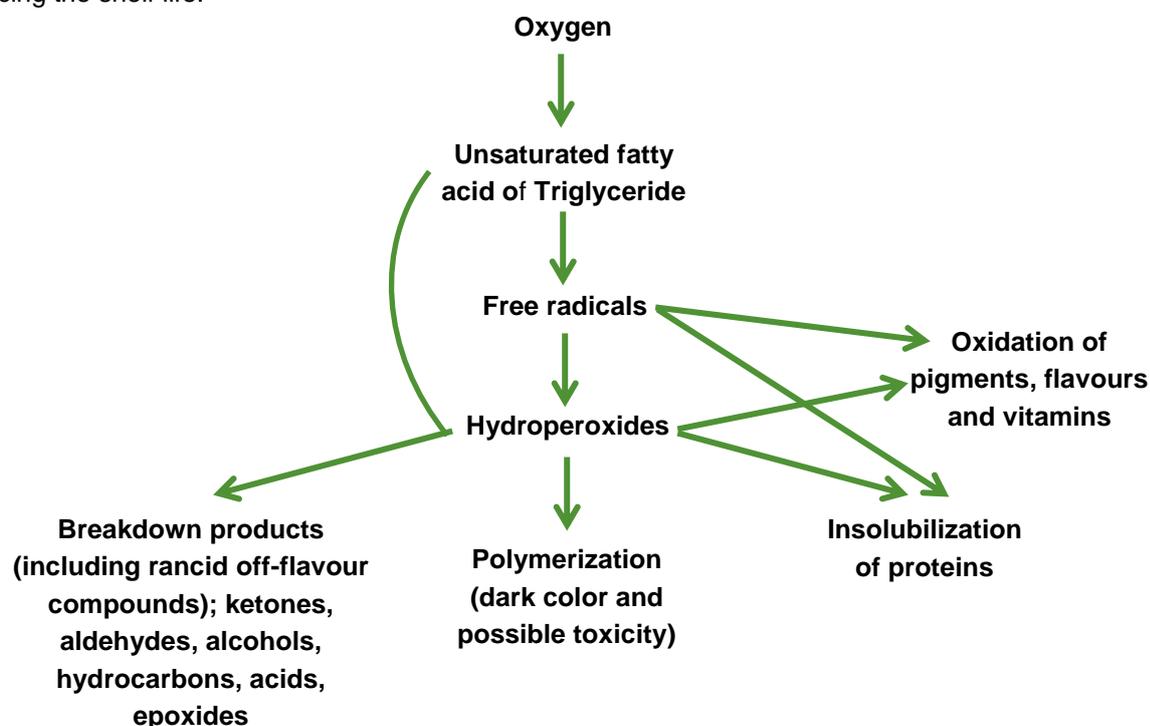




## What are Antioxidants?

Antioxidants are added to fats and oils to protect them from rancidity. Fat becomes rancid when exposed to air, heat and bacteria. Fat breaks down in two steps. Hydrolysis yields fatty acids that may actually improve the flavor up to a point (no more than 10%). Oxidation of unsaturated fatty acids yields ketones and free fatty acids that are usually unpalatable and potentially injurious. It takes as little as 0.05% of the fat to react with oxygen to produce rancidity and produce oxidative fragments, some of which are volatile and are perceived as the off-flavours of rancidity reducing the shelf life.



## Why is Ethoxyquin used?

**Ethoxyquin** is a quinoline-based antioxidant used as a food preservative in certain countries. It is commonly used as a preservative in pet foods, fish oils and fish feed to prevent the rancidification of fats. Ethoxyquin is also commonly used in spices to prevent color loss due to oxidation of the natural carotenoid pigments.

## Why Replace Ethoxyquin

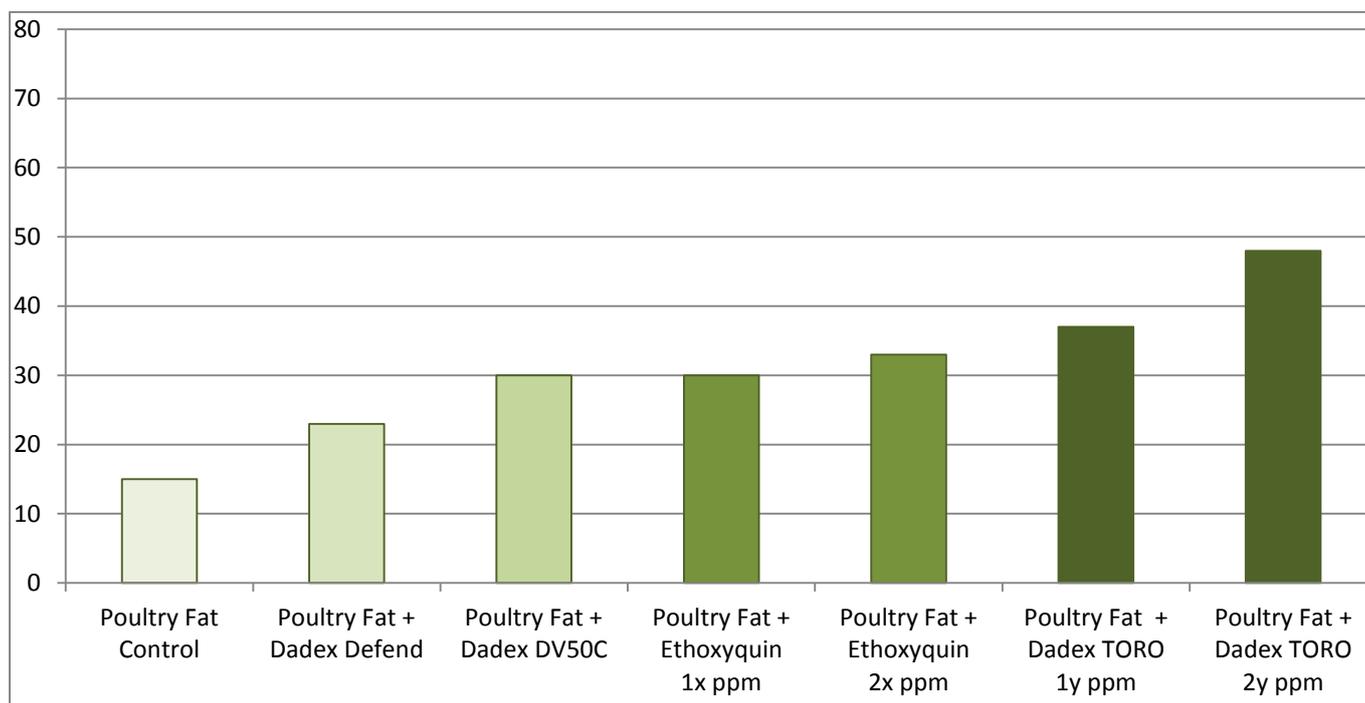
- There has been some speculation that ethoxyquin in pet foods might be responsible for multiple health problem and although to date, the U.S. Food and Drug Administration (FDA) has only found a verifiable connection between ethoxyquin and buildup of protoporphyrin IX in the liver, as well as elevations in liver-related enzymes in some animals which have not been linked to any known health consequences.

- The levels of Ethoxyquin inclusion in fish feed have been reduced dramatically over the past years. There is a growing concern over the use of Ethoxyquin in the food chain as it has been found in human tissue and breast milk.
- There is a rapid movement towards alternatives being led by IFFO (The Marine Ingredients Organization) and consumer groups.

## Maintaining Product Integrity without the use of Ethoxyquin

Excellent performance can be found with human grade synthetic and natural antioxidants in poultry fat such as Dadex<sup>®</sup> Defend, Dadex<sup>®</sup> DV-50C and Dadex<sup>®</sup> TORO

### Oxidative Stability Performance of Dadex Antioxidants Compared to Ethoxyquin in Poultry Fat



#### For more information, please contact

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