

**Natural Systems for Food Applications from Kemin**

Natural antioxidants and extracts from Kemin can conserve the flavor, color, and nutritional value in your food products by helping to delay the onset of rancidity, color change or pigment loss, flavor or odor profile change, and degradation of fat-soluble vitamins.

**Fortium® brand R30 Liquid Natural Rosemary Extract**

Fortium R30 liquid natural rosemary extract has a concentrated, oil-soluble formula that is ideal for addition to fats, oils, and processed meats. Fortium R30 liquid natural rosemary extract has no restrictions on usage levels in sausage other than GMP. It is manufactured with only GRAS ingredients under ISO 9001 quality standards.

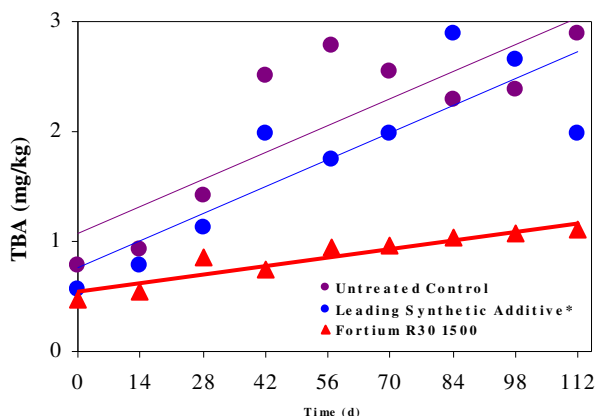
**Application: Pork Sausage**

Pork sausage is a popular, high-volume breakfast sausage that is highly susceptible to the formation of off-flavors, off-odors and color changes. Historically, synthetic additives have been used to maintain the freshness of sausage, but because of consumer concerns over the use of synthetics, many manufacturers are looking to natural



ingredients to maintain the freshness of their sausage products. Figure 1 displays the TBA values of raw pork sausage during frozen storage with 1500 ppm Fortium R30 liquid. TBA values are one measure of freshness and readings above 2 mg/kg are indicative of the formation of off-odors and off-flavors. As can be seen in the graph, the TBA value of the control sausage exceeded 2 mg/kg by day 42, the sausage with synthetic additive reached a TBA of 2 mg/kg by day 84; but the sausage treated with Fortium R30 liquid had only reached 1.1-1.3 mg/kg by the end of the study (112 days). This graph shows that sausage with Fortium R30 liquid remains fresh longer than when a leading synthetic additive is used.

**Figure 1. Freshness of Raw Pork Sausage during Frozen Storage with Fortium R30 Liquid.**



\*Applied at maximum allowable limit.

The graph above is just one example of how sausage including Fortium R30 liquid maintains its natural freshness longer. Testing has shown similar results in fresh refrigerated and pre-cooked frozen pork sausage.

When it comes to keeping your products fresh tasting longer, no other company gives you the comprehensive technical expertise and customer laboratory support you get from Kemin.

**Let us show you the Kemin Difference.**

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