



FEED   
**QUALITY**

MAINTAIN  
FEED  
VALUE

with Kemin Feed Quality Solutions

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**KEMIN**<sup>®</sup>

# What is feed quality?

In order to maximize animal performance, every bite of feed must be clean and nutritious. Every step in the process of making feed is a chance for quality to degrade and animal performance to suffer. To maintain feed value, producers must look for additional solutions to protect their quality. Producers should look for solutions to preserve their grain and the fats, oils and ingredients used to make their finished feed.

Only by addressing each component of the final ration can producers ensure total feed quality.

## GRAIN

### Grain Storage Treatments

Preventing mold growth during storage and during feed processing is essential to retaining grain quality and maintaining nutritional value of the final feed. Nothing can be done to improve the actual quality of grain in storage, so maintaining the quality at the time of harvest is the goal. Preventing mold growth not only helps preserve nutrients, it can help reduce the formation of harmful mycotoxins.

To combat these issues, Kemin has developed cost-effective solutions for grain treatments and grain storage to prevent mold growth. Kemin is recognized in the feed industry for pioneering the use of blended organic acids to control mold and wild yeast growth. Over the years, Kemin has thoroughly tested, evaluated and perfected various combinations of organic acids and buffering compounds to arrive at cutting-edge products like Myco CURB® and Ammo CURB® 85.

Treating crops with a blended organic acid before short- and long-term storage helps prevent grain mold and bridging of the grain. Grain treated before loading into ships at port location helps the grain arrive in better condition. Additionally, treated grain often receives a premium price when sold in international markets.

## OUR SOLUTIONS

### Myco CURB® Liquid and Myco CURB® Dry

Liquid and dry blends of buffered organic acids formulated to inhibit mold growth in livestock feeds.

### Ammo CURB® 85 Liquid

A buffered liquid mold inhibitor for processed feed ingredients and livestock feeds.

# FEED INGREDIENTS

## The little secret in your feed

Livestock and poultry producers may not like to think about the level of contamination present in feed ingredients. Because corn, wheat and barley make up the bulk of animal feed, the low-level inclusion of protein meal, by-products and roughage products, their contributions appear small. Most seed crushers and grain processors make high quality products. However, when making these products from grain, the protective seed coating is lost and carbohydrates, amino acids and vitamins are exposed to heat, moisture and oxygen. Once exposed, these feed ingredients rapidly degrade and lose value.

Treating feed ingredients with a blended organic acid at the processing plant or upon arrival in your facility helps prevent mold and wild yeast growth. Using a high-quality flow agent like KALLSIL reduces the harmful effects of naturally-occurring fungal metabolites found in livestock and poultry feeds. Feed ingredients treated before going into storage maintain the quality longer than untreated ingredients.

The Kemin line of blended organic acids has been proven to help preserve the quality of a wide range of feed ingredient and by-products. With over 40 years of experience treating feed ingredients, Kemin has the expertise to help maintain quality of any feed ingredient.

## OUR SOLUTIONS

### **Ammo CURB® 85 Liquid**

A buffered liquid mold inhibitor for processed feed ingredients and livestock feeds.

### **Feed CURB® Dry**

A dry mold inhibitor to inhibit the growth of mold in complete livestock feeds and processed or flaked grains for livestock.

### **KALLSIL™ Dry**

An enhanced zeolite flow agent to help reduce bridging and caking of feed and feed ingredients.

### **Myco CURB® Liquid and Myco CURB® Dry**

Liquid and dry blends of buffered organic acids formulated to inhibit mold growth in livestock feeds.

# FATS AND OILS

## Prevent lipid oxidation

When it comes to formulating diets, maximizing energy value and nutrient uptake are critical for animal performance. Unfortunately for swine and poultry nutritionists, lipid sources used in feed formulations today – animal fats, vegetable oils, blended fats and by-product oils – are not all created equal. These lipids vary not only in their physical and chemical properties but also in their susceptibility to oxidation – a major cause of decreased fat quality.

Feeding oxidized fats can decrease feed palatability, destroy fat-soluble vitamins and negatively impact performance of swine and poultry.<sup>1,2</sup> To assist producers in maximizing the value of their fats and oils, Kemin has developed research-backed natural and synthetic antioxidant systems specifically designed for different fats, oils and complete feeds.

## OUR SOLUTIONS

### **ENDOX® Dry**

An antioxidant for livestock feed, feed premixes and supplements.

### **RENDOX® ET Liquid**

A liquid antioxidant designed for poultry, pork and beef fat.

### **RENDOX® CP Liquid**

A liquid antioxidant designed for corn oil (ethanol and food grade) intended for use in livestock feeds.

### **NATUROX® Premium Liquid**

A blend of mixed tocopherols, chelators, emulsifiers and botanical extracts for livestock fat.

### **PET-OX® Premium Liquid**

A non-ethoxyquin liquid antioxidant for poultry and pork meal and livestock fat.

<sup>1</sup> Hung, Y.T., et al. 2017. Peroxidized lipids reduce growth performance of poultry and swine: A meta-analysis. *Animal Feed Science and Technology*, 231:47-58.

<sup>2</sup> Shurson, J., et al. 2015. Evaluating the quality of feed fats and oils and their effects on pig growth performance. *Journal of Animal Science and Biotechnology*, 6:10.

# FINISHED FEED

## Complete Feed

After all the feed ingredients are measured and mixed together, the real challenge to feed quality begins. The act of grinding grain exposes all the starch and sugars to mold and other contaminants. Then we add protein, vitamins and minerals to make a nutritionally complete diet for the bird and the pig – but this also makes a complete diet for microbes. The heat, moisture and pressure of pelleting reduces microbial load in the pelleted feed, but as soon as the feed is conveyed through a dirty auger or loaded into a contaminated bin or truck, mold growth starts all over again.

To help prevent microbial growth in feed, organic acids may be added to the ration during mixing. For best results when using organic acids, use a blended acid with multiple acids to act on numerous mold species to lessen their impact on your ration and ultimately on animal performance.

## OUR SOLUTIONS

### **Myco CURB® Liquid and Dry**

Liquid and dry blends of buffered organic acids formulated to inhibit mold growth in livestock feeds.

### **CURB® AF Liquid**

CURB AF is a formaldehyde solution that helps maintain quality of complete feed and ingredients.

### **CURB® RM Extra Liquid**

A liquid mold inhibitor for complete broiler and swine feeds and feed ingredients.

### **KALLSIL™ Dry**

An enhanced zeolite flow agent to help reduce bridging and caking of feed and feed ingredients.

1. Wright, T. 2013. Molds and Mycotoxins – Effects of Moldy Feed and Mycotoxins on Cattle. Ontario Ministry of Agriculture, Food and Rural Affairs.

# KEMIN FEED QUALITY PRODUCTS

### **Acid LAC™ Liquid**

A pH adjuster for livestock and poultry drinking water.

### **Ammo CURB® 85 Liquid**

A buffered liquid mold inhibitor for processed feed ingredients and livestock feeds.

### **CURB® AF Liquid**

CURB AF is a formaldehyde solution that helps maintain quality of complete feed and ingredients.

### **CURB® RM Extra Liquid**

A liquid mold inhibitor for complete broiler and swine feeds and feed ingredients.

### **ENDOX® Dry**

An antioxidant for livestock feed, feed premixes and supplements.

### **Feed CURB® Dry**

A dry mold inhibitor for complete livestock feeds and processed or flaked grains for livestock.

### **KALLSIL™ Dry**

An enhanced zeolite flow agent to help reduce bridging and caking of feed and feed ingredients.

### **Myco CURB® Liquid and Myco CURB® Dry**

Liquid and dry blends of buffered organic acids formulated to inhibit mold growth in livestock feeds.

### **NATUROX® Premium Liquid**

A blend of mixed tocopherols, chelators, emulsifiers and botanical extracts for livestock fat.

### **PET-OX® Premium Liquid**

A non-ethoxyquin liquid antioxidant for poultry and pork meal and livestock fat.

### **RENDOX® ET Dry**

A liquid antioxidant designed for poultry, pork and beef fat.

### **RENDOX® CP Liquid**

A liquid antioxidant designed for corn oil (ethanol and food grade) intended for use in livestock feeds.



**Adding Kemin Feed Quality solutions can prolong feed shelf-life, save on production costs and improve storage success.**

Partnering with Kemin means personalized support from the Kemin Technical Service and Customer Laboratory Service teams. Kemin offers customized product solutions, ensuring your animals receive the protection they need.

Call Kemin Customer Service, 888-467-0854 — [kemin.com/myfeedquality](https://kemin.com/myfeedquality)

