



The Liquid Advantage ...in Mill Applications

Specialized Coating Products For Specialized Mill Manufacturing Needs

- Texturized Feeds
- Sweet Feeds
- Show Feeds
- Custom Mill Blends





Quality Liquid Feeds Mill Product Program

SuprCoat™

Mill Coat™

Custom Products



- ◆ [Quality Ingredients](#)
- ◆ [Quality Assured Manufacturing](#)
- ◆ [Flexible Product and Custom Options](#)
- ◆ [Additive Options](#)
- ◆ [Technical Support](#)
- ◆ [Sales and Marketing Support](#)



Consistent Products that Work Load after Load!

QLF Mill Products key features contribute to making your feed products consistent, uniform and appealing to your customers and their livestock.



Key 1 -Consistent, High Quality Ingredients:

Cane Molasses is the highest volume ingredient in mill product formulas. QLF is the leading liquid feed manufacturer using domestic, high quality cane molasses that is consistent in quality and reliable in source. Its consistency combined with QLF's commitment to quality ingredients and Good Manufacturing Practices assures you a quality and consistent product.



Key 2 -Standardized pH Levels:

Our goal is to manufacture a quality mill product with cane molasses to enhance the appearance, aroma and palatability of your feed. Cane molasses products tend to be sticky and difficult to handle easily and efficiently through your equipment. QLF establishes and maintains a specific pH in our mill products to improve handling, flowability and decrease build-up on augers and mixers.



Key 3 -Flexible Product Line:

SuprCoat, Mill Coat and custom products are available in a range of Dry Matter, Fat and Sugar levels to meet the range of inclusion rates and environmental temperature and humidity in your mill and in your market.



Key 4 -Additive Enhancements:

SuprCoat, Mill Coat and custom products can include:

- Mold Inhibitors designed to extend the manufactured feeds storage life under normal storage conditions.
 - Surfactants to improve flowability and reduce stickiness.
 - Caramel flavoring to enhance aroma and contribute to consistency of your manufactured feeds.
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Key 5 -Technical, Sales and Marketing Support:

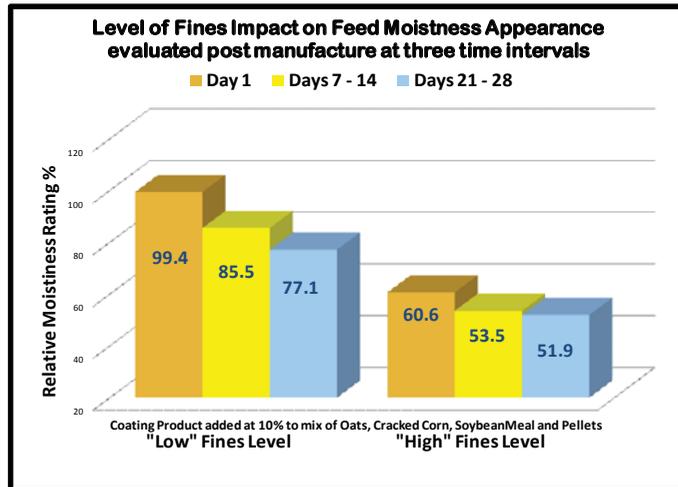
QLF's technical staff is available to aid you with manufacturing suggestions and mill product choice to assure finished product performance. QLF District Sales Managers are trained to support your needs, aid in problem solving and assist you with development of market resources.

Ensuring Finished Feed Quality

Consistency and Quality of Dry Ingredients

Dry ingredient quality and consistency in feed manufacturing, particularly pellets and processed corn, greatly impacts finished feed appearance.

Texturized feeds typically consist of whole or processed grains such as corn, oats, or barley; a pellet with protein, minerals and vitamins; and either a molasses or molasses-based commercial coating. Commercial coatings simplify production while extending shelf life.



Pellets should resist absorbing the molasses coating. A positive but not direct correlation exists between Pellet Durability Index (PDI) and how much moisture pellets absorb. Two pellets with a PDI of 95 may absorb moisture at different levels and rates.

To assure a high-quality texturized feed, pellets should be thoroughly cooled before coating, kept clean and be free of fines. Limited handling during manufacturing will limit development of new fines.

Fines from dry ingredient sources, particularly from processed corn, can negatively affect finished feed moistness and uniformity.

After processing corn (flaked, cracked or rolled), the fines must be removed. If left in the feed, the fines will absorb a disproportionate amount of the liquid ingredient. The resulting "molasses" balls detracts from the feed's appearance and consistency.

Steam-flaked corn requires additional handling to remove excess moisture. If the corn is too moist, the manufactured feed's shelf life and stability will decrease.

Ensuring Finished Feed Quality

Selecting the Right QLF Coating Product Winter and Summer

Selecting the right product is dependent on a variety of parameters; most important are temperature, humidity and feed moisture.

Winter:

Texturized feeds tend to brick or cake in the winter. A coating with lower total dry matter content, higher fat content, or both can alleviate these problems. How? Lowering dry matter reduces total sugar content. Caking is caused by sugar crystals forming between feed ingredients. The higher fat content alleviates bricking by better "lubricating" feedstuffs, so the feed cannot become packed like a brick under pressure.

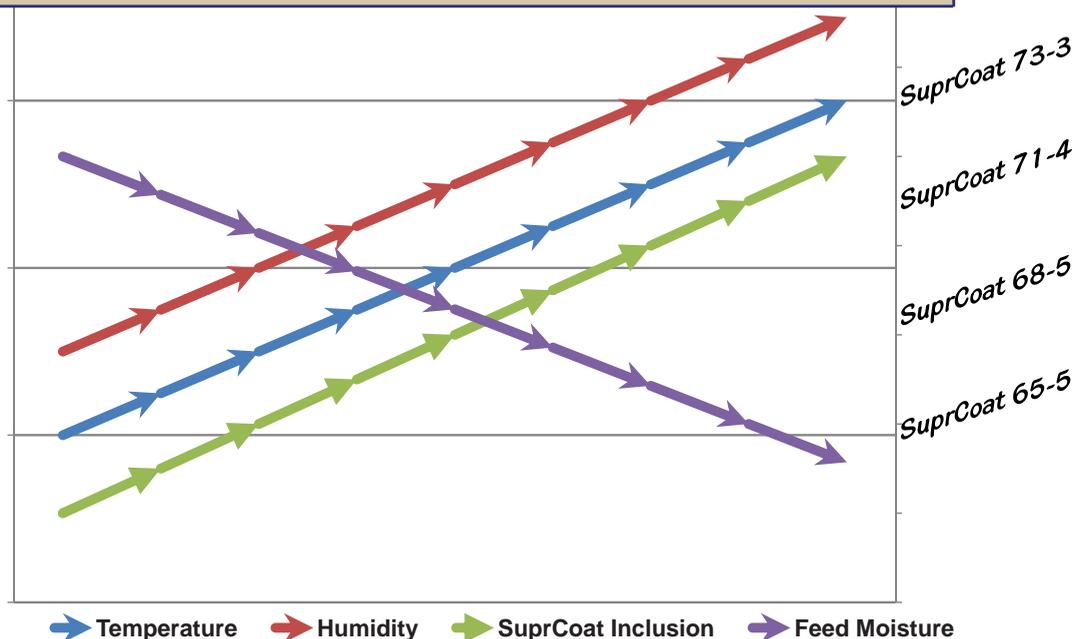
Summer:

Higher temperatures cause drying out. The solution is to do the opposite of what is suggested for winter temperatures: increase dry matter content and decrease the fat of the coating liquid. Why? Increasing the coating's dry matter adds sugar content or molasses level assuring a texturized feed that retains moistness longer. Decreasing the fat content frees more room for the increased molasses level.

Choosing the Correct *SuprCoat*

Coating Product selection needs to account for variations in temperature, humidity, feed ingredient moisture, inclusion rate and desired end product appearance.

To maintain optimum Texturized Feed appearance, as temperature and humidity increase, select a higher dry matter and lower fat *SuprCoat* and vary inclusion rate to achieve desired results.



Ensuring Finished Feed Quality

Commercial coatings typically comprise 5—12% of the finished texturized feed. The following is an explanation of Performance Assurance Checklist items to help assure best coating product choice, optimum finished feed quality and desired shelf life.

Liquid Storage/Handling:

Tank Type

Storage tanks may contribute to debris or tank contaminants. Little contamination should occur from a poly tank, but a concrete tank could begin to crumble and a steel tank can rust and flake.

Tank design (cone or flat) gives an indication of complete drainage. However, settlings can also occur in a cone tank.

Date Tank(s) Last Cleaned

Each storage tank should be emptied annually to evaluate tank condition and tank cleanliness. After evaluation, tank should be cleaned if needed. Also, tank should be emptied and cleaned before new product is placed in tank.

Number & Size of Storage Tanks

This determines quantity purchased per delivery as well as product turn over. It helps isolate product deliveries in the event problems occur.

Pump Size and Location

Pump distance from the storage tank and from the mixer is important for consistent flow and volume/unit time. A new pump might perform well at first if it is located some distance from the supply, but over time performance will diminish. It is important to use gear (positive displacement) pumps only. Centrifugal pumps will not handle viscous materials.

Ensuring Finished Feed Quality

Selecting the Right QLF Coating Product

Current Product Used:

This allows assessing whether the right dry matter and fat is being used at the proper time of year and for the type of feed being manufactured.

Quantity Purchased/ Delivered:

Allows us to better understand customers and their business to better serve their needs.

Tons of Feed Manufactured:

This provides an indication of product usage. It may also indicate the level of service needed or expected.

Mixer Type:

This gives an indication of how and when the coating product is being applied and the consistency of the mixture. Also, determine if the coating product is being weighed or applied through an in line meter.

Maximum Liquid Addition and Turnover:

The amount of mill product that can be added helps determine which coating product is recommended. Storage time of coating liquids should be considered when evaluating problems.

Type of Feed Manufactured:

This aids in best coating recommendation. It provides insight into potential manufacturing and finished feed problems that may occur, such as bricking or potential drying out problems.

Mold Control:

Feed freshness and microbial stability is important. Mold inhibitors can be custom added into QLF's liquid mill products to aid stability of the manufactured feed.

Average Storage Time of Manufactured Feeds:

Shelf life is of great concern to feed manufacturers. Average storage time is an indication of the amount of environmental pressure expected on the manufactured feed. Shelf life expectation determines the recommended amount of liquid added per ton of finished feed and the amount of mold control product to include, either within the coating product or by the manufacturer as a separate ingredient.

Value Beyond Product

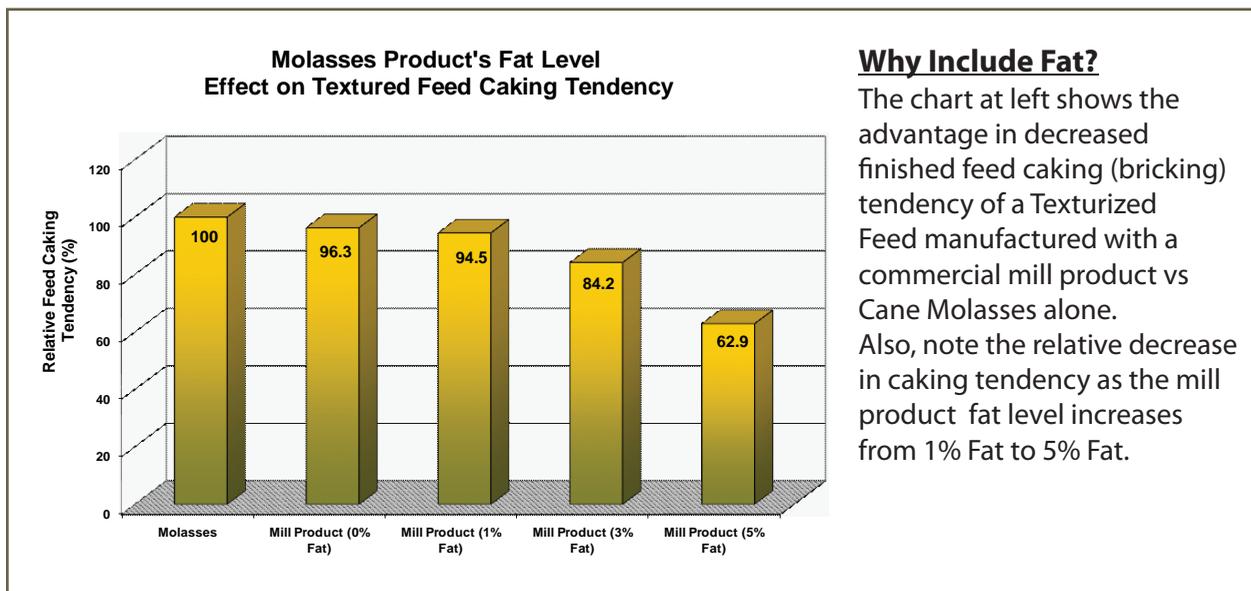
QLF provides more than product. Solving problems and overcoming challenges are keys to lasting business relationships that allows us to become a true partner. Listening to you and understanding your challenges assures we address the issues most important to you.

SUPRcoat™

The Premium Coating Product

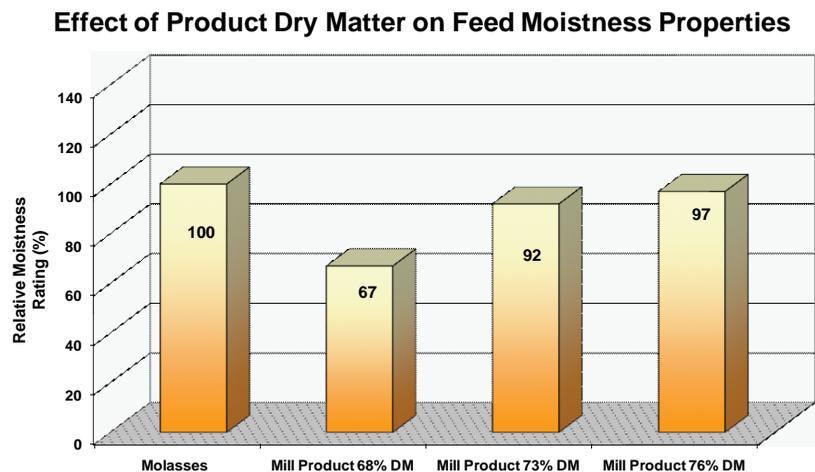
SuprCoat's Attributes:

- Enhances Appearance, Aroma and Palatability
- Offers a range of dry matter and fat levels to meet variations in environmental and manufacturing conditions.
- Consistent product manufactured with high-quality cane molasses.
- Standardized pH to improve handling, feed appearance, mixer maintenance and to reduce stickiness.



Why Dry Matter Matters:

The chart at right shows the advantage of using a higher dry matter Mill Product to maintain Texturized Feed moistness compared to using cane molasses alone. (Which is not a practical option due to handling considerations)



SUPRcoat™

The Premium Product

Looking Good, Smelling Good and Tasting Good With SuprCoat!



The picture top left is a dry mix of equal amounts of:

- cracked corn, whole oats and pellets

**The picture top right is after adding SuprCoat 74-3 at 7% of mix:
cleaner, brighter, more appealing to consumers and their animals.**

<i>QLF SuprCoat™</i>				
Enhancing Your Texturized Feeds				
	Moisture (% As Fed)	Dry Matter (% As Fed)	Crude Fat (% As Fed)	Total Invert Sugars (% As Fed)
<i>SuprCoat 65-5</i>	35.0	65.0	5.0	34.0
<i>SuprCoat 68-5</i>	32.0	68.0	5.0	36.0
<i>SuprCoat 70-3</i>	30.0	70.0	3.0	39.0
<i>SuprCoat 71-4</i>	29.0	71.0	4.0	39.0
<i>SuprCoat 72-5</i>	28.0	72.0	5.0	39.0
<i>SuprCoat 73-3</i>	27.0	73.0	3.0	41.0
<i>SuprCoat 74-3</i>	26.0	74.0	3.0	42.0

SUPRcoat™

The Premium Coating Product

◆ SuprCoat's Additive Options

Additives to personalize your product to meet your specific needs:

- ✓ Organic acids - to aid in inhibition of molds and yeast.
 - Custom Mold Inhibitor
 - *MYCO CURB®
 - *Ultra CURB®

*Trademarks of Kemin Industries Inc, USA

MYCO CURB® and Ultra CURB® are broad-spectrum mold inhibitors for addition to feeds and grains. Both can be custom added to QLF Mill Products. They must be included at rates consistent with Kemin Industries guidelines and directions. Kemin Industries recommendations are:

Feed Storage Time	Up 2 Weeks	Up 4 Weeks	Up 6 Weeks
lbs. MYCO or Ultra CURB®/T Grain Mix	2 lbs.	4 lbs.	6 lbs.

NOTE: These recommendations apply to feed that is stored in sealed bags and is below 18.0% moisture content.

- ✓ Caramel Flavor - to enhance palatability and aroma.
- ✓ Surfactants - to aid handling and flowability.
- ✓ Nutrient Additives - a wide range of nutrients can be custom added to QLF's Mill Products to conveniently mix and distribute into finished feeds. These include vitamins, microminerals and organic trace minerals.

Preventing Mold Growth - Adding mold inhibitors to your feed products is beneficial and a real value for your customers. They should be an added feature, not a replacement for Good Manufacturing Practices as part of an overall Quality Control Program.

Steps to Prevent Mold Growth

- Make microbiological stability part of your ingredient and feed quality control program.
- Maintain a strict mill housekeeping program.
- Rotate ingredients and finished feeds to keep them fresh and within shelf life guidelines.
- Use a quality, broad spectrum mold inhibitor.

Strategies for Microbiological Stability

- Monitor grain quality constantly. Maintain proper storage moistures.
- Testing for toxins may lead to a false sense of security unless one tests for all possible toxins.
- A black light test, which determines Kojic acid (and thus the presence of Aspergillus growth) is helpful but not definitive.
- Do not be afraid to reject ingredients that look or smell suspect or grains that are not protected with mold inhibitors.

Ensuring Finished Feed Quality

Performance Assurance Checklist

Finished feed appearance and quality are influenced by ingredients, formula, mixer type, amount and type of coating product used, amount of dry ingredient fines, product turnover, ambient temperature and humidity, temperature of ingredients and desired shelf life. This Checklist is a guide to ensuring best results.

Performance Assurance Checklist					
Name _____			Date _____		
Address _____			Telephone Number _____		
LIQUID STORAGE			LIQUID PRODUCT PURCHASED		
Tank Type	Poly	Steel	Concrete	Current Product Used _____	
	Cone Bottom		Flat Bottom	Supplier _____	
Location	Overhead	Ground	Basement	Current Product Description	
	Interior		Exterior	Specialized Liquid for Texturized Feed _____	
Number of Tanks	___ (1 - 3)	___ (2 - 3)	___ (3 - 3)	Mill Blend (molasses, mol/whey, mol/steeps) _____	
	_____ gals.	_____ gals.	_____ gals.	Pellet Binder _____	
	Tank Bottom		Tank Top	Current Product Specs _____ % Dry Matter	
_____ inches diameter			_____ % Fat		
Date Tank(s) Last Cleaned _____			_____ % Phosphorus		
Tank Agitation	Yes	No	_____ % Total Sugars		
Pump size - storage to mixer _____			Quantity Purchased/Delivery _____ Tons		
Distance – storage to mixer _____ feet			Other Liquids Purchased _____		
Pump Make & Model _____			Product _____		
FEED MANUFACTURE					
Tons manufactured _____ Tons / month			Delivery Hours _____ : a.m. to _____ : p.m.		
Mixer Type	Batch Mixer		In Line Mixer		
	Vert.	Horiz.	Rail Delivery Yes No		
Maximum Liquid Addition _____ %			Rail Line _____		
Liquid Inventory Turnover _____ Tons/Month			Biggest challenges faced in manufacturing texturized feed products are:		
Feed Type Manufactured (✓ those that apply)			✓ _____		
Texturized (pellets with whole grain)			✓ _____		
Texturized (cracked grain with fines)			✓ _____		
Other			✓ _____		
_____ % Horse	_____ % Calf	_____ % Other	✓ _____		
Mold Control Added		Yes	No	✓ _____	
Ave time between manufacture & feeding - ___ wks			Dealer for --- _____		

QUALITY LIQUID FEEDS, INC. Coating Product Program

<p><i>SuprCoat™</i></p> <p><i>SuprCoat 65-5</i></p> <p><i>SuprCoat 68-5</i></p> <p><i>SuprCoat 70-3</i></p> <p><i>SuprCoat 71-4</i></p> <p><i>SuprCoat 72-5</i></p> <p><i>SuprCoat 73-3</i></p> <p><i>SuprCoat 74-3</i></p> <p>Market and Use Guidelines</p>	<p>Mill Coat™</p> <p>Mill Coat 62-5</p> <p>Mill Coat 65-5</p> <p>Mill Coat 68-5</p> <p>Mill Coat 68-7</p> <p>Mill Coat 70-5</p> <p>Mill Coat 72-5</p> <p>Market and Use Guidelines</p>
<p>Formulated for manufacturers of high quality texturized feed with mill capability to handle and mix high cane molasses inclusion liquids throughout their storage, mixing and bagging equipment.</p> <p>Designed for premium coating and optimized feed appearance and animal appeal.</p>	<p>Designed for mill operators needing product flexibility to manufacture texturized feeds and a mill liquid product that mixes easily in mill equipment not devoted exclusively to texturized feed processing.</p> <p>Mill Coat will deliver coating, appearance and aroma to texturized feeds but may require slightly higher inclusion than SuprCoat.</p>

Consistent, Value Products that Work Load after Load!

QLF helps make your feed products consistent, uniform and appealing to your customers and their animals.



Nutrition and More . . .

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