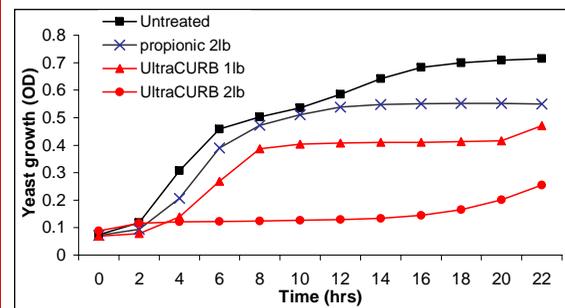
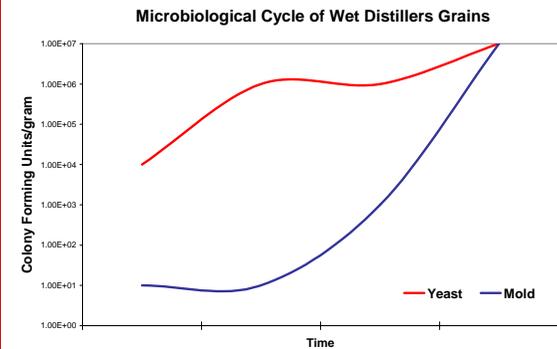


TMR Heating and Molding Simple Problem—Complex Causes!

Challenges caused by feed contaminated with mold are potentially a greater problem than once thought. Generally, a reduction in feed palatability and intake always occurs. However, molds can produce toxins that cause serious health and systemic problems.

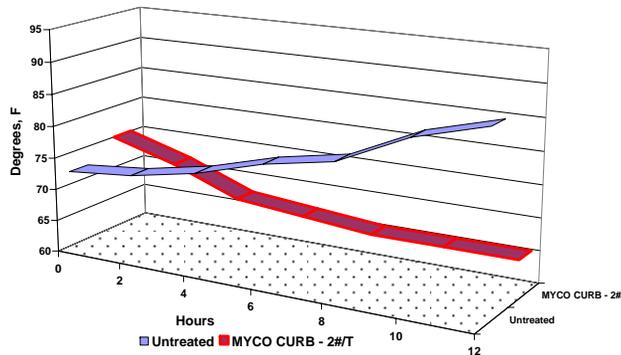
In addition, feed can be contaminated with yeasts. *In many situations*, the initial heating of a TMR is due to **yeast growth**. As yeast grows, moisture and heat are produced.

As the moisture content and temperature increase, optimal environment for mold growth is generated. See the graph below:



Adding a mold inhibitor to a TMR will prevent heating, maintain feed palatability and retain nutrients to help ensure animals will produce at their optimal level.

Note the graph below, adding 2 lbs MYCO CURB/Ton TMR prevented heating of TMR vs. untreated control. Research conducted by Kemin has shown that mold inhibitors can prevent TMR heating.

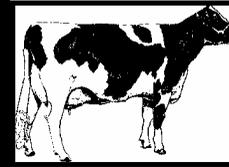


"Vulnerable TMR ingredients, like Wet Distillers Grain, are valuable feed ingredients, but if not managed properly, will accelerate yeast growth.

When challenged with rapid yeast growth, Ultra CURB is your product of choice. As shown in graph at left, Ultra CURB shows superior yeast inhibition due to its specific blend of organic acids.

Quality Liquid Feeds

"Adding Value to Your Feeding Program"



TMR's contaminated with molds or yeasts reduce animal performance, feed intake, milk production efficiency and increase production cost.

Adding MYCO CURB® or Ultra CURB® to QLF TMR supplements extends ration freshness and palatability. It is:

- ✓ Economical
- ✓ Easy
- ✓ Convenient & Safe

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Quality Liquid Feeds

P.O. Box 240
Dodgeville, WI 53533
800-236-2345
WWW.QLF.COM



B-9353

TMR Protector Program





TMR Protector Program



The high moisture content of TMR's make them highly susceptible to rapid mold and yeast growth and then, subsequent spoilage. The heating that occurs due to mold and yeast growth can be prevented with the addition of **MYCO CURB®** brand or **Ultra**

CURB® brand mold inhibitor. To select the most appropriate product and application rate for your TMR's stability, consider each parameter below and determine the application best matching your situation and TMR management.

- ✓ TMR Moisture** Just as important as silage moisture at the time of harvest, the moisture of the complete TMR will create an environment that can accelerate mold and yeast growth.
- ✓ Environmental Temperature** Consider the highest temperature the mixed TMR is exposed to in the bunk or TMR wagon during storage between feedings.
- ✓ Forage & Grain Quality** High moisture, ensiled forages and grain are incorporated into nearly all TMR's. Typically, these farm stored feedstuffs are well preserved and palatable feeds. They can, however, contribute to heating and molding under certain conditions. The guidelines below are general Quality Scores to quantify when those conditions may exist.
 - Quality Score 1** - Excellent ensiled quality, ambient temperature, no visible mold/yeast contamination.
 - Quality Score 2** - Good ensiled quality, greater than ambient temperature, visible mold/yeast contamination.
 - Quality Score 3** - Fair/poor ensiled quality, greater than ambient temperature, visible mold/yeast contamination.
- ✓ Vulnerable Ingredients** Some TMR ingredients are more vulnerable to mold or yeast growth because of their high moisture content. These ingredients may experience stability issues even before mixed into a TMR.

Wet Corn Distillers Grain	Wet Corn Gluten Feed	Whole Cottonseed
Wet Brewers Grains	Milling By-Products	

**Good Management
Always the Key to Success!**

Quality feeds and ration ingredients make successful feeding programs. The TMR Protector Program is a management tool to help, not replace, good forage and TMR management.

Protector Program Forage Guidelines:

- Harvest at optimum moisture levels for crop and silo storage type.
- Pack silage well to exclude oxygen as completely as possible.
- Utilize a quality fermentation aid designed for forage type ensiled.
- If ensiled in a bunker:
 - ◆ cover surface after ensiling.
 - ◆ keep bunk face clean.

Feed Bunk Management:

- Ensure stability of vulnerable ingredients (wet distillers grains, wet brewers grains, wet corn gluten feed, etc.) .
- Mix TMR just prior to feeding (allowing TMR to sit before feeding contributes to heating)
- Clean bunks and remove feed refusal.
- Reduce potential for yeast and mold growth by incorporating either MYCO CURB or Ultra CURB into your QLF TMR supplement.
- When hot and humid weather combines with use of poorly fermented forages or vulnerable ingredients, feeding frequency may need to increase.

TMR Application Rate Assessment

	Less than 50%	50% - 55%	Greater than 55%
TMR Moisture	Less than 70° F	70° – 85°F	>85°F
Environmental Temperature	1 - 2	1	1
TMR Mixing Frequency/Day	1	2	3
Forage Quality Score	1	2 to 3	3 or more
# of Vulnerable Ingredients	1 lb/TMR ton	2 lb/TMR ton	3-5 lb/TMR ton
*Minimum application level of MYCO CURB or Ultra CURB			

*TMR application rates are guidelines only. Multiple parameters affect minimum application levels, i.e. silage preservation, ingredient contamination, application method, etc.