DMX-7 – A new approach in moisture management for better grain & feed quality

DMX-7 Moisture Management Program

Storage → Moisture Management → DMX-7 treated corn stored for 8 months → Feed Production

Improved moisture uptake in the entire pelleting process

Very stable higher moisture feed for improved feed value & animal performance
High quality DMX-7 treated feed pellets.
DMX-7 is a unique product that helps to inhibit mold growth in grain and feed in two ways. Firstly, DMX-7 contains propionic acid, which is the most effective mold inhibitor available. Propionic acid is a broad spectrum mold inhibitor but has a very limited residual time due to its unstable volatile nature. DMX-7 is chemically engineered to lock in the propionic acid to have the effectiveness and advantages of propionic acid without its disadvantages. Secondly, DMX-7 contains deliquescents, substance that physically bond to water molecules, which will inhibit moisture migration in feed and grain.

DMX-7 is classified as a grain/feed conditioning mold inhibitor in a liquid form that can be used in 2 distinctive areas in a feedmill operation. First at the storage of corn, and secondly in the mixer, for a complete DMX-7 program. In general, **DMX-7 is not only a very good mold inhibitor, but also a moisture management tool for better grain & feed quality.** DMX-7 has been certified by FDA, EPA, and Health Dept. of California for Food Production, for food use in the USA.

In storage, it is apparent that you will lose a good part of the grain value. We buy grain for its nutritional package. Therefore, we need to be more concerned in maintaining the nutritional value and overall grain quality over storage. Needless to say, the whole grain & feed industry has not looked at it this way and as a consequence, loses billions of dollars without realizing it.

Basically, we need to thoroughly understand the problems before we can solve it with a workable solution. In this perspective, all the other so called mold inhibitor products have limitations to what they can achieve in actual corn storage in the field. Showing results in small scale tests and laboratory is one thing; being able to achieve the results in actual field scenario is the ultimate challenge. The marketing of DMX-7 has been a very slow process with tests done only in the field to prove our claims. This is because all the problems that we are looking at cannot be simulated in a laboratory or pilot scale test. Eventually, this is how all our current users see the benefits of using DMX-7. **“The field reveals truth hidden on the claim sheet”**.

Besides knowing the fundamentals of mold inhibition, we also need to understand the challenges of storing grain in the tropics. This is where DMX-7 stands out, with all the innovative features, necessary to solve the problems we so commonly see in grain storage. With such unique features, DMX-7 is able to offer you a moisture management program with complete flexibility when storing corn at a slightly higher moisture level than usual. Delst Inc., looks at mold inhibition with a holistic approach and bird’s eye view on all related parameters whereas other products adopt a very narrow focus.
OBJECTIVES OF USING DMX-7

- Inhibit moisture migration
- Eliminate sweating
- Prevent spontaneous heating
- Prevent insect infestation
- Maintain overall quality of corn
It is very common to see sweating and other related problems associated with it that greatly downgrade grain quality in storage. Aeration alone is not the answer to solving these problems. It is more effective to chemically manage the moisture presence in grain. We have shown the Grain & Feed Milling Industry that DMX-7, together with good silo and aeration management, the closest that anyone has ever seen in the last 30 years or more, a proven concept and approach to achieving the ultimate in grain quality from germ damage, discoloration, dry matter loss, nutritional loss, weight loss, mold damage & it’s related danger from toxin, insect infestation & contaminations related to it.

DMX-7 has shown promising result in the production of higher moisture feed. With the ideal steam quality being fed into the conditioner, the deliquescents in DMX-7 will physically bond to water molecules and this is how available moisture from steam can be effectively infused into the meal for improved gelatinization and pellet quality, thereon locking it in, minimizing moisture loss going through the entire pelleting process. In post production, it will continue to hold the extra moisture in place ensuring stability from mold contamination, maintaining freshness going through transit, storage, and right up to the feeders. The benefits and economic potential of producing higher moisture feeds is tremendous. Earning the extra value from moisture is one aspect; a better pellet quality & feed value plus a higher productivity is another.

Technically, the surfactant used by some products is basically a surface active substance that reduces surface tension of fluids. This has no significance whatsoever in the management of moisture and will not work in the same manner as the deliquescents used in DMX-7. Deliquescent is a family of chemical that will dissolve and become liquid by absorbing moisture in the air. Different deliquescent has different moisture absorption characteristics and DMX-7 is chemically formulated with a delicate blending of such substances to optimize the management of moisture in a fine balance. DMX-7 claims a patented and exclusive use of deliquescents, featuring the only moisture management program that is chemically more effective in handling moisture. No other products can lay claim to this feature if deliquescents are not being used.

In using DMX-7, there is a definite return of investment that will make more money for any company, unlike ordinary mold inhibitors, which is basically a cost. “It is not how much you pay for a product but how much you benefit out of your spending that is important”. For this same reason, we frequently have customers on other cheaper products changing over to DMX-7 after testing in actual storage and production conditions. DMX-7 could be more expensive but the benefits and gains far outweigh this small difference.

Today, DMX-7 is almost a generic name when it comes to exporting corn gluten meal from USA to the Pacific Rim, for the one reason that it is the only product that can effectively maintain the quality of the material shipped bulk in containers. Again, it is the unique features of DMX-7 that is making it so successful in this highly valued feed commodity. The same dual features of a long residual value of the propionic acid plus moisture management that we constantly emphasize, as an absolute priority for the ultimate mold inhibitor.
APPLICATION ON CORN GLUTEN MEAL

CONTROL

No sign of material movement upon opening of container door.

Material is caked up when retaining plank is removed.

Moisture migrates and percolates through the surface of the material. The air space gets saturated with moisture and condensates on the internal walls.

Surface of material is crusted with apparent mold growth.

A close up of damage - 1 ft. cross section from surface.

TREATED WITH DMX-7

Free flowing material ooze out of corners of retaining plank upon opening of container door.

Material is free flowing and tumbles down when retaining plank is removed.

Internal ceiling of container is dry.

Surface of material inside container showing its original quality.

A cross section view of material preserved in its original quality.