MMi Feed Additive

Is Your Feed Safe?

It is well accepted that feed quality is one of the foundations of a successful operation. The growing, harvesting, and storage of grains are directly affected by unpredictable environmental conditions. Improving the quality and consistency of the nutrients provided by feed is a prime concern of the producer.

One of the most common problems with feed quality is the accumulation of moisture in the grain during harvesting, processing, and storage. A high moisture level is the main cause of the development of harmful molds, bacteria and fungus in the grains. Molds, once established, spread quickly because as the mold's enzymatic process breaks down nutrients; more moisture is produced allowing other molds to germinate. Even when grains have been stored dry, moist spots may develop due to adverse environmental conditions allowing the development of molds.

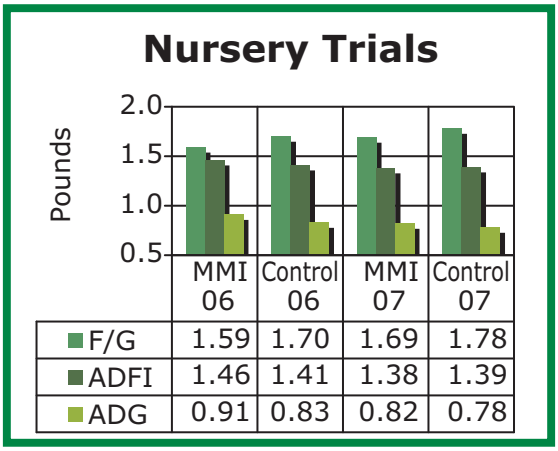
Today there is another option available to reduce moisture contamination in your feeds. ***MMi*** is a new, patented product developed and designed specifically for animal health. ***MMi*** is manufactured using the nanoclay called AMADÉITE®, dried yeast cells and diatomaceous earth. The combination of these ingredients, using the best technology available, brings forward a new era in animal health.

Why is MMi Distinctly Different From Other Products on the Market?

Through the use of nanotechnology, the natural absorbent quality of clay has been dramatically improved in ***MMi***. To accomplish this, the layers of clay have been widely separated to increase the surface area available for absorption. The product is then finely ground to further improve the absorption ability and to allow easy dispersion throughout the feed. The Ohio State University Extension Newsletter states that, "mold inhibitors cannot be effective unless they are completely and thoroughly distributed throughout the feed". Because of the small particle size, less ***MMi*** will be necessary to obtain better results.

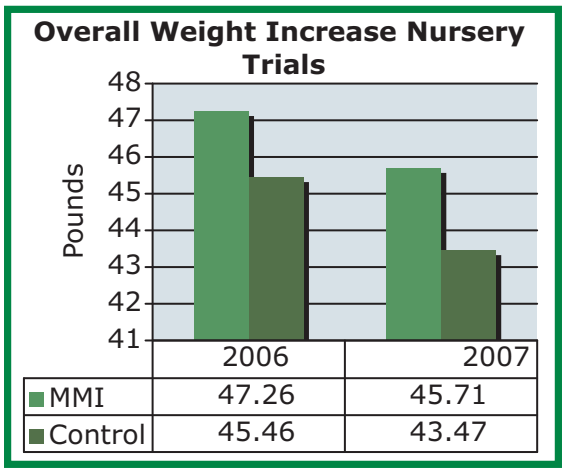
Have Any Research Trials Been Performed on MMi?

Over 20,000 nursery pigs have completed field trials showing consistent results. Two recent studies of over 2400 iso-weans were performed comparing ***MMi*** to control groups. These studies were conducted at a production nursery facility in Northern Iowa. Ongoing studies to collect data at the same facility are continuing. The current results show a similarity in results between the two completed studies. The results of the studies can be found in Tables 1 and 2.



	MMI 06	Control 06	MMI 07	Control 07
F/G	1.59	1.70	1.69	1.78
ADFI	1.46	1.41	1.38	1.39
ADG	0.91	0.83	0.82	0.78

TABLE 1



	2006	2007
MMI	47.26	45.71
Control	45.46	43.47

TABLE 2

Average Daily Gain (ADG): Both ***MMi*** groups showed a higher ADG of 9.6% (0.08 lbs) and 5.1% (0.04 lbs). Over a 54-day growth period, this would be an increase of 2.16 to 4.32 pounds per pig.

Pounds of Feed per Pound of Gain (F/G): The ***MMi*** groups needed 5.0% and 6.5% less feed for 1 pound of gain than did the controls.

Weight Increase: The weight gain of both the ***MMi*** groups were higher than in the control groups by 4.0% and 5.1%. This calculates to an increased weight gain in the pigs fed ***MMi*** of 1.8 pounds to 2.24 pounds per pig.

Conclusions: The trial results indicate that adding ***MMi*** is an advantage to the producer. The overall weight gain of the ***MMi*** groups, when compared to the controls, showed an average weight increase of 2 pounds per pig.

A study of over 400 pigs from growing to market was performed in Asia. The pigs were weighed individually and statistical tests were run on the data. The results showed improved production measures for the ***MMi*** group when compared to the control group (Tables 3 and 4). In this study the feed was tested for mycotoxin contamination and 100% of the samples were contaminated.

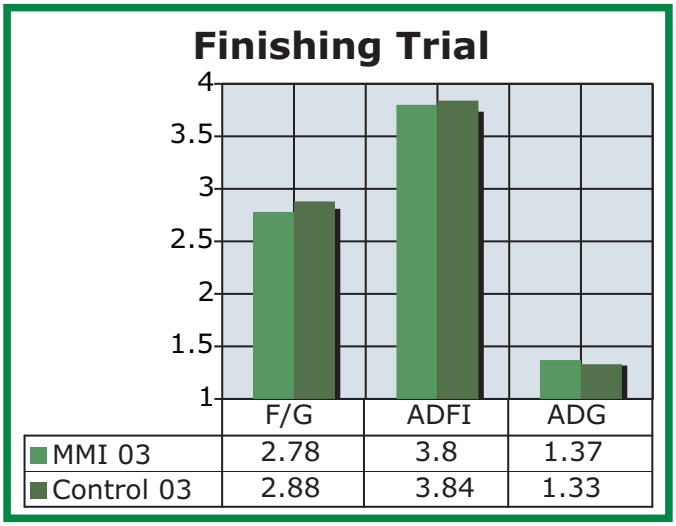


TABLE 3
F/G and ADG values are significantly different at $p < 0.05$

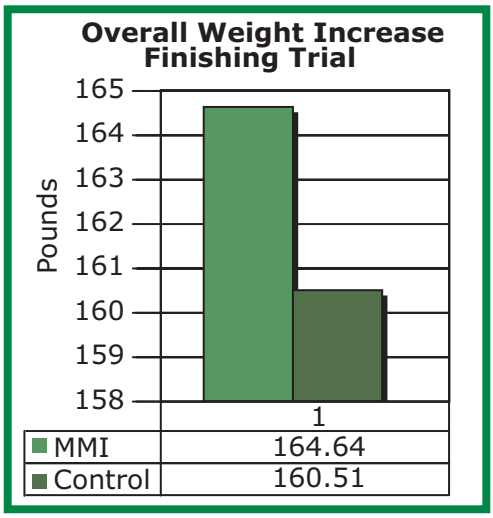


TABLE 4
Change in weight values are significantly different at $p < 0.05$

Average Daily Gain (ADG): A significant difference between the ***MMi*** and control groups ($p < 0.05$) was found, with the MMi group showing a 3% higher ADG than the control group.

Average Daily Feed Intake (ADFI): The ***MMi*** group had a lower ADFI than the control group.

Pounds of Feed per Pound of Gain (F/G): The F/G was lower for the ***MMi*** group by 3.5% indicating that less feed was required to obtain the end weight by the ***MMi*** group when compared to the control. This was a significant difference ($p=0.01$).

Weight Increase: The weight increase of the ***MMi*** group was 2.6% higher than the weight increase of the control group.

Conclusions: The ***MMi*** group was heavier by an average of 4.13 pounds at the end of the trial, which was significantly different ($p < 0.05$). For producers, this improvement in production is a clear advantage to using ***MMi*** during the grow/finish phase.

What Can You Do To Reduce the Risks of Mold Contamination?

Aeration of grains can help to prevent mold problems, but once the mold has been established additional oxygen and lower temperatures caused by aeration may actually assist certain molds in their development. Mold inhibitors are another means of reducing the risk of mold contamination, however the effectiveness has been variable for the producer. Once again, if the mold has already been established, the mold inhibitors will not destroy the existing mold, they will only prevent development in other areas of the grain supply. There are several types of mold inhibitors and a combination of types is probably the most effective. Organic acids (propionic, sorbic, benzoic or acetic) are typically used, however the salts of the organic acids (calcium propionate or potassium sorbate) are less caustic and are more widely utilized. The North Carolina Extension Bulletin states that if the concentration of the inhibitor is not high to stop mold growth, the mold can actually use the inhibitor as a food source, therefore increasing the mold contamination.

Feeding Rates for MMi

Gestation . . . . . 2.2 lb (1 kg)/ton
Farrowing . . . . . 4.4 lb (2 kg)/ton
Nursery . . . . . 3.3 lb (1.5 kg)/ton
Finishing . . . . . 1.1 lb (0.5 kg)/ton

These are recommended levels, but inclusion rates should be adjusted based on the contamination level of the feed.

MMi should be thoroughly mixed into the feed to insure even distribution.

Benefits of MMi

MMi is a superior product which is used for moisture reduction in feed. When moisture levels are lower, the potential for harmful mold, pathogenic bacteria and fungus is also lower. ***MMi*** is available through Advanced Management Solutions, a company that is already well established in the livestock industry as the distributor of the popular product, Mistral.

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