Maxi-Mil® HP

Product Summary Sheet

Introduction

Efficient livestock production requires high quality pellets with the right balance and moisture, produced with minimal 'shrink'. Feed technologists and mill operators are crucial in achieving this, but inclusion of a processing aid such as Maxi-Mil HP can augment their good work. Maxi-Mil HP gives mill managers the control to balance productivity through increasing throughput, improving pellet quality, reducing process loss and inhibiting mold growth.

MAXI-MIL HP

Making better quality feeds more efficiently

Maxi-Mil HP is a liquid processing aid added during feed milling, the benefits of which are felt throughout animal feed production and include:

- improved milling efficiency (reduced process loss, higher throughput and lower energy costs),
- improved animal performance through improved pellet quality, and mold control.

What's in Maxi-Mil HP?

Maxi-Mil HP is a complex blend of:

Surfactant

- Reduces surface tension of water
- Aids moisture binding
- Lubricates Process

Organic Acids

- Aids moisture penetration
- Inhibits mold growth
- Reduces surface tension of water, potentiating the effects of the surfactant.

Natural Terpenes

- Potentiates effects of organic acids

HOW DOES MAXI-MIL HP WORK?

Maxi-Mil HP works in several ways:

- The surfactant and organic acids in Maxi-Mil HP reduce the surface tension of water, allowing for faster and improved penetration of moisture through feed particles in the conditioner. This not only evenly disperses moisture within the particle which aids in pellet binding, reducing shrink/process loss and increasing throughput, but also helps lubricate the transit of meal through the pellet die. This lubrication reduces the friction between the feed and the die which lowers Delta T, improves throughput and increases die life.
- Reducing the surface tension of water also enhances the thermal energy transfer from steam, which improves conditioning, allowing heat to fully penetrate feed particles. Starch gelatinization and protein plasticization are improved, leading to better pellet quality.
- The organic acids in Maxi-Mil HP aid moisture penetration and help bind free moisture within the feed particle, reducing the opportunity for mold growth. The organic acids also inhibit mold by interfering with the molds' metabolism. The natural terpenes potentiate these effects.

Figure 1: Maxi-Mil IBC

Figure 2: Maxi-Mil application system

APPLICATIONS OF MAXI-MIL HP

Maxi-Mil HP offers feed millers and livestock producers around the world the benefits of significantly better quality feed produced more efficiently. Maxi-Mil HP allows mill managers to balance their productivity by improving pellet quality, reducing energy consumption, or increasing throughput.

Maxi-Mil® HP

Product Summary Sheet (cont.)

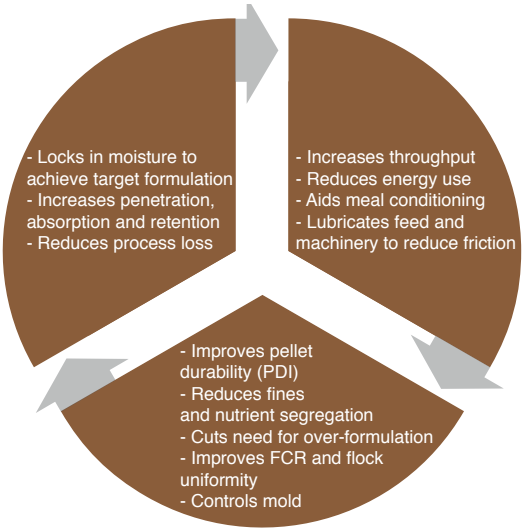


Figure 3: Benefits of Maxi-Mil

EFFECT OF MAXI-MIL HP ON MILL AND ANIMAL PERFORMANCE

Maxi-Mil HP helps meal retain moisture, reducing process loss and increasing profit. Attempting to use only water to compensate for process loss will decrease production rate and can stimulate mold growth reducing shelf life.

A high Delta T can lead to degradation of feed nutrients (i.e. vitamins, minerals, enzymes) and cause faster die wear. Maxi-Mil HP lubricates the die and reduces friction between the feed and die which lowers the Delta T, retaining the nutritional value of the pellets and reducing die wear.

By enhancing conditioning, Maxi-Mil HP improves both the physical and nutritional quality of the pellet. Better steam penetration results in improved gelatinization and plasticization of the starch and proteins that bind pellets together. This leads to fewer fines, higher PDI and less nutrient degradation.

By improving pellet quality, Maxi-Mil HP improves animal performance. By decreasing fines, less nutrient segregation occurs, improving livestock uniformity and feed conversion, as livestock demonstrate better feed efficiency when fed pellets over fines.

Maxi-Mil HP inhibits mold growth meaning feed pellets can be stored for longer periods of time.

INSTALLATION AND APPLICATION OF MAXI-MIL HP

Specifically designed Maxi-Mil equipment is installed, monitored and maintained by Anitox's professional engineers.

Technical support is provided by Anitox Feed Technologists, who have direct experience of mill operations and management and work with mill managers to address the complex and varying needs of individual mills.

Maxi-Mil HP is applied using purpose-built application systems (***Figure 2***), and is sprayed onto the falling side of the mixer through specialized nozzles (***Figure 4***).

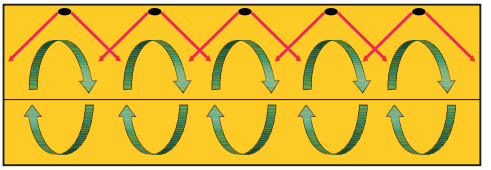
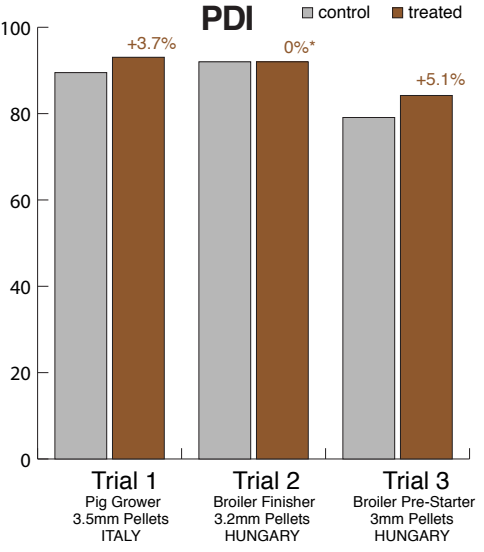


Figure 4: How Maxi-Mil is applied to the mixer

FIELDS RESULTS

Results from European commercial trials using products from the Maxi-Mil range:



*Trial 2 focussed on improving throughput while maintaining PDI. See Figure 6 for throughput improvement

Figure 5: EMEA - Effect of Maxi-Mil on PDI

Maxi-Mil® HP

Product Summary Sheet (cont.)

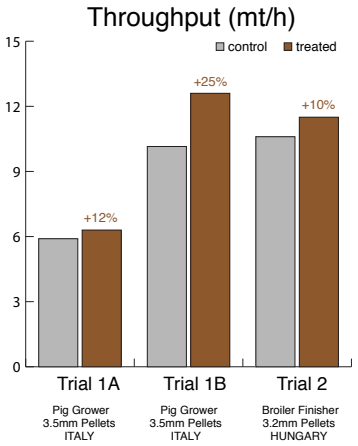


Figure 6: EMEA - Effect of Maxi-Mil on Throughput

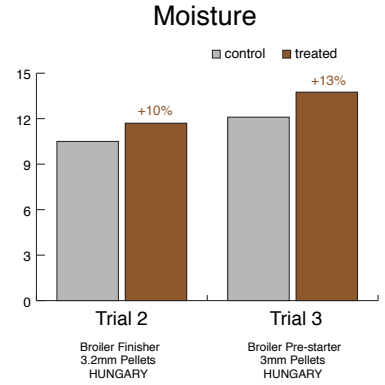


Figure 7: EMEA - Effect of Maxi-Mil on Moisture

Trial 2: Broiler finisher 3.2mm pellets in Hungary displayed a 10% increase in both throughput and moisture while maintaining PDI.

Figure 8: Effect of Maxi-Mil on overall pellet quality

Figure 9: Effect of Maxi-Mil on individual pellet quality

Further Reading:

- Maxi-Mil Products Mold Inhibition Experiment (CO_2) (Anitox Technical Bulletin: MM-01-0714)

- Impact of pellet quality on nutrient distribution in feed (Anitox Technical Bulletin: MM-03-0714)

- Maxi-Mil HP Safety Data Sheet

FOR ADVICE ON IMPROVING FEED MILLING, PELLETING AND QUALITY, CONTACT YOUR ANITOX FEED MILLING TECHNOLOGIST

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