

Product Handled:	Pelleted Feed (Equine and Cattle)
Particle Size:	3/8" – 1/2"
Bulk Density:	55 lb/ft <sup>3</sup>
Bag Type & Capacity:	<ul style="list-style-type: none"><li>• Open-Mouth Paper: 50 lb</li><li>• Open-Mouth Poly: 2.5 lb</li><li>• Open-Mouth Poly Doy Bag: 10 lb</li><li>• Plastic Pales: 40 lb</li><li>• Bulk Bag Poly-Woven: 2,000 lb</li></ul>
Plant Location:	St. Joseph, Missouri

### APPLICATION SUMMARY

BioZyme Incorporated, with its rich 70-year history, continues to be a pioneer in the field of animal nutrition and health. As a company dedicated to advancing agricultural products through fermentation technology, BioZyme has perfected producing research-proven pre-biotics and post-biotics for many animals, including cattle, swine, poultry, sheep, goats, horses and dogs. Notable customers include several elite equine athletes and some distinguished Kentucky Derby winners. The demand for their specialized feeds, particularly those requiring strict segregation, like medicated and non-medicated products, led BioZyme to seek innovative solutions for production efficiency and safe, accurate products.



BioZyme headquarters in St. Joseph, Missouri.

Recognizing the necessity to enhance their manufacturing capabilities without overloading their workforce, BioZyme collaborated with Magnum Systems to design a revolutionary automated system. The resulting solution has streamlined their production process and boosted overall production capacity gain almost tenfold, enabling them to fulfill customer needs with unparalleled efficiency.

*"When we looked at upgrading, we knew the first place to look was with a partner that we'd already been involved with, had a really good experience with and a great working relationship with," says Jared Brown, BioZyme's Maintenance Manager. "I'd say the number one goal in automation is to decrease the possibility of human error."*

This partnership was about meeting growing production demands and primarily supporting BioZyme's goals of nurturing customer relationships and exploring new market opportunities.

# PROJECT PROFILE: BIOZYME INCORPORATED

Key highlights from our collaborative project include:

- Integration with the existing robotic palletizing system to maintain seamlessness.
- An automated TEGN bag and bucket filling line offers exceptional packaging flexibility.
- A custom-designed TE10 filling line catering to small-batch specialty feeds.
- Implementation of innovative laser marking systems for flawless traceability.
- IBC-3000 filling system to fill bulk bags of product.



*The conveyance line has a bag kicker, flattener and an innovative optional bypass line for buckets.*



*Check weigh station in conveyor line with a reject conveyor for quality control.*

BioZyme's team stressed their customers' need for versatility in product delivery, whether in small or bulk packages. Magnum Systems designed a system that provides exceptional adaptability, allowing BioZyme to expand their service offering and enhance customer satisfaction.

Challenges, such as limited space and the need for diverse packaging capabilities, were skillfully met throughout the project. With expert engineering insights from BioZyme's plant engineer Dan Wierzba and strategic problem-solving by Magnum Systems' team, they devised an optimal solution illustrating Magnum's problem-solving capabilities and their commitment to customer success.

As BioZyme continues to grow, the relationship with Magnum Systems remains strong, highlighting a partnership that transcends vendor-client interaction and has evolved into a mutual appreciation of growth and success.

## EQUIPMENT SOLUTION

Thanks to this trusted partnership, Magnum was ready to collaborate when BioZyme sought a solution for handling specialty feeds with critical segregation between medicated and non-medicated products. The challenge was maintaining the integrity of highly regulated equine





products consumed by past Kentucky Derby contenders and champions and ensuring flexibility for other feed types. Magnum Systems' end goal was to significantly increase BioZyme's production without raising labor costs.

To address this complex task, Magnum's design and project management teams worked with the BioZyme team to implement a sophisticated, automated system that integrates seamlessly with their existing robotic palletizing setup. By creating a dual-path conveyor within a constrained space and accommodating diverse packaging types, we significantly enhanced BioZyme's service offering. The custom-built solution, crafted by Magnum's team, accommodates a range of packaging needs — from small doyp bags to substantial bulk bags — ensuring flexibility and control over production.

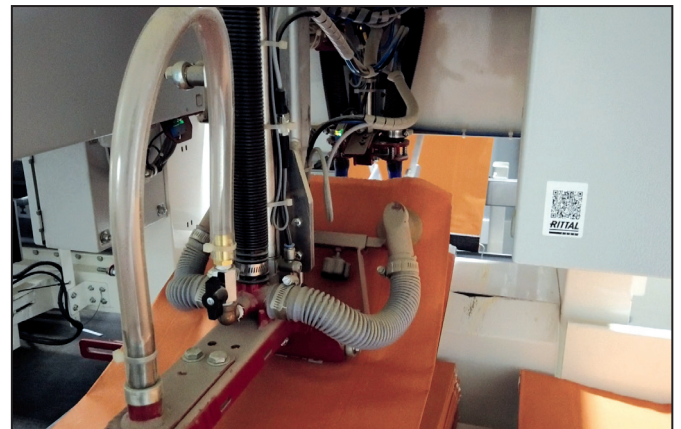
*"The new line Magnum has put in for us has sped us up significantly in our production rates," says Matt Power, BioZyme's Utility Production Manager. "Before, we could only do about three to four bags a minute. Now, we're closer to nine bags a minute. So, we've almost tripled our production rate."*

Magnum's technological innovation, particularly integrating a laser marking system for precise traceability and quality control, has scaled BioZyme's operational capabilities and strengthened their customer relations and market expansion. It also illustrates Magnum Systems' commitment to customer success, sustained partnership and shared growth.

## **EQUIPMENT FEATURED — SPECIALTY FEED HANDLING AND PACKAGING**

### **Customized Storage and Handling:**

- BioZyme incorporated a custom-designed portable auto bag placer allowing for both bag and bucket filling.



*Portable, automatic bag placer picking up bags for product filling.*



*Automatic product filling, moving to laser printing, then moving to sewing on the conveyor line.*

# PROJECT PROFILE: BIOZYME INCORPORATED

## Advanced Pneumatic Conveying:

- To efficiently label and track products through the process, a laser engraver was selected to mark the date, lot code and other vital tracking information for customer use.

## Innovative Packaging Systems — Magnum Systems provided BioZyme with a versatile packaging solution featuring the following:

- A gravity net weigh filler with auto bag clamps to receive bags from the bag placer.
- An auto bag placer, tag placer and sewing machine.
- An elaborate conveyor system, including bag labeling and check weigh conveyors, merges seamlessly with an existing robotic palletizing setup, upholding BioZyme's reputation for quality in the industry.
- Auto bucket labeling and lidding system for hands-free bucket handling.
- A vibratory net weigh filler for small packages.
- Bulk bag filling system to package product in bulk.



*The auto bag placer opens the top of the bag and places it under the filling spout.*

BioZyme's capacity to cater to distinct customer needs has dramatically increased through Magnum's system solution, offering an unprecedented tenfold increase in production while safeguarding product integrity. From initial discussions with BioZyme's dedicated team to addressing intricate packaging requirements, Magnum's custom solution conserves labor resources and accelerates BioZyme's ability to fulfill promises of unmatched product delivery levels to their valuable client base.

*Cody Jensen, BioZyme's Plant Manager, sums it up nicely, "It was an amazing experience, and it's still working today in a true quality fashion that we desired and talked about from day one."*

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Toll Free 800.748.7000 Fax 913.362.7863

7945 Flint Street, Lenexa, Kansas 66214

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