

BioExx Specialty Proteins chooses QTA to Streamline their Quality Control Operations

Overview

BioExx's proprietary technology for creating high-value proteins is breaking new ground in the food and feed industry. Older, conventional methods of processing vegetable oils require extremely high temperatures, resulting in denatured proteins and reduced nutritional value. BioExx has achieved a major milestone, developing a new method of processing these oil seeds at lower temperatures, resulting in a higher quality end-product.

BioExx's innovative use of easily recoverable refrigerant-based solvents provides a low-cost platform for production of specialty protein products, such as those used in protein bars. The firm, which is headquartered in Toronto and operates a processing plant in Saskatoon, processes canola to produce protein concentrates and isolates for the aquafeed, specialty feed and human food markets while also producing canola oil and canola meal.



The Challenge

The large-scale production of proteins from biomass requires frequent testing to guarantee that the end-product meets high standards of quality. In order to produce an excellent food-grade product, rigorous testing at multiple stages of the process is of the utmost importance. Verifying product specifications through in-process testing and end-product analysis helps to ensure this standard of excellence is met.

BioExx initially utilized a mix of traditional wet chemistry methods along with other instrumentation, including ICP to test for phosphorus and sulfur in oil, a leco protein analyzer to analyze for protein and Gas chromatography to analyze for erucic acid in oil. Some of this testing was contracted to external laboratories.

These previous methods of testing were, BioExx Quality Manager Mel Shotenski points out, "labor intensive and costly." BioExx needed to simplify the testing process, while somehow maintaining the high caliber of its products, decreasing testing costs and minimizing wait-times for test results.

The Solution: Quality Trait Analysis

BioExx choose the QTA System to overcome the need for cumbersome and expensive testing procedures while still maintaining high quality product. QTA provides a unique solution to the challenges faced by food and feed firms. Over the course of only half a year, QTA has already made a positive impact on BioExx's production processes. The QTA system is now set up on-site in BioExx's laboratory, used for both in-process and end product testing. QTA personnel worked with BioExx to develop a customized application which tests the major components of the processing steps to ensure compliance to specifications and operating parameters.

The QTA system is also used to test end products prior to sale and shipment.

How BioExx Benefits From Using QTA

Improved Production Turnaround Times

Overall, the QTA System helps BioExx streamline its testing procedures, therefore optimizing production time. The speed and accuracy of the QTA system enables BioExx to conduct timely in-process testing, eliminating rework of materials. QTA provides BioExx with the ability to perform multiple testing for multiple components in-house on a single instrument. Testing which previously required a delay of several hours or even an overnight wait can now be accomplished in a matter of minutes. Quicker testing results in reduced production time from raw biomass to ready-to-ship product.

At current production levels, says Shotenski, "QTA saves us at least 16 hours a week of technician time. At maximum capacity, this could relate to as much as forty hours per week."

Reduced production costs

Shotenski, whose responsibilities include overseeing the BioExx laboratory and quality control systems to meet HACCP requirements, explains that in the food & feed industry, testing plays a major role in production and release of product. Both in-process and end-product testing are necessary in order to maintain quality. Previous methods of testing often slowed the production process and required additional expense in the form of outsourcing and/or highly skilled lab personnel. The QTA System helps BioExx simplify the time and labor equation. Shotenski points to 3 specific areas in which BioExx's use of QTA has already reduced production costs over a five-month period:

- Minimize product re-work time, thus lowering associated labor and material costs
- Eliminate repeat operations due to non-conforming in-process materials going further into production
- Eliminate costs associated with destroying below standard end-products

Ease of Use Resulting in More Effective Deployment of Personnel

Shotenski notes that "the learning curve for QTA is very short compared to other methods." The QTA system can be taught to lab personnel and operators in two sessions, with the second one being only a matter of reinforcement and verification of initial training. No chemistry or technical background is necessary to operate QTA at the customer site.

Shotenski anticipates that the simplicity of utilizing QTA will result in additional savings

to BioExx in the future as operators are able to implement QTA testing on more sample types. This would enable lab personnel to focus solely on more specialized testing that previously would have been outsourced.

Summary

"I would recommend QTA" says Shotenski. She gives the QTA System's innovative method of testing high marks for timeliness and ease of use, both of which result in reduced costs. As a new company, producing a new product to market, BioExx grasps benefits of this new technology of testing.



About Cognis' QTA® Business

QTA® is a service business within Cognis Corporation – a worldwide supplier of innovative specialty chemicals and nutritional ingredients, with a particular focus on the areas of wellness and sustainability. The company employs about 5,500 people, and it operates production sites and service centers in 30 countries. Cognis' QTA® business

provides on-site, ready-to-use analytical capabilities without additional investment in equipment or personnel. Patented, centralized calibration technology enhances accuracy. For more information on the QTA® system, visit www.qta.com

Cognis is part of the BASF Group, the world's leading chemical company. In 2009, Cognis recorded sales of about 2.6 billion euros and an Adjusted EBITDA (operating result) of 364 million euros.

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