

Welcome to the Spring 2007 edition of InBrief.

Our Customer Satisfaction survey this year flagged 2 key issues. Firstly, that our customers really appreciate the difference in service that dealing with an actual enzyme manufacturer rather than just a reseller brings. The technical support benefits that come from dealing with a company like Biocatalysts, who have a fundamental understanding of enzymes and what they can do, is seen as a real positive amongst our customers.

Secondly, as in previous years, product consistency is a key issue. For your processes to work efficiently you have to be sure that our product is the same month in, month out, year in, year out. With many of our customers having been with us for over 15 years, we think this is a good testimonial and the high scores you gave us in this area corroborate this.

The end of March brought our half year point and the results indicate that this will be another exceptionally good year for

Biocatalysts. This continues the strong sales growth trend we have consistently achieved over the last 5 years.

Our next major event is IFT 2007 in Chicago, USA (Booth Number 3758), we look forward to seeing some of you there. Please come and make yourself known to a member of the team if you are attending, they would love to meet you.

Caroline West
Editor

New Recruits

Our ever expanding team grows with 3 new recruits since the start of the financial year, all of whom interface with our customers in some way.

Elaine Powell is our new Sales Order Processing person. Highly experienced in export documentation, Elaine has seamlessly replaced Eira Brown who, as many of you know, has now retired. We knew Elaine in her previous life working for one of our suppliers and were thrilled when she agreed to join the Finance Team under General Manager Mike Clay.



Craig Phillips is Mike's second new recruit this year, Craig as Accounts Administrator, is responsible for the monthly accounts and the purchasing function and has quickly made his mark on the role.



Mark Price is our new Quality and Regulatory Affairs Manager. Previously Mark was with pharmaceutical company AstraZeneca for 5 years as Quality Manager, so brings with him experience in many of the disciplines we require.



New Product Launches – 2 New Lipases for Flavour Applications

We are delighted to launch two new lipases for use in the production of Enzyme Modified Cheese. Lipomod™ 691P and Lipomod™ 768P.

Lipomod™ 691P has been described as having a 'sweet whey' note, a rounded flavour with some overtones of 'cooked' notes and the free fatty acid profile has high levels C16, C18 and C18.1.

Lipomod™ 768P gives a more waxy, aged flavour with an acid bite but not too bitter and here the free fatty acid profile has high levels C18.1 with good levels C4 and C16.

If the flavours of either of these enzymes would be appropriate for your process, or you are looking to develop a new product, then please feel free to contact the sales office and talk to Deborah Davies (Sector Manager - Flavour) who will be delighted to assist you. If you feel that you would benefit from having a customised enzyme for your process, then please see the section on Enzyme Development and Contract Manufacture.

If you need to contact any of the above please contact the sales office in the usual way.

Enzyme Development and Contract Manufacture

- Are you involved in developing products for the food industry?
- Do you need our assistance to show you the huge number of ways speciality enzymes can aid your process?
- Does your product need that competitive edge? Better flavour from your EMC Flavour, more juice extracted per kilo of fruit?
- Do you have a specific process problem you are trying to solve? Blocked filters, slow factory throughput, long processing times?
- Are you being put under pressure to increase yields and reduce factory waste?
- Do you think you are missing an opportunity to create value from your waste stream but aren't sure how to proceed?

OR

- Have you developed an enzyme and need to scale up the fermentation process and downstream purification in order to 'go' commercial.
- Are you searching for a partner to manufacture your products under contract?
- Do you need access to technical expertise in scaling up enzymes for commercial production?
- Do you have a biotransformation enzyme that needs larger scale production?

If the answer is **YES** to any of the above (and many more questions besides) then **Biocatalysts** can help you.

We have:

- Wide enzyme knowledge across a huge variety of market sectors that allows us to transfer knowledge into new, innovative applications.
- The ability to react quickly and flexibly to your needs.
- The right company size that allows us to focus on customer service and that enables us to deliver the product that you need, when you need it.
- Comprehensive enzyme production facilities.

We can demonstrate our expertise – opposite are examples of real case scenarios where we have added real value to customers' projects.



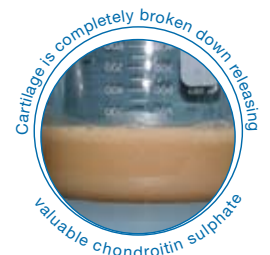
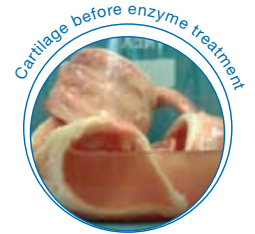
Market – Enzyme Modified Cheese – Flavour Matching

- Customer's existing enzyme supplier discontinues product that customer uses in the production of their EMC.
- Customer comes to Biocatalysts with brief to help them solve this problem giving us a sample of the existing enzyme.
- Using a combination of techniques including free fatty acid profiling we are able to provide the customer with a range of samples to test.
- One sample proved superior for their process giving exactly the flavour profile they desired (and indeed better than the original).
- Customer has since gone on to develop other new EMC flavours for their process with us.



Market – Chondroitin Sulphate Manufacture – Increasing Process Yield

- Customer enquired whether a tailored enzyme could be used to increase yield of chondroitin sulphate from cartilage.
- A range of protease enzymes were screened.
- The best enzyme gave a huge 20% increase in yield worth \$400 per tonne of cartilage processed.
- Additionally the enzyme worked more quickly enabling more cartilage to be processed in the same time.
- Also the new process produced chondroitin with less residual protein making it much easier to purify.



Market – Diagnostics/Biocatalysis - New Enzyme Requiring Optimisation

- Customer had developed a novel enzyme in collaboration with a university and now needed someone to optimise the process and manufacture the enzyme on a commercial basis.
- This complicated procedure required technical input from both our New Product Development and Production teams in order to optimise the process and move the project through the various stages which included:
 1. Modifying the media to ensure the components would be available in bulk quantities without using any animal derived components.
 2. Adaption of the fermentation parameters to batch-fed process which increased the yield 20 fold.
 3. Scale-up the cell harvesting in line with good practice for genetically modified organisms.
 4. Scale-up cell disruption to release the intracellular target enzyme.
 5. Scale-up the purification steps (including chromatography) to make it operable at the production scale.



Customer Satisfaction Survey 'Biocatalysts provides excellent service'

(Quote from our recent service survey)

And what is really great, is that it's their customers who say this.

Every year, for the last four years, Biocatalysts, working with Charter Solutions, have undertaken a detailed customer service survey to help them continue to improve the service they offer to their customers. Using internationally recognised standards, Biocatalysts service is benchmarked and once again they prove to have excellent levels of service in all the key areas.

This year electronic questionnaires were used to give as many customers as possible an opportunity to participate.

"This year saw Biocatalysts improve in virtually all of the key areas of service and this was building on an already excellent previous year's level. Customers really scored them very highly on Reliability and Assurance (they trust them to get it right) and all of the other areas scored well above national benchmarked levels. Customers also felt that Biocatalysts, once again, compared extremely favourably, in terms of service, with competitors and their other suppliers. Many of their customers felt, as with previous surveys, that this year Biocatalysts was not only a great enzyme supplier but they were their best supplier.

Customer comments also indicate that they would recommend Biocatalysts' to others and that Biocatalysts approach, philosophy and values really fitted with their own. They also felt that the quality of both the service and the product was of the highest order.

Once again Charter Solutions and Biocatalysts would like to thank everyone who responded to the questionnaire and whilst the questionnaire is a useful snapshot we welcome feedback at any time – it the only way we can continue to provide excellent service and meet our goal of continuous improvement in all that we do".

Jon Thedham

Associate Director Charter Solutions

Powder Blending Room Update

Some of you will already be aware that we have recently refurbished our powder blending room and are now proud of our facility meeting the most modern standards for dust containment.

Manual handling is always a key issue when it comes to the manufacture of products and we always want our employees to have a practical and safe working environment that assists them in the demanding jobs that they do. With this in mind we have installed vacuum hoists complete with an access platform that should make life a little easier when it comes to producing 1000kg production runs!

At the same time we have taken every opportunity to improve plant hygiene and product safety and are justifiably proud of the commitment we have made in these areas which, in turn, should give huge peace of mind to our customers.

One of the key objectives of the refit was to increase our capacity to meet the growth in demand for our products including new facilities for custom packaging. Many of our customers, whether they have a bespoke enzyme developed for them or buy a standard product, require it to be packaged and labelled in a certain way and we are delighted to provide this service.

If you require more information about custom products or packaging please do not hesitate to contact the sales office.

Enzymes Work Berry Hard in New Fruits!

Are you a fruit or vegetable processor capitalising on the current health trend for fresh fruit and vegetable juices?

Have you progressed from working with oranges, carrots and tomatoes to more exotic alternatives such as acai berries, raspberries, blueberries and blackcurrants? If so you may find that the pectinases and other enzymes that were previously suitable for your process are not working as effectively. Here at Biocatalysts we understand that because the structure of fruits and vegetables varies you will need different enzymes to achieve the best results.



You can achieve this one of two ways. Either you can buy an off the shelf product that will contain a range of activities, some of which may be appropriate but you run the risk of paying for side activities that are not relevant to your process. Alternatively you can have a bespoke product developed specifically for your process. You may want to increase the levels of anthocyanin available in the end product, the more intense the colour of the juice, the more valuable the juice is. Alternatively, you may decide that increasing yield is the most important objective with the additional benefit that waste is automatically reduced. Indeed we are finding increasing numbers of companies setting separate objectives for waste reduction to achieve their environmental aims.

We are always happy to talk to processors about their requirements and specialise in solving process problems. The benefit of having such a huge technical resource is that it gives us the option to transfer knowledge from one area to another and be creative in the way we approach your problems. This flexibility differentiates us from other speciality enzyme companies. If you would like to discuss your process with one of our technical team, please contact us via sales@biocats.com.

New Sample System

Our commitment to despatch standard product samples 3 working days from receipt of the request form has always set us apart from our competitors and we achieve on-time despatch over 95% of the time. However, in our constant desire to improve our service to our customers we have now incorporated samples into the Sage Manufacturing Controller software system we use for

managing our raw materials requirements. The main benefit of this system is the ease with which batch numbers can be traced and sample stock levels easily established. This information may prove useful if you have queries about your samples some time after they arrive or after testing or indeed have an urgent sample requirement linked into trials you are already conducting.