

InBrief33

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Welcome

to the autumn edition of InBrief, this edition is filled with news of our recent customer survey results, new products and more details of our recent restructuring and how it affects you, our customers. The technical article in this edition is **Enzymes for Soluble Fibre**.

You will also notice that InBrief has slimmed down, see inside for details! As always, it will still be packed with useful information about speciality enzymes and Biocatalysts. Please let us know if you have any ideas for articles or items for inclusion in InBrief, we would love to hear from you.

Caroline West



“Biocatalysts has, for the last four years, endeavoured to benchmark its service levels. They have consistently scored highly across a range of service areas and they are constantly striving to improve all aspects of their service and support for customers.”

Jon Thedham, Charter Solutions

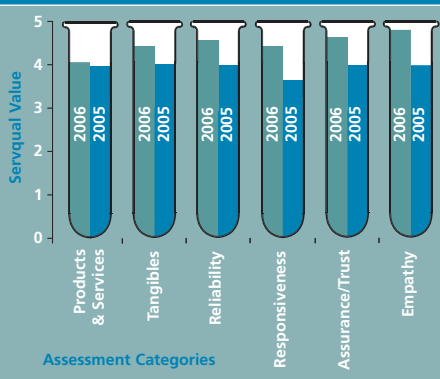
World Class Customer Service

When we embarked on our first customer satisfaction survey 4 years ago we were exceptionally pleased with the results and the feedback from Charter Solutions, an independent Market Research company, who carried out the research.

Indeed, the comments from Jon Thedham (Charter Solutions Consultant) who was responsible for the project, were that the results were among the best he had ever seen. Never complacent, we continue to implement small but meaningful changes that we hope make the lives of our customers easier and contribute to our reputation for exceptional customer service. The numerical values range from 1-5 with anything over 4.2 being deemed as world class.

In particular, we scored exceptionally highly in the empathy section, which focuses on the perception the customer has on their relationship with us. Our strategy is always to have multi-point contact with our customers so that technical people talk to technical etc. We think this contributes to this score, the fact that there are no barriers within Biocatalysts to talking to the right people and this engenders a confidence in our customers.

Customer Satisfaction Survey Results



A reasonable question to ask now is **What next?** Next year we have made the decision to bring the process forward by one quarter so that we can easily incorporate any improvement initiatives into our planning for 2007-08, in May of next year. The survey may also take a slightly different format next year with us contacting a much higher number of customers, possibly via a web based questionnaire.

As always, we are looking to canvas a wide range of opinions from our customers as possible. If you are interested in taking part in one of our customer surveys then please do not hesitate to contact us at sales@biocats.com.

Empathy	2006	2005	2004
They understand our specific needs and requirements	5.0	3.5	4.0
They give personal attention	4.5	4.1	4.2
They have our best interests at heart	4.7	3.8	4.0
They keep us fully up to date with information related to our needs	4.8	4.0	3.7

Soluble Fibre – New Opportunities for you with Biocatalysts Enzymes

Are you working in any of the following areas?

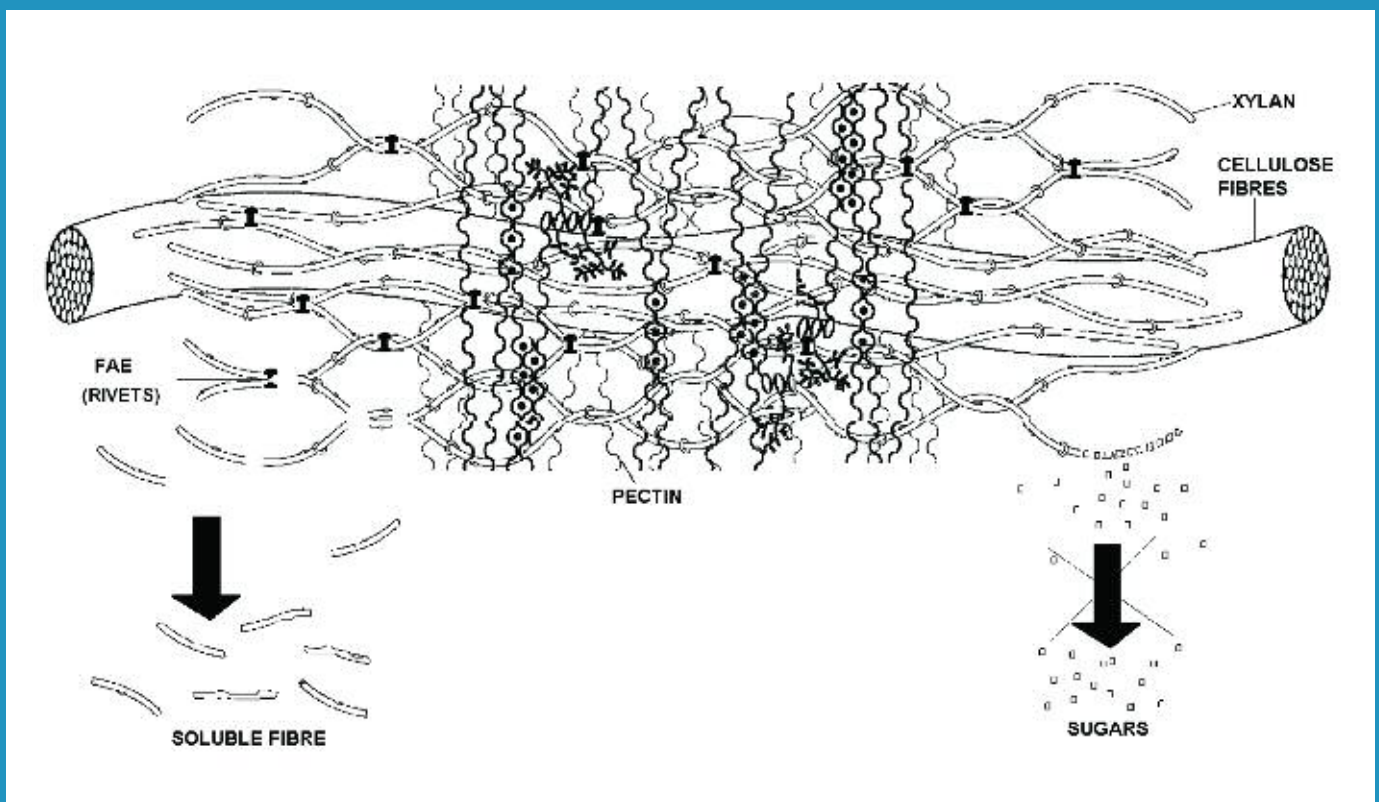
If you are working with potential sources of soluble fibre (or even raw materials that are not currently being used to produce soluble fibre) we would be interested in talking to you. We feel that there is huge scope for taking undesirable waste products and producing valuable soluble fibre from them that can be added to other end products.

Plant cell wall material, which is a great potential source of soluble fibre, is difficult to break down owing to the 'chemical rivets' holding the cell wall polysaccharides together. These rivets are composed of ferulic acid esters

(FAE-di-phenolics, see diagram below) and most commercial cellulase/pectinase preparations do not contain an enzyme capable of breaking these bonds. Plant cell wall break down is an area of active research and development for Biocatalysts and this work has included much study into the action and development of ferulic acid esterases, enzymes capable of breaking down the plant cell wall rivets.

Currently, most commercially available enzymes act on insoluble fibre in a way whereby if the fibre is broken down at all, then it is broken down into sugars and not

soluble fibre. This is because most commercial enzymes contain high levels of exo-activity which generates soluble sugars and not soluble fibre. Due to the high Glycaemic Index that sugars have, this is totally undesirable from a health point of view. What we want is to use enzymes so that healthy soluble fibre is the end product. Products with high levels of soluble fibre will have a low glycaemic index (low GI is good). The diagram shows two enzyme breakdown routes, one producing sugars (undesirable) and the other soluble fibre (desirable).



New Products Available for the Production of Soluble Fibre

Biocatalysts are proud to announce the availability of two brand new enzymes for the production of soluble fibre from wheatbran.

Depol™ 761P is a GM enzyme producing outstanding results on soluble fibre from wheat bran. Laboratory trials have shown that this enzyme increases the amount of available soluble fibre by a massive 46% and because there are no side activities, this significantly reduces the chance of the wheat bran being broken down into sugars rather than soluble fibre.

If you are unable to contemplate a GM enzyme then, as always, we have an alternative in **Depol™ 762P** which again increases the amount of soluble fibre from wheat bran by an impressive 19%.

Samples of both these products are available for you to test just contact the customer services department.

Biocatalysts Enzymes can be Involved in the Production of Soluble Fibre in the Following Ways:

Releasing fibre - Depol™ 692L can be used to macerate plant cell wall material releasing fibre and has been shown to be highly effective at solubilising wheat bran and corn bran. It is important to ensure that the side activities of the enzyme do not degrade the desirable fibre into simple sugars that do not count as fibre.

Improving the functional characteristics of high fibre foods - Wholegrain and high fibre foods are often dense, dry, difficult to eat and may have a poor flavour. Enzymes may be used to improve the functional characteristics of the non-fibre components. This needs to be assessed on a case by case basis.

If you are unsure whether enzymes would benefit your process – ask yourself the following questions:

What would the “healthy carbohydrate” be, and from what source?

Eg:

- Whole grains
- Whole grain flour
- Fibre / bran e.g. wheat bran, and oat bran
- Partially purified soluble fibre e.g. Oat soluble fibre (beta glucan)
- Digestion resistant starch / digestion resistant maltodextrin
- Purified soluble fibre
 - Inulin
 - Beta glucan
 - Non-digestible sugars e.g. raffinose from soya or tagitose

You may find enzymes beneficial if you process raw materials to produce speciality ingredients with improved functional characteristics (or you buy these ingredients from a manufacturer to use in your product).

Are you are experiencing problems associated with using a raw ingredient with lower digestibility?

Are there functional characteristics of the raw ingredient you would like to improve or overcome?

- Density of wholegrain bread / loaf volume?
- Taste / texture
- Particle size / solubility / viscosity
- Emulsifying capacity
- Undesirable components that could be removed
- Poor balance of other components

Do you aspire to improve the yield or purity of your process or product?

Eg:

- Increase breakdown of grain structure to release more soluble fibre
- Remove digestible material to produce a purer indigestible product

Working Together for the Benefit of our Customers

In the last edition of InBrief we announced the restructuring of our External Sales Team to a sector, rather than geographical basis.

This has worked extremely well with the Sales Team gathering global market knowledge about their specialities.

To complement this, they have now been teamed up with a member of the New Products Development Department to analyse new scientific information, discuss market opportunities, answer more complex technical enquiries, and to work jointly on customer initiated projects. This immensely powerful

combination of resources ensures that customers’ needs are met as efficiently and effectively as possible.

As always, the route for enquiries is via the customer services office, either by telephone or by email, sales@biocats.com.

Your enquiry will then be dealt with by the most suitable person and we guarantee that you will have a response to your enquiry within two working days.

New Database – New Media

With the amount of junk mail or spam that the average person receives in a day constantly escalating, we have made a conscious decision to minimise this trend here at Biocatalysts.

We asked a random selection of recipients whether they would miss InBrief and the overwhelming response was yes! So, it has had a slight revamp and is now only 4 pages. The reader reply page has been discarded because it was rarely used, with the majority of you contacting us direct, or through the website (www.biocatalysts.com). Better utilisation of the front page will give a marginal loss of space overall and a significant saving in trees!

It is also the intention to use our new customer database, 'Salesbase', to offer smaller, more targeted mailings to our customers on a regular basis. So for example, if you have expressed interest in enzymes for protein hydrolysis and we launch a new

product in this area, then you will be advised accordingly. You will not however be inundated with information regarding enzymes for baking or egg processing!

We are also hoping to link this into the one slightly disappointing area of our customer satisfaction questionnaire. Under the section entitled "Responsiveness" we had a question:

The sales team help us develop our business? (Score 3.1).

This is an average score and we hope to improve it by keeping you informed about your areas of specific interest. This will then assist you in exploiting market opportunities and keep you up to date with new developments.

Our website is also updated every other month to ensure that it contains current information. It is still our intention to send out the occasional email newsletter which will contain wider ranging information that you all need to know on a shorter timescale, eg; any changes to our manufacturing processes that may affect you, or further customer improvement initiatives.



New EU Enzyme Regulations for the Next Decade

It often comes as a surprise to many of our non-European customers that there are no current European regulations on food enzymes; that will be changing in the medium term as some proposed regulations have just been published by the European commission. However, these are in reality not likely to come into force until 2010 at the earliest. At the moment these are just proposals produced by the Commission and they will not be looked at by the European Parliament until next year.

In Europe, unlike in the USA, most food enzymes are treated as processing aids and not additives, the new proposal keeps this distinction. So what eventually will be different? The main difference will be the creation of a single European enzyme positive list; how currently-used enzymes will get on that list is not clear at the moment, but the adoption of a US GRAS system is highly unlikely. So enzymes that have been safely used around the world for decades will still have to go through an approval process.

Also produced is a new proposal on food ingredient and processing aid approval. Some see this as a simpler route to current. However, the timescales are long. EFSA, the European Food Standards Agency will have 6 months to consider and approve an enzyme on safety grounds. But then the approval will go back into the Commission for 9 months before the enzyme will get final approval.

The new regulations might mean you will encounter a new English word – comitology. What does this mean? At the moment new regulations have to be formally legislated for in every national parliament. Comitology essentially means that these new regulations will come into force without having to go through individual parliaments. However, regulatory life in Europe is never that simple. Some countries such as France and Denmark already have national enzyme regulations, so these will have to be repealed in their national parliaments before the new regulations are fully adopted European wide.

Also please remember these are regulations for food processing enzymes. Enzymes for use in the following industries are already separately regulated for: animal feed, additives (a couple of enzymes are classified as additives), dietetics, flavour and other additive manufacture and wine (yes, most enzymes

cannot be used by European wine manufacturers, is this maybe why parts of the European wine industry are in crisis?).

In essence, customers do not need to worry about these regulations as they will not have any impact on the industry for years and during this interim period Biocatalysts will do everything necessary to ensure our products, labels and documentation are fully compliant. If you have any specific questions please do not hesitate to ask us.

