BACTOCELL®
LACTIC ACID BACTERIA FOR MONOGASTRICS

LALLEMAND

LALLEMAND ANIMAL NUTRITION
'animal sanum in natura sana'

For immediate diffusion
August 31st, 2009

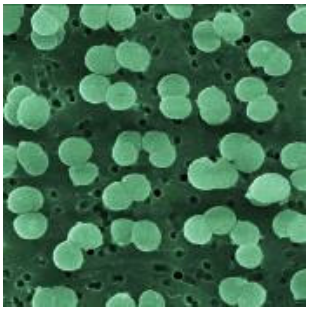
CONTACT: Mathieu Castex,
Junior Product Manager Aquaculture & Yeast Derivatives
Tel: +33 (0) 562 74 5555
E-mail: animal@lallemand.com

MEDIA RELATIONS: Sylvie Roquefeuil-Dedieu
Tel: +33 (0) 684 727 610
E-mail: sroquefeuil-dedieu@lallemand.com

BACTOCELL®: the First Probiotic Authorized for use in Aquaculture in the European Union

Lallemand's unique lactic acid bacteria recognized to improve performance in salmonids and shrimp

---



Blagnac, France - Lallemand Animal Nutrition is pleased to announce that the European Standing Committee on the Food Chain and Animal Health[1] has voted for the authorization of its probiotic, **Bactocell®** (lactic acid bacteria strain *Pediococcus acidilactici* CNCM MA18/5M), for use as a zootechnical feed additive in salmonids and shrimp. Bactocell therefore becomes the first probiotic authorized for such use in aquaculture in the European Union. This authorization is based on the recognition of the quality and safety (QPS status) as well as the efficacy of Bactocell in beneficially enhancing salmonid and shrimp production.

- **In salmonids, Bactocell is able to improve the quality of the final fish products by increasing the number of well-conformed fish** (prevention of Vertebral Compression Syndrome). This syndrome, which is thought to affect over 20% of rainbow trout harvested constitutes an important economic loss for fish farmers. The use of Bactocell® in the prevention of Vertebral Compression Syndrome in salmonids is the subject of an international patent filed by IFREMER and INRA in 2006.

- **In shrimp, Bactocell is able to increase survival and growth performance.** The trials submitted with the application dossier unequivocally demonstrated beneficial effects in terms of growth enhancement, feed utilization, as well as improved resistance against *Vibrio* sp. infections.

Today, pressure for both sustainable and profitable aquaculture has fuelled the search for acceptable solutions for optimizing production in a natural and environmentally friendly way. Probiotics, which are

1 A Standing Committee is a committee of Member States Technical representatives who have the mandate to make decisions on behalf of their individual countries on matters of community interest. The Standing Committee on the Food Chain and Animal Health assists the Commission in the preparation of measures relating to the food chain.

defined as *"live-microorganisms which, when administered in adequate amounts, confer a health benefit on the host"*, have been empirically linked to improvements in aquaculture production in certain regions. However until now, the use of micro-organisms for zootechnical improvements in aquaculture had not been unequivocally demonstrated nor authorized in the European Union. This therefore appears to be the first of such authorization in Europe.

Probiotics in animal nutrition are classified in Europe as zootechnical feed additives, and as such are subject to very strict scientific assessments, requirements and regulations. Their assessments, by a panel of scientific experts, include in-depth evaluation of the identity, composition, quality, safety and efficacy of the particular strain on the intended target species. It is therefore a lengthy process demanding important investments by the manufacturer.

The exploratory trials on the possible use of Bactocell® in aquaculture started in 2002, with first, feasibility trials on live preys (Gatesoupe, 2002). This was followed by numerous field trials and in-depth studies, on shrimp, salmonids and other marine fishes, some of which will be subject to EU authorization following steeply from this first. The application dossiers for the use of Bactocell in shrimp and salmonids are therefore the fruit of several years of intellectual investment as well as, research and development conducted in close partnership with renowned researchers, institutions and leading private companies in aquaculture.

Bactocell® *(Pediococcus acidilactici* MA18/5M) is already authorized (since 2005) for use as a zootechnical feed additive in fattening pigs and chickens. Lallemand has recently sought to expand the use of this specific strain to cover use in layers.

***

About Lallemand

Lallemand, Inc. *is a privately owned Canadian company specialized in yeast, bacteria and yeast derivatives, for animal nutrition, baking, winemaking and pharmaceutical industries. Lallemand is the only major supplier of yeast and bacteria that is a primary producer of both.*

Lallemand Animal Nutrition *is dedicated to the development, production, and marketing of profitable, natural and differentiated solutions for animal nutrition and health. Our core products are live bacteria for probiotics and silage inoculants, specific yeast for probiotics, and high value yeast derivatives.*
Lallemand is a major supplier of probiotics and silage inoculants in Europe, North America and Africa. We also have a growing presence in Asia and South America. More news from Lallemand Animal Nutrition can be seen on www.lallemandanimalnutrition.com

References

Aubin, J., Gatesoupe, F.J., Labbe, L., Lebrun, L. (2005). Trial of probiotics to prevent the vertebral column compression syndrome in rainbow trout (Oncorhynchus mykiss Walbaum). Aquac. Res. 36, 758–767.

Castex, M. 2009. Evaluation of probiotic bacteria Pediococcus acidilactici MA18/5 M on penaeid shrimp Litopenaeus stylirostris in New Caledonia. Thesis presented at the "Institut des Sciences et Industries du Vivant et de l'Environnement (Agro Paris Tech)", Ecole doctorale Ecole Doctorale ABIES - Physiology, Nutrition. 386pp.

Castex, M., Chim, L., Pham, D., Lemaire, P., Wabete, N., Nicolas, J.L., Schmidely, Ph., Mariojouls, C. (2008). Probiotic P. acidilactici application in shrimp Litopenaeus stylirostris culture subject to vibriosis in New Caledonia. Aquaculture 275, 182–193.

Castex, M., Lemaire, P., Wabete, N., Chim, L. (2009). Effect of dietary probiotic Pediococcus acidilactici on antioxidant defences and oxidative stress status of shrimp Litopenaeus stylirostris. Aquaculture 294, 306–313.

Gatesoupe, F.J. (2002). Probiotic and formaldehyde treatments of Artemia nauplii as food for larval pollack, Pollachius pollachius. Aquaculture 21, 347–360.

Merrifield, D.L., Bradley, G., Harper, G.M., Baker, R.T.M., Munn, C.B., Davies, S.J. (2009) Assessment of the effects of vegetative and lyophilised Pediococcus acidilactici on growth, feed utilisation, intestinal colonisation and health parameters of rainbow trout (Oncorhynchus mykiss Walbaum). Aqua. Nutr. in press. DOI: 10.1111/j.1365-2095.2009.00712.x