玄米効果の大学研究 商品化に成功

会津天宝醸造

会津若松市でみそなどを製造している会津天宝醸造（満田製麺社長）は、琉球大学医学部の益崎裕章教授による玄米の健康への効果研究を発酵飲料として商品化したことが、英科学誌「ネイチャー」三月三十号で紹介された。東京電力福島第一原発事故以降、風評被害に苦しむ食品加工企業の挑戦が評価された。

同社は、肥満やメタボ、アミオリンの抑制効果がある研究報告を参考に、益崎教授と県産１０種の玄米を合わせ、ニクオエリア（玄米発酵）とワサビとにと連携してモデルを開発し、平成二十七年に発売した。商品名は「ネイチャー」にしたがって、満田社長は「県内の風評処理を含めると、現在約二千八百の販売台数が確認されている」と説明した。

記事はネイチャーの日誌に掲載されている。
Japan’s culinary restoration
How the science behind the washoku food tradition could ease the burden of an ageing society and breathe new life into an ailing agricultural sector.

BY BRETT DAVIS

Brown rice for diabetes
In southern Japan, researchers are working with a food and pharmaceutical company to develop fermentation-based beverages and supplements to prevent and treat obesity-diabetes syndrome. Hiroaki Masuzaki of the University of the Ryukyus in Okinawa and colleagues are investigating brown rice, which has long been known to improve glucose tolerance and prevent the onset of diabetes.

The researchers tested the hypothesis that brown rice specifically contains several metabolically-beneficial compounds not found in other grains.

The endoplasmic reticulum (ER) is a cellular network of tubules responsible for synthesising, folding and trafficking proteins within cells. In various diseases, ‘unfolding’ proteins accumulate in the ER, a condition called ER stress. These unfolding proteins are toxic to cells and induce apoptotic cell death. In recent years, studies have shown that the pathophysiology of obesity and diabetes is closely related to exaggerated ER stress in obese-diabetic mice. Notably, the fermentation-based gamma-oryzanol-rich beverage produced by Aizu Tenpo Co., Ltd. showed strong potential to improve the imbalance of gut microbiota in conjunction with the reduction of ER stress, says Masuzaki.

Unfortunately, the gastrointestinal tract is inefficient in its capacity to absorb gamma-oryzanol. So Masuzaki and his team, including colleagues at SENTAN Pharma Inc., encapsulated the compound in polymer poly (DL-lactide-co-glycolide) nanoparticles. They found that a single bi-weekly oral dose of ‘Nano-Orz’ markedly improved glucose and lipid metabolism in obese-diabetic mice compared to regular gamma-oryzanol. It also markedly reduced ER stress in various tissues.

The team is now investigating the potential benefits of gamma-oryzanol in cognitive impairment, decreased physical activity, and addiction to alcohol, nicotine and dietary animal fats, all of which are often associated with obesity and diabetes.