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<th>Ready-meals with a difference</th>
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Ready-meals, both chilled and frozen, are well established in the international market report Marina Braida and Ronan Gormley of Ashtown Food Research Centre in Dublin

Intel data shows that the value of the frozen ready-meals market in the UK has been reduced by the effect of price promotion, while chilled ready-meals continue to be a big rival in the market place. This has caused the main players to diversify into premium and luxury range prepared meals. The developing market for food in central and Eastern Europe may also represent an opportunity for increased sales of these products.

Most ready-meals are made up of a combination of carbohydrate (eg rice, potato or pasta), protein (fish or meat), vegetables and sauce. Despite increasing awareness of the health benefits from eating fish, ready-meals containing fish are less common than those containing chicken or beef and the appearance of such fish meals on the market are a relatively recent occurrence.

**Phases of sous vide and freeze-chilling**

R&D on ready-meals has been a major focus at Ashtown Food Research Centre (AFRC) for a number of years. Much of the activity has been focused on freeze-chilling, which is a combination of freezing and chilling in the name suggests. This gives major logistical benefits for the processor as large amounts of a particular ready-meal can be produced, held in deep freeze, and then lots can be tempered and released into the chill chain as required, ie the consumer buys the meal as a chilled product.

R&D shows that freeze-chilling is a safe and suitable technology for most types of ready-meal and also for other products such as fresh fish fillets held in modified atmosphere packs (MAP).

Trials have also been conducted on fish processed by sous vide technology which ensures a gentle and low temperature process that causes minimal damage to the product in terms of nutritive value and sensory properties. A number of fish species in gourmet sauces have been processed at AFRC by sous vide technology with good outcomes.

**Going beyond ‘low fat’**

We are in the era of ‘healthy choices’ and ready-meal companies are responding to this with meals containing reduced salt and calories. However, companies are only just beginning to realise the potential of ready-meals as carriers of functional (healthy) ingredients and nutraceuticals. Such meals have applications in all sectors of the community but especially to the elderly who may find meal preparation difficult and who may also be lacking in trace minerals and other nutrients (eg dietary fibre). The production of such enriched meals is likely to be a major growth area in the near future especially when the inherent health benefits of fish are superimposed, in these items become ‘doubly’ attractive.

These drivers led to the current study at AFRC on the formulation, preparation and freeze-chilling of a gluten-free salmon lasagne containing nutraceuticals and also a sous vide processed ready-meal of the same formulation but with Rigati pasta instead of sheets (still gluten-free).

The gluten-free aspect was introduced as intolerance to gluten and to flour-containing products is becoming more widespread in Europe. For example, one in 60 people in Ireland is a diagnosed coeliac and it is suspected that a much higher number are undiagnosed, ie latent coeliacs.

The research was conducted in association with Irish ready-meal producer, Dawn Fresh Foods as part of the EU-funded Seafoodplus project.

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a difference

place and competition is strong both in terms of choice and price. But in this special show that there is more than one way to add value to these products

Salmon sauce

SALMON sauce (15% salmon content) and pasta were being shown at the recent Anuga food show. The sauce was formulated as pasteurised above and the cooked gluten free pasta bats were cooked in boiling water. The finished product was showcased in a pasta lasagne, containing the autoclaved, which was then served with mozzarella. The lasagne was that evening (3/15) and closed overnight at 9pm.

Sous vide processed salmon pasta

Sous vide ready meal with nutraeuticals

Stefan Schöler, President of Juval Food International, was brought in to develop new products that would provide added value. His team of experts developed a sous vide salmon lasagne and a commercial gluten free salmon lasagne. They conducted consumer tests for the developed product and a commercial comparably salmon lasagne. The finished product was then tested at 5% overall level for sensory analysis. The finished product was then tested at the lips and 4 cm inside and 2 cm inside, showing a large difference in the finished sauce with the development. The gluten free lasagne was also tested by a couple of teams that tested the developed product. The finished sauce was then tested with a commercial gluten free lasagne. The finished product was then tested at 5% overall level for sensory analysis. The finished product was then tested at 5% overall level for sensory analysis.